2011-2012

ENVIRONMENTAL REVIEW COMMISSION

MINUTES

MINUTES

The Environmental Review Commission

Tuesday, January 18, 2011 10 A. M., Room 544 Legislative Office Building

The Environmental Review Commission met January 18, 2011 at 10 A. M. in Room 544 of the Legislative Office Building. Co-Chair Representative Pryor Gibson presided. *(SEE ATTACHMENT: Members and Guests Present.)* The Chair noted at the outset that various other meetings taking place today would require Members to go and come during the Commission meeting. He apologized to the Presenters for these interruptions, but noted that reports being presented need to be received prior to the convening of the Session on January 25th.

Without objection on motion from Senator Hartsell the minutes of the May 25, 2010 meeting were approved.

PRESENTATIONS

Water Allocation Study

Richard Whisnant, UNC School of Government said the first report on allocation was made to the Commission two years ago to the day. *(SEE ATTACHMENT: Report to Date.)* Mr. Whisnant said he would present the first part of the report and Bill Holman, of Duke University would deliver the revised recommendations.

Mr. Whisnant said the 2005 Report of the USGS showed that water consumption was rising in North Carolina along with the increase in population, but that consumption was rising faster than population growth. With a finite supply of fresh water at hand, preliminary data developed by a doctoral candidate showed little change in the amount of water available between 1930 and 1970. However, the data from 1970 to 2000 showed that some surface water availability was decreasing, thus at a future time the increased use and shrinking supply would meet.

He said legislation passed in 2010 was being implemented by the Department of Environment and Natural Resources and was being studied by Virginia, South Carolina and Georgia for results that might help those states. Further there is a recommendation in the report that seeks to formalize the Regional River Basin Planning Organizations. Mr. Whisnant said the state was probably too big and too diverse to have a single River Basin Plan. Without legislation, he said that regional water planning groups were springing up across the state: Catawba River, Lumber River, and Jordan Lake Partnership to name a few. He said that while local interests were driving the creation of these groups, the state would need to take the initiative to assure that all basin areas do such planning.

In sum, all the regional groups were projecting future shortages. Thus far there is litigation going on in several areas regarding water needs and he predicted more efforts to bring legislative changes to the Inter Basin Transfer laws. He said that each case would be considered on individual merits, but he urged the Members to consider the large issue of general water allocation. Mr. Whisnant said outcomes for legal cases were unpredictable. He urged DENR to continue efforts to integrate water interests between quality and supply.

The difficulty, he noted was the lack of an apparent "driver" to bring about the integration of supply and quality other than the 2010 statute. He said the Commission should take note that there is ample precipitation in the state's water system, but not a lot of resilience. For North Carolina to continue to have the secure assurance of an adequate supply of usable water will take further legislative action, he said.

Representative Samuelson asked why court case decisions were unpredictable. Mr. Whisnant said that most water statutes were old dating to the 19th century and early 20th century and some case law was available, but not a lot of legislative direction for judges to use in making decisions.

Responding to a question from Senator Bingham about how widespread the shrinking water resource might be, Mr. Whisnant said he did not know of other studies in other states that might provide such information. He said the causes could be changes in forest cover, land use changes etc. The Senator asked what Mr. Whisnant considered a good job being done by regional water planning groups. He said that groups of people other than water professionals were forming: including elected officials, business people and citizens and thinking ahead about the issues.

Bill Holman, Duke University followed with the recommendations. *(SEE ATTACHMENT: Recommendations.)* He noted an earlier recommendation had been for the General Assembly to adopt goals that would guide judicial and administrative decisions. He said organizations such as the North Carolina Chamber of Commerce and North Carolina League of Municipalities and environment organizations were interested in the idea of permits for large water withdrawals. He said a consensus of the framework had not been achieved, so the recommendation was that work continues with input from various stakeholders on this issue of larger water withdrawal permits.

With the consideration of the now industry known as shale gas, wherein water is pumped into the ground and gas is extracted, the recommendation is that a moratorium on such efforts be place into effect until the hydrologic models had shown the overall effect. The shale gas process uses large amounts of water. He noted that both water and gas are needed, but there should be a protection of existing industries until the effect of this new industry is known.

Mr. Holman recommended that the Commission continue to support hydrologic models for all the State's river basins. He suggest that the Commission or legislative committees should

consult basin groups such as the Catawba-Wateree area and upper Neuse area to learn more about the problems being experienced and plans to solve those problems.

While DENR is working to coordinate quality and supply, Mr. Holman suggested that the General Assembly require such coordination in the various river basin plans.

In terms of coordinating water quality regulations and reports, he said this has been an earlier recommendation, but this may be the time to see how high a priority such an effort could be. The idea is that fewer reports would come at a certain time rather than many reports arriving piecemeal for consideration, thus allowing for a better look at the overall situation.

Another recommendation is to continue efforts to coordinate the Financial Review of water systems done by the State Treasurer with the Compliance Review done by DENR.

Concerning water efficiency, the recommendation was to look at the Water Stewardship Act from Georgia as a starting point.

There is a recommendation to begin discussions about using something other than treated drinking water for lawns and turf irrigation: the alternatives being reclaimed water highly treated waste water and storm water runoff.

Storage concerns center on examining existing dams and lakes to see what the needs are and are these sufficient for the future. North Carolina and Virginia are in concert now about the use of the water storage area of Kerr Lake. This follows a number of years of legal wrangling over transfers from the Roanoke River Basin. Georgia is also doing off stream water storage, other than reservoirs. There, when a storm happens excess water is "skimmed" off and pumped into other basins for storage.

There is a recommendation that Storm water Programs dealing with water quantity be coordinated with water quality regulations to make sure there are no barriers from the quality standpoint that might run counter to the quantity program. This would help local governments and the private sector.

A recommendation concerning reservoir sites covered the idea that the State might want authority over reservoir sites to protect these sites since it takes years to develop them. This is similar to the Department of Transportation protecting highway rights of way since it takes years to plan and complete water projects the same as with highway projects.

Responding to questions, Mr. Holman said the Georgia Water Stewardship plan was passed in 2010, thus had not had time to show effect, but would make a good plan to study.

Oil and Gas Exploration in the Triassic Basin

State Geologist, Jim Simons introduced the Assistant State Geologist, Dr. Kenneth Taylor who made the presentation. *(SEE ATTACHMENT: Shale Gas Potential: Who Knew?)*

Based on U. S. Geologic Surveys the Dan River Basin and the Deep River Basin show potential rock formations that could produce natural gas. An additional site in Bertie County has shown to have similar rock formations, but is not considered a potential site.

The Deep River Basin runs for 150 miles in North Carolina, running northeast to southwest into South Carolina. It is estimated that there is about 7000 feet of Triassic shale in the basin. There is about 59,000 acres worthy of exploring. The three things that need to be found are:

- Source rocks
- Seal to keep things in place
- Reservoirs to explore.

There is a formation called the Cumnock Formation near Sanford which has an 800 foot thick section of shale suitable for exploration. The area has produced coal since before the Revolution and into the 1920s. The coal mine explosion which occurred here 1925 was caused by natural gas. Organic chemistry data was published in 2008 which preceded study to see if there was enough organic carbon present to produce natural gas and had the carbon been "cooked" enough and long enough to produce natural gas or oil. Dr. Taylor said that answer for part of this area is "yes". Samples have been taken at two wells in the 59,000 acre area and those samples show a saleable product now.

The new technology of horizontal drilling and hydraulic fracturing has been found to work in other states for unconventional energy sources. The State geologic department has provided data to the USGS for a study to determine the upper and lower limits of this field. That report should be published in the spring.

Robin Smith, Assistant Secretary for Environment at DENR made the presentation on the regulatory side of this issue. She explained how the natural gas could be extracted. Hydraulic fracturing is a process using liquid, mostly water, pumped down into the shale formation to fracture the shale and allow the gas to be extracted. The hydraulic fluids include chemicals other than water and sometimes particulate matter to keep the hole open. The EPA asked the drilling companies to disclose the chemicals in their fluid. While some did make disclosure, others did not setting issue of proprietary rights to these formulae. She said this raises the issue of disposal of the fluids.

There is another issue: water quantity. The exact amount of water used is not known. She said one expert had predicted it would take 4 million gallons of water per well over the life of the well. The frequency of use is not known at all. She said this was a significant amount of water.

The issue of ground water contamination must be considered, too. She said this involved the liquids used to do the fracturing and that discharge, plus the possibility of leakage of natural gas into the ground water. After Pennsylvania experienced an episode of methane leaking into drinking water wells and one fracturing site which blew out discharging the drilling liquid into the air, that state has strengthened its rules concerning these operations. She said there were some recommendations for the casing of the wells: methane leakage into the well water in Pennsylvania was traced to a failure in the casing.

She said that the process could be done in a way to minimize all the various issues, but in her words it is an issue "to tread in very carefully".

There are also issues of solid waste and hazardous waste concerning storage of chemicals prior to use and the discharge of the same.

She said the statutes and rules in force now tend to be barriers to hydraulic fracturing. The laws prohibit horizontal drilling and restrict injection certain materials into groundwater. She said if this is removed, it needs to be considered very carefully.

Other issues are not as environmentally significant. She said the current license fee for a well is $50, an old figure. There will be concerns for a potential drill site as far as roads, well pads, pipelines etc.

All in all there is no existing regulatory program that would manage the impact of such a process.

Responding to a question from Representative Harrison, Ms. Smith said there were no specific recommendations at this time. She said there is a working group within DENR that is doing individual and collective research seeking to provide the Department with information on the process. She said they were looking at the experience in other states, information from industrial firms, nonprofits who have knowledge on the operations and others. She said there were plans to issue a white paper on the issue at a later time. Representative Harrison said she was particularly concerned about the ground water and asked if a groundwater inventory would be done around the proposed site. Ms. Smith said other states required the company which proposed the plan to do the area groundwater survey. Drinking water is inventoried and most of this takes place prior to granting of a permit for the drilling.

Representative Samuelson asked if the high water quantity is at the beginning or all through the operation the well. Ms. Smith said the amount varied with the drilling process since drilling at one site could send fractures in several directions.

Senator Bingham asked about royalties paid in other states. Mr. Taylor responded saying that of the 45 states that collected oil/gas royalties, North Carolina ranked seventh from the bottom. Kansas was the highest at 17%.

In discussion of state's old law prohibiting horizontal drilling, Mr. Taylors said that was to keep someone from stealing the resource from an adjacent land owner.

Before the next presentation, Chair Gibson aid the National Conference of State Legislatures was presenting a webinar on the issue of fracking and we would provide members with the website.

Issues & Concerns of DENR
Water Quality

Tom Reeder, Director of the Division of Water Resources, outlined his presentation to cover the Supreme Court Decision in a lawsuit with South Carolina, Implementation of Session 2010- 143 dealing with river basin modeling and replenishment of aquifers. *(SEE ATTACHMENT: Water Quality.)*

The suit brought by South Carolina to protest the use of the water in the Catawba River. The action protested the Concord-Kannapolis Inter Basin Transfer agreement from the Environmental Management Commission. The suit was dismissed by the Supreme Court in December, 2010 and settled. Mr. Reeder noted the various legislative members who had worked on the Catawba-Wateree Bi-State Commission: Senators Allran and Clodfelter and Representatives Alexander and Gillispie. He had particular praise for Senator Clodfelter, saying that he worked with the South Carolina counterparts and saved the state of North Carolina millions of dollars in attorney fees and staff hours.

Mr. Reeder said the settlement did not require North Carolina to do anything that the state was not doing already. The settlement requires:

- Abide by the comprehensive re-licensing agreement of Duke Energy's license for the Catawba River
- Abide by existing statutes on any future inter-basin transfers on the Catawba River. South Carolina actually must adopt the same statutes to abide by the settlement
- Evaluate water supply needs for Catawba-Wateree every 10 years—already in our statutes.

Efforts are continuing on implementation of the Hydrologic Modeling for all 17 river basins. He said the requirement for ecological flow data was not yet in place, but in progress. An Ecological Flow Management Board has been established. And the models will be approved by the Environmental Management Commission. This is the first time for the EMC to approve models as such, so a technical advisory board from the EMC is working with staff to guide the creation of the models. The first model should be approved in the fall of 2011, either for the Tar or Broad river basin.

Mr. Reeder said that there was progress being made in the recovery of the aquifers in the central coastal plain. Progress is due in large part to several users switch over to surface water

use. The users are following the capacity use rules in making the changes. In addition the aquifers in Gates, Hertford and Northampton Counties were recovering following the closing of the International Paper Company plant in Franklin County, Virginia.

Interbasin Transfers are already approved for Charlotte-Mecklenburg, Concord-Kannapolis, Randleman, Jordan Lake and Greenville Utility. The idea of a transfer from Kerr Lake is causing concerns in Virginia. Mr. Reeder said the NeuseWASA in Kinston may seek a transfer approval. That utility switched from groundwater to surface water and built a state of the art water treatment plant and incurred $150 million in debt. Now the utility cannot sell all the water they need to pay down the debt because of the Interbasin Transfer statute.

Concerning the Kerr Lake situation, Mr. Reeder said discussions continue on dividing the unallocated water in the Lake. There is about 50 million gallons per day to be allocated. Other issues to be considered during 2011 include the Little River Reservoir for Raleigh and allocations of water in Jordan Lake.

Water Quality

Colleen Sullins, Director of the Water Quality Division said the structure for water quality was built into the statutes involving the standards and classifications for best use. These standards and classifications are also part of the Clean Water Act.

She said there were several change requests being considered, including one for Hendersonville, another involving the Dan River in the Roxboro/Person County area with impact from Virginia and reclassification of Boylston Creek in Transylvania County as a trout stream. Meetings were held locally about the reclassification efforts for Boylston Creek.

Federal law requires the updating on best use standards every three years and is an ongoing process. Ms. Sullins said the legislators might expect to hear about the updating of metal standards. The EPA approved metal standards ten years ago, but North Carolina has not implemented the update. She said the new standards were more stringent and will cost more for communities to implement.

Requirements by EPA for states to adopt nutrient criteria implementation is causing concern nationally and in various states. The criteria would have the states set nitrogen and phosphorous level standards. Recently the EPA had the standards put in place in Florida, because the state did not seem to be moving quickly enough. North Carolina will hold a forum to discuss nutrient levels management.

The Environmental Management Commission has approved a management strategy for Falls Lake based on the proposal from the Division of Water Quality. Implementation allows for modification in the future is this is needed.

Ms. Sullins said there could be interest raised for legislators concerning nutrients in the High Rock Lake system.

The Division issues various permits and one that has sparked interest involves the Western Wake County Waste Water Treatment facility and the discharge permit. This is also connected to an Interbasin Transfer issue for Jordan Lake.

The Environmental Management Commission has updated rules for pre-treatment which affects treatment facilities which have large amounts of industrial waste coming into its system. The changes streamlined the process of the pre-treatment requirements.

Non-discharge permits also come under the Division. These are animal wastes, spray irrigation and the like. A proposed poultry processing plant by Sanderson Foods would come under the Divisions jurisdiction for permits.

On the issue of reclaimed water rules, there has been an objection by members of the container nursery community which may be an issue for the General Assembly.

The Division will be working with communities to implement new federal regulations on storm water. The new rules have moved from a best management practices standard to a limitation position.

In monitoring the Division is working to make sure goals are being met. The Division meets with the Division of Air Quality when it comes to mercury discharges and mercury in fish tissue. Management strategies are also monitored for such facilities as Falls Lake and Jordan Lake.

In the discussion, Ms. Sullins answered a question from Representative Samuelson saying a storm water limitation approach was like a speed limit; reducing the amount of flow. Concerning ecological flow, Ms. Sullins said the state has been measuring the quality of water needed to sustain aquatic life, but now there is need to measure the amount of water needed for such life. Regarding level of metals in water supplies, she said the EPA has learned the level of metals in the water relative to damaging aquatic life, but those standards had to be adapted to the type of water in a given area of a state.

Senator Hartsell asked about the rejection of a water quality permit concerning the Yadkin River and Badin Lake. (He said some members of the Commission were thankful for that decision.) Ms. Sullins did revoke a 401 permit that had been issued for Alcoa and Badin Lake and the dams on the Yadkin River. She said the matter was in litigation which limited what she could say. She did say the revocation was based on the hearing when testimony showed that Alcoa had withheld information that was material to granting the original permit. Alcoa has until the first of February to appeal the revocation. Meanwhile, litigation on the original action to grant the permit has been stayed pending action on the revocation matter.

Chair Gibson suggested that further discussion on the issue be delayed. Senator Hartsell said he would defer additional questions that he might have and asked that material submitted to the Senate Judiciary II Committee be included in the ERC files along with a recent letter on the subject. He said he wanted this as part of the record concerning action on the permit. The Co-Chairs agreed to that request.

Representative Harrison asked about standards for a chemical known as PFOA manufactured in North Carolina by Du Pont. Ms. Sullins said there was work being done concerning standards for the chemical, but did not have specifics at this time.

Ms. Sullins said the effect of coal ash on groundwater was being reviewed as part of the renewal of permits for groundwater.

Waste Management

Dexter Matthews, Director of the Waste Management Division began with a law suit that challenged provisions of SB1492 which was passed in 2007. That law required buffers around solid waste landfills and the size of these facilities. The suit challenged on constitutional grounds the provisions were a pretext for banning interstate commerce. The allegation was that these were provisions which proposed to ban the receiving of out of state waste. Following a summary judgment in Wake County upholding the state's position and dismissing the suit entirely, Waste Industries has appealed to the Court of Appeals which should render a decision this fall. The losing side can still seek a review of the case in the North Carolina Supreme Court. And since the suit addresses some issues never covered in federal law, the matter could go to the U. S. Supreme Court.

Concerning the issue of coal ash, the EPA issued new rules for coal combustion residuals after the failure of an impoundment in Tennessee. Because of the types of containment of the residuals, the Division of Waste Management, Division of Water Quality and the Division of Land Resources are severally involved in this issue. The three Divisions reviewed the EPA rules and submitted comments to the federal agency. The Division considers the EPA rules unsatisfactory, therefore the Division seeks to have EPA treat coal combustion residuals as solid waste and provide states with financial incentives to regulate them as solid waste to recognize state permitting requirements for the substances.

Mr. Matthews provided the Commission with an extensive review of efforts to deal with the effects of perchloroleythelene used in dry cleaning processes. The chemical has been found in groundwater and soil samples near dry cleaning operations and inside the buildings of these plants. Testing for EPA accepted levels was done in dry cleaning plants, drop-off points, building adjacent to such plants and buildings that had been used in dry cleaning, but no longer used that way. The Department of Labor puts the regulation for these plants under the

Occupational Safety and Health Administration. OSHA limits for possible contamination are higher than those of EPA. An issue-oriented working group of various stakeholders has been formed and Mr. Matthews said a report should be complete by the end of 2011.

In discussion, Senator Hartsell was advised that 9 sites had been closed during the implementation of dry cleaning site cleanup and 16 more were in the final process. The report is on the ERC website.

Senator Hartsell asked about any update on a 2001 report on the Badin smelter which showed hotspots for cyanide, arsenic and PCBs. At that time Alcoa said that none of these hotspots needed to be remediated. Owing to the continuing litigation, Chair Gibson suggested that the Department should address that issue, rather than seeking information from any one Division. Mr. Matthews did say that the Division was working with the EPA on PCB cleanup, but that DENR had not done any additional testing of its own.

Representative Harrison asked if the Division felt confident that toxins contained in recycled coal ash remained inert. Mr. Matthews said that the technical standards for hazardous and solid waste are similar and should be effective.

Members will be furnished a staff report on the conditions concerning the contamination of water wells at Camp Lejeune.

Air Quality

Sheila Holman, Director the Air Quality Division appeared before the Commission for the first time after she succeeded Keith Overcash, who retired after 37 years of state service. *(SEE ATTACHMENT: Air Quality.)*

She said that air quality in North Carolina continues to improve. This she attributed to both state and federal efforts. She said ozone levels were declining and the fine particle levels (PM 2.5) were lower due in large part to the North Carolina Smoke Stack law.

EPA was due to deal with changes in ozone standards in 2010, due to a difference in the recommendations of a science panel chosen to recommend the level and the final EPA standards which were higher than those recommended. EPA asked for extension to revisit the panel's recommendations and after several delays should report the new ozone standards by July 2011. Depending on the standard set North Carolina could find all its air quality monitors out of compliance since the new standards are expected to require lower levels.

Of the five sulfur dioxide monitors in the state, the monitor in New Hanover County is in violation of the latest EPA standards. The Air Quality Division is working to learn the reason for

this and the Division has asked 22 area companies to supply models of their individual monitoring standards in seeking the answer.

Following a court decision in 2007 which vacated boiler air quality rules, EPA is developing new rules which could affect about 250 North Carolina sites. These are not utility company boilers. Requirements to learn how the standards are set in the first place are one question to be resolved. The new rules should be put forth in 18 months. Currently one provision covers the event of the EPA failure in regulating these boilers, and after a court case and advice from the Attorney General's office, the state is proceeding with its permitting process and has completed about 80% of the applications.

The proposed Titan Cement plant in New Hanover County ran into a court suit contesting if environmental rules were counter to state offered incentives. A court ruling said environmental rules did apply. DENR was enjoined from any permitting action. Titan then sought and received separation from state incentives and a December court ruling dissolved the injunction filed by DENR. Titan is preparing an updated permit application which will need to comply with some new standards in place since the original application in 2008.

Currently Green House Gas permitting is under legislative review. North Carolina's rule which tailor the permits to the state's situation was approved by the Environmental Management Commission and the Rules Review panel. The proposal would raise state thresholds and the Commission and Rules approved brought some 19 letters of objection.

North Carolina is in litigation over the declaration of 4 TVA plants as being a nuisance for North Carolina citizens. The Federal 4th Circuit ruled that the Clean Air Act trumped the consideration of the plants as a nuisance for citizens. The N. C. Attorney General's office has been denied a re-hearing, but granted an extension to file the issue with the U. S. Supreme Court. That filing is under consideration at this time.

Responding to a question posed by Senator Bingham, Ms. Holman said air quality standards being applied in North Carolina are the same as the rest of the country and would not put the state in a class of having more stringent rules.

ENVIRONMENTAL FUNDING

Claire Hester, Fiscal Analyst provided the Commission with the financial picture. *(SEE ATTACHMENT: Environmental Funding.)* The review provided information on the various programs including the trust funds involved in the financial mix. After a dip in funding the appropriations had begun to climb until the last three fiscal years. Special funds showed cash

balance of $670 million in 2009. Transfers from these cash balances have been used to help balance the budget. Ms. Hester said $170 million transferred out in FY 2008-09.

Over recent years some programs have either been eliminated or consolidated in efforts to achieve budget restrictions. Additionally certain vacant positions were eliminated as budgetary matters.

The various environmental trust funds have seen reductions either from direct cuts vis a vis previous funding. The Clean Water Trust Fund had been funded at $100 million in recent years, but was cut to the $50 million in the current budget. The National Heritage Trust Fund and the Parks and Recreation Trust Fund have seen a decline in funds. Both receive money from the deed stamp tax, but allocations from that tax have been reduced over recent years. Special license plate fees going to these funds are declining or showing no increase.

The Governor ordered Cabinet Departments to withhold 3.5% of funds. The targets meant a reduction in grants and program reductions. Cabinet Secretaries had flexibility where to make cuts. Divisions in DENR with cuts over a $1 million include:

Aquariums

Environmental health

Forest Resources

Marine Fisheries

Water Quality

State Zoo

Parks and Recreation

Non-profits

Changers made included closing two State Parks, reduction in hours for other State parks and contracting the operation of the gift shop at the State Zoo. Other programs such as the Well Drillers Program, Oyster Sanctuary and an Animal Waste System pilot were eliminated.

As requested by the Governor the Agencies provided the Office of State Budget and Management with scenarios for 5%, 10% and 15% reductions. Those scenarios would mean between $10 million and $30 million reduction for DENR.

During questions from members of the Commission it was noted that the various reports from all the Divisions were available on line with executive summaries as a guide for more specific interests. Ms. McGinnis said there were no specific reports which might indicate a particular "surprise" for the Members to consider.

Before adjournment, Senator Bingham added his praise and thanks to Senator Clodfelter for work on the Catawba-Wateree issue. After this, Senator Hartsell joked that perhaps Senator Clodfelter could lend his efforts to issues on the Yadkin River.

The meeting was adjourned by Representative Gibson at 12:34 p.m.

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Representative Pryor Gibson, Co-Chair Minutes by Ted Harrison

January 18, 2011

ATTENDANCE

Environmental Review Commission

2010-2011 Interim

MASTER

DATES **MEMBERSHIP**	1/18/1															
Senator Dan Clodfelter, Co-Chairman	✓															
Senator Bob Atwater, Co-Chairman	✓															
Representative Pryor Gibson, III, Co-Chairman	✓															
Representative Pricey Harrison, Co-Chairman	✓															
Senator Stan Bingham	✓															
Senator Eleanor Kinnaird																
Senator Floyd McKissick	✓															
Senator Fletcher Hartsell, advisory member	✓															
Representative Pricey Harrison	✓															
Representative Carolyn Justice																
Representative Ruth Samuelson	✓															
Representative Edith Warren	✓															
Representative Larry Womble																
Representative Johnathan L. Rhyne, Advisory Member																
STAFF																
Jeffery Hudson, Counsel																
Jennifer McGinnis, Counsel																

Jennifer Mundt, Commission Analyst																
Mariah Matheson, Research Assistant																
Jessica Proctor, Committee Assistant																
Susan Iddings, Commission Counsel																

NORTH CAROLINA GENERAL ASSEMBLY

Environmental Review Commission

VISITOR REGISTRATION SHEET

January 18, 2011
Room 544

NAME	FIRM OR AGENCY AND ADDRESS
Lucius W. Pullen	NC Mining Association
Elizabeth Bisso	Brooks Pierce
Doug Heron	Williams Mullen
Heather Barrett	Williams Mullen
Chris Anderson	
Bill Schrum	Republic Services
Phil Carter	Waste Industries
Mike Taylor	Parker Poe
Ed Buchan	City of Raleigh - Public Utilities
Edgar Miller	CTNC
Gordon McKillop	NC Conservation Network

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NAME	FIRM OR AGENCY AND ADDRESS
David Steele	NC Conservation Network
Vardry Austin	NCDENR - Water Resources Archdale Bldg.
LINWOOD PEELE	NCDENR - DWR
PAIGE WORSHAM	UNC School of Government
BRIAN BULLA	NCSU
RUSTY NORRIS	ELM Site Solutions
Paul Sherman	NCFB
Mitch Peele	"
Bob Stevens	NCFA
Amy McConkey	NC Beverage Assn
Sharon Miller	CUCA

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NAME	FIRM OR AGENCY AND ADDRESS
John Evans	DAQ
Donald van der Vaart	DAQ
Allison Fowler	NC Grange
Ken Melton	K. M. A.
Matthew Eisley	Smith Anderson
Doug Lassiter	NCSTA
Brian Powell	EGCSA
Daniel Baum	Troutman Sanders
Doug Howey	NCPCWA
John Goodman	NC Chamber
Preston Howard	MCIC

NORTH CAROLINA GENERAL ASSEMBLY

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Room 544

NAME	FIRM OR AGENCY AND ADDRESS
Joyce Peters	JPPS500.
Tom Cors	TNC

NORTH CAROLINA GENERAL ASSEMBLY

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NAME	FIRM OR AGENCY AND ADDRESS
KENNETH TAYLOR	NCDENR - DIV OF LAND RES - N.C. Geological Survey
Jeffrey C. Reid	NCDENR - DIV. of LAND RESOURCES N.C. Geological SURVEY
Tom Slusser	DENR- DWQ
Evan Kane	DENR - DWQ
Glenn H. Sullins	DENR - DAQ
Pat Harris	DENR - DSWC
David Williams	DENR-DSWC
Diana Kees	DENR
Sheila Holman	DENR- DAQ
Sushma Masemore	DENR- DAQ
Steven Levitas	Kilpatrick Townsend

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NAME	FIRM OR AGENCY AND ADDRESS
Steve Wall	Biofuels Center of NC
Dianne Reid	DWQ
Linda Culpepper	NC DENR DWQ
Rick Bolich	NCDENR DWQ
Debra Watts.	NCDENR / DWQ.
Will Morgan	NC Sierra Club
Elizabeth Ouzts	Environment North Carolina
Jack Lyman	Environment North Carolina
John Monaghan	Piedmont Natural Gas
Don Ramey	NCDENR-DWR
Jim Simon	DENR- DLR

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NAME	FIRM OR AGENCY AND ADDRESS
David Kelly	Environmental Defense Fund
Tom Beason	EDF, NCSEA, NCWF
T REFDER	NC DWR
R Whisnant	UNC SOG
[illegible]	Duke U / NCSU Init
Mitch Kokai	John Locke Foundation
Tom VITAGLIONE	CFTF
Jimmy Carter	Solutions-IES
Kari Barsness	Governor's Office

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NAME	FIRM OR AGENCY AND ADDRESS
Dexter Matthews	Div. of Waste Management DENR
BRUCE THOMPSON	PARKER POE
David Knight	NC DENR

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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SENATOR DANIEL G. CLODFELTER

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COMMISSION ASSISTANT

JESSICA K. PROCTOR
COMMISSION CLERK

January 10, 2011

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jennifer L. McGinnis, Commission Counsel
Jessica K. Proctor, Commission Clerk

RE: Notice of Meeting and Proposed Agenda

The Environmental Review Commission will meet at 10:00 a.m. on Tuesday, January 18, 2011, in Room 544 of the Legislative Office Building, Raleigh, North Carolina.

The agenda for the meeting is expected to include approval of minutes from past meetings; a presentation on the final report issued in conjunction with the Water Allocation Study (S.L. 2007-518); a report on the issue of oil and gas exploration in the Triassic Basin (S.L. 2010-152, Sec.6.4); and overviews from the Divisions of Water Quality, Water Resources, Waste Management, and Air Quality of the Department of Environment and Natural Resources on recent activities and issues of concern with respect to each division. The 2010 Report of the Water Allocation Study of the Environmental Review Commission may be found at:
http://www.ncleg.net/documentsites/committees/ERC/Water%20Allocation%20Study/Reports/2010-Dec%20WAS%20Final%20report%20v2%200.pdf

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jennifer McGinnis, Commission Counsel, at (919) 733-2578, or Jessica Proctor, Commission Clerk, at (919) 715-3001.

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
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SENATOR DANIEL G. CLODFELTER

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JESSICA K. PROCTOR
COMMISSION CLERK

AGENDA

10:00 a.m. Tuesday, January 18, 2011
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Pryor A. Gibson, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator Robert C. Atwater
   Senator Daniel G. Clodfelter
   Representative Pryor A. Gibson
   Representative Pricey Harrison

3. Report to the Commission and explanation of agenda items *(5 minutes)*
   Jennifer McGinnis, Commission Counsel

   Approval of the minutes for the May 11, 2010 meeting of the Commission

4. Presentation of the Final Report of the continuing Water Allocation Study (S.L. 2007-518, Sec. 1.(a), as amended by S.L. 2008-10) and issues related to increasing water supply and reservoir construction (S.L. 2008-143, Sec. 6) *(30 minutes)*

   Richard B. Whisnant, Principal Investigator
   Associate Professor of Public Law and Government
   University of North Carolina at Chapel Hill - School of Government

   William E. Holman, Principal Investigator
   Director of State Policy
   Nicholas Institute for Environmental Policy Solutions
   Duke University

5. Presentation on the study of oil and gas exploration in the Triassic Basin (S.L. 2010-152, Sec. 6.4) *(45 minutes)*

   Jim D. Simons, Director and State Geologist
   Division of Land Resources
   Department of Environment and Natural Resources (DENR)

   Robin W. Smith, Assistant Secretary for Environment, DENR

6. Report on recent activities and issues of concern with respect to certain divisions of DENR

   a) Division of Water Resources *(20 minutes)*
      Thomas A. Reeder, Director

   b) Division of Water Quality *(20 minutes)*
      Colleen H. Sullins, Director

   c) Division of Waste Management *(20 minutes)*
      Dexter R. Matthews, Director

   d) Division of Air Quality *(20 minutes)*
      Sheila C. Holman, Director

7. Presentation on environmental funding in North Carolina *(30 minutes)*
   Claire Hester, Fiscal Analyst
   Fiscal Research Division

8. Commission discussion and announcements

9. Adjourn

FUTURE MEETINGS:

The Commission may meet while the General Assembly is in session (G.S. 120-70.44). When the Commission meets while the General Assembly is in session, notice will be given at a session of the Senate and House of Representatives as provided by G.S. 143-318.12(b) and will be distributed by email to the email notice distribution list, if possible. The Commission will resume a schedule of regular monthly meetings following adjournment of the 2011 Session of the General Assembly.

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jennifer McGinnis, Commission Counsel, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

General Assembly of North Carolina

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JESSICA K. PROCTOR
COMMISSION CLERK

January 4, 2011

The Environmental Review Commission will meet at 10:00 a.m. on Tuesday, January 18, 2011, in Room 544 of the Legislative Office Building, Raleigh, North Carolina.

The agenda for the meeting is still under development. Further details will be included in a subsequent notice.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jennifer McGinnis, Commission Counsel, at (919) 733-2578, or Jessica Proctor, Commission Clerk, at (919) 715-3001.

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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MARIAH B. MATHESON
COMMISSION ASSISTANT

JESSICA K. PROCTOR
COMMISSION CLERK

January 18, 2011

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on May 11, 2010:

A. The following report has been submitted by the Principal Investigators of the Water Allocation Resources Study and is being distributed in connection with today's agenda as follows:

Final report on the allocation of surface water resources and their availability and maintenance in the State and issues related to increasing water supply and reservoir construction to the 2010 Regular Session. December 1, 2010. Authority: S.L. 2007-518, Sec. 1.(a) as amended by S.L. 2008-10 and S.L. 2008-143, Sec. 6. ***Agenda Item #4***

B. The following reports have been submitted and may be distributed in conjunction with a presentation at a future meeting of the Commission. These reports are available electronically at the Commission's website: (http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC%20Reports%20Received). If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or mariahm@ncleg.net for assistance.

1) Department of Agriculture

a. Report on the 2009 Agricultural Water Use Survey. July 1, 2010. Statutory Authority: G.S. 106-24(b).

2) Environmental Management Commission

a. Annual report on the implementation of stormwater rules and programs. October 1, 2010. Statutory Authority: G.S. 143-214.7(e).

b. Quarterly reports by the EMC as to its operations, activities, programs, and progress during the previous quarters. July 15, 2010 and October 15, 2010. Statutory Authority: G.S. 143B-282(b).

3) State Water Infrastructure Commission

a. Annual report by the State Water Infrastructure Commission on its activities and findings. November 1, 2010. Statutory Authority: G.S. 159G-67.

b. Report on guidelines for water rate structures adequate to pay the cost of maintaining, repairing, and operating the system and consider the effect of water rates on water conservation and recommend rate structures that support water conservation. November 1, 2010. Authority: S.L. 2008-143, Sec. 17.

4) Utilities Commission

b. Annual report on the implementation of the North Carolina Renewable Energy and Energy Efficiency Portfolio Standards and subsequent proceedings. October 1, 2010. Statutory Authority: G.S. 62-133.8(j)).

c. Annual report on the Implementation of the "Clean Smokestacks Act." June 1, 2010. Authority: S.L. 2002-4, Sec. 14.

5) Coastal Resources Commission, Coastal Resources Advisory Council, and the Department of Environment and Natural Resources

a. Report on the feasibility and advisability of the use of a terminal groin as an erosion control device. April 1, 2010. Authority: Session Law 2009-479.

6) Department of Environment and Natural Resources

a. Annual report on the cost of implementing the Mining Act of 1971. September 1, 2010. Statutory Authority: G.S. 74-54.1(c).

b. Annual report on three river basin advisory commissions (Catawba/Wateree River Basin Advisory Commission, the Roanoke River Basin Advisory Commission, and the Yadkin/Pee Dee River Basin Advisory Commission). October 1, 2010. Statutory Authority: G.S. 77-117.

c. Annual report on the Parks and Recreation Trust Fund, Fiscal Year 2009-2010. October 1, 2010. Statutory Authority: G.S. 113-44.15(c).

d. Annual report on acquisitions made from the Natural Heritage Trust Fund. October 1, 2010. Statutory Authority: G.S. 113-77.9(e), as amended by S.L. 2009-484, Sec. 14.

e. Annual report on implementation of the Sedimentation Pollution Control Act of 1973. October 1, 2010. Statutory Authority: G.S. 113A-67.

f. Annual report on the Conservation Easement Program. October 1, 2010. Statutory Authority: G.S. 113A-235(c).

g. Annual report on progress towards attaining the State's goal of protecting one million acres of farmland, open space, and conservation lands. October 1, 2010. Statutory Authority: G.S. 113A-241(c).

h. Annual report on implementation of the Resident Inspectors Program at commercial hazardous waste facilities. October 1, 2010. Statutory Authority: G.S. 130A-295.02(m).

i. Annual report on the Inactive Hazardous Sites Program. October 1, 2010. Statutory Authority: G.S. 130A-310.10.

j. Annual report on the Mercury Minimization Plan. October 1, 2010. Statutory Authority: G.S. 130A-310.57, Sec. 7.

k. Annual report on Basinwide Water Quality Management Plans. October 1, 2010. Statutory Authority: G.S. 143-215.8B(d).

l. Annual report on the compliance/enforcement of water quality laws for facilities that discharge into surface waters. October 1, 2010. Statutory Authority: G.S. 143-215.9A.

m. Annual report on permitting and inspecting animal waste management systems/Animal Waste Compliance Report. October 1, 2010. Statutory Authority: G.S. 143-215.10M.

n. Annual report on the status of leaking petroleum underground storage tanks, the State cleanup fund, and the Groundwater Protection Loan Fund. September 1, 2010. Statutory Authority: G.S. 143-215.94M, as amended by S.L. 2002-148, Sec. 7.

o. Annual report on the Dry-Cleaning Solvent Cleanup Act of 1997. October 1, 2010. Statutory Authority: G.S. 143-215.104U.

p. Annual (draft) report on the progress in developing and implementing the Coastal Habitat Protection Plan. September 1, 2010. Statutory Authority: G.S. 143B-279.8(e).

q. Annual report and recommendations on the One-Stop Permit Assistance Program and the express permit and certification review program. March 2009 and 2010. Statutory Authority: G.S. 143B-279.12(e) and G.S. 143B-279.13(c).

r. Annual report by the Drought Management Advisory Council. October 1, 2010. Statutory Authority: G.S. 143-355.1(g).

s. Annual report on the progress of water supply planning. September 1, 2010. Statutory Authority: G.S. 143-355(n).

t. Report of Superfund cost share fund expenditures for cleanup of sites on the National Priorities List. Within 30 days of expenditure. Authority: S.L. 1999-237, Sec. 15.6.(b).

u. Annual report on the Wastewater Discharge Elimination Program. October 15, 2010. Authority: S.L. 2001-452, Sec. 2.9.

v. Annual report on the impacts on water quality and other environmental impacts from the new urban waterfront area development authorized by S.L. 2004-117, Sec. 4 and evaluate the costs and benefits from the development to the area in which the development is located. October 1, 2010. Authority: S.L. 2004-117, Sec. 4.

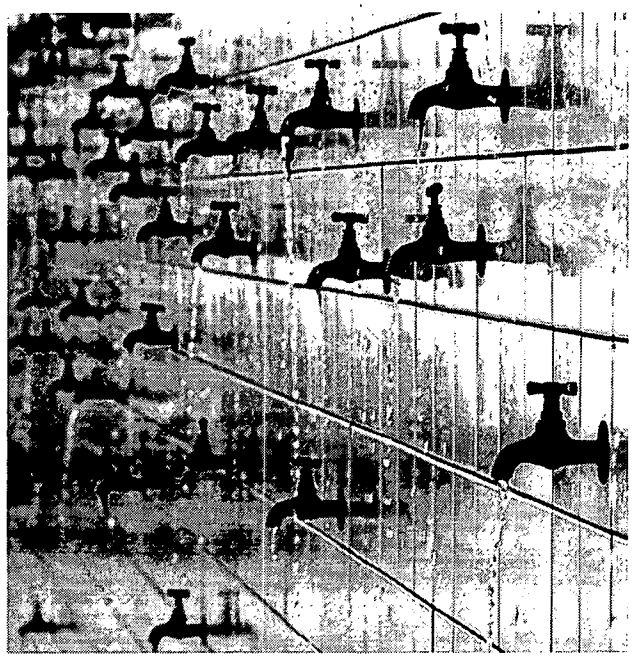
w. Annual report on animal waste management performance standards for swine farms, the Lagoon Conversion Program, and the Swine Farm Waste Management System Conversion Account. October 1, 2010. Authority: S.L. 2007-523, Sec.2(f).

x. Interim report on the desirability and the feasibility of merging the Division of Public Health and the Division of Environmental Health. January 15, 2011. Authority: S.L. 2010-31, Sec. 13.2.

y. Report on funding issues associated with the Zoological Park, current organizational structure and reorganization as an authority, as a private nonprofit corporation. December 31, 2010. Authority: S.L. 2009-329, Sec. 5.11, as amended by S.L. 2010-152, Part XXI.

2010 Report of the Water Allocation Study of the Environmental Review Commission

Final Report to the Environmental Review Commission of the North Carolina General Assembly



By the Principal Investigators

Richard Whisnant
Professor of Public Law and Government
School of Government
UNC-Chapel Hill

Bill Holman
Director of State Policy
Nicholas Institute for Environmental Policy
Duke University

Richard Whisnant

December 1, 2010

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I. Summary

The Water Allocation Study of the General Assembly's Environmental Review Commission began in 2007 in response to the need for a fundamental review of state and regional water allocation law and policy. The study was triggered by severe conflict over a proposed interbasin transfer of water, and its importance was heightened by historic droughts in 2002-2004 and 2006-2007. The research team that carried out the study submitted a comprehensive series of findings and recommendations in 2008-2009. This report summarizes further work in 2009 and 2010, at the request of the General Assembly, that focused on several aspects of the original recommendations.

As of this report, many aspects of the water allocation challenges facing North Carolina remain unaddressed. The high growth areas of the state cannot sustain economic growth for the next forty years without much more active and robust state and regional means of managing water demand, sharing water resources and increasing water storage.

On the central topics of this report, however, which are the possibilities for regional water resource planning and the incorporation of ecological flows into hydrologic models, there is significant and promising work underway. Groups of water systems (and in some cases, other stakeholders) are charting regional approaches to water security in the Greenville region, the Lumber River basin, the Triangle, the Catawba River basin, the French Broad basin, and perhaps others. DENR has assembled a Science Advisory Board to develop a way to integrate ecological flow requirements into hydrologic models. And legislative action in 2010 directing how those models should be created and used can be expected to help with the critical first step in improving North Carolina's water allocation policy: understanding where and when the "water budget" is likely to be out of balance. Also, largely as a result of the droughts in the past decade and increased recognition of the need for water systems to have sustainable finances, the price of treated water has risen in the state. Over the long term, maintaining the price of finished water at something like its actual cost to extract, treat and distribute will be essential to the efficiency improvements that certain areas of North Carolina inevitably must make.

So there is hope and there has been progress on the water allocation front. But the authors of the Water Allocation Study predicted that conflict over increasingly scarce water in the state and the region will rise in coming years and decades, and that rise has already begun. It will be felt by the legislature as increased local requests for relief from the interbasin transfer law. Much work remains for policymakers to sort out better ways to prevent and manage this conflict.

Water supply can be one of North Carolina's real strengths and comparative advantages globally, both for economic development and quality of life in a more general sense. But this will not happen automatically, or by the historical, default approach the state takes to water allocation—letting each water system and water user figure out how to secure their water supply on their own, and leaving any conflicts that emerge largely up the courts to sort out.

II. Review of 2008 Study Conclusions and Recommendations

A. Review of the need for reform

The principal investigators see the main factors driving water availability and the need for water law reform in North Carolina as:

- ample average annual precipitation;
- in the last two years, demand drops from economic slowdown, loss of industry, ongoing conservation from 2007-2008 drought, and greater efficiency due to increases in price of water;
- few easy ways to significantly increase storage;
- a history of highly-decentralized decision making and responsibility for water resources (largely at the local jurisdiction level), with water sometimes used as a competitive weapon between jurisdictions, making regional cooperation even more difficult;
- a reluctance of local political leaders to acknowledge and publicize their water problems, due to short term thinking and fears of economic development stigmatization;
- in the longer term, significant demand increases, particularly in low-yield, high growth headwaters areas, including the Research Triangle and Charlotte metropolitan regions;
- less availability in streams and in highly-tapped groundwater aquifers;
- the likelihood of fewer, more intense storms with longer periods of low precipitation;
- an annual late-summer confluence of peak demands from cities (mainly lawn irrigators), power plants (air conditioning) and agricultural irrigators at the same time as rivers are at low flows.

The result is inevitably more conflict over water. There will be continued confusion over the law with resulting legal surprises for water providers and users. There is a strong trend to loss of state control as federalization continues, with decisions by the U.S. Army Corps of Engineers and the Federal Energy Regulatory Commission increasingly driving state water allocation decisions. Globally and across the United States there will be more pronounced shortages, with water coming to be understood as a major factor in economic development. Regions within and between states will compete over their quality and quantity of water and its management. North Carolina and its neighboring states in the southeast are naturally well-endowed, but culturally and legally they are poorly positioned to win in this competition.

1. Water availability

North Carolina receives average annual precipitation of 40-50 inches, which averages to 115 billion gallons per day. The rainfall recharges aquifers, infiltrates to groundwater, runs off the surface of the land and becomes stream flow. A large portion of the rainfall evaporates. But these numbers only partially describe North Carolina's water budget. Precipitation is seasonal—the state does not receive 115 billion gallons every day. Climate fluctuations lead to both drought and flood events. The State's population is located in areas that have limited surface water and ground water supplies. In times of drought, the urban centers have low resilience and limited ability to increase storage. Agricultural, municipal, and utility use all peak at the same time—the same time of year that drought conditions are likely. As the state grows, the demand for consistent, sustainable water supply increases.

These are the reasons that a year or two with below average precipitation can send North Carolina into severe drought—even though the amount of rain received in that period will exceed the average annual rainfall of most of the western United States. This happened in 2007. It will happen more frequently in the future, putting great stress on our water institutions and political leaders.

North Carolina's water allocation policies, derived primarily from legal disputes, are premised on ample water supply. The only legal limit on using water, outside of the capacity use area, is the requirement to "be reasonable." As demand grows for water resources and risk of water shortages increases, the importance of improved water allocation policies will grow.

Furthermore, the more time that passes with North Carolina's current, largely unregulated major water withdrawals, the more withdrawers there will be and the higher the amount that existing withdrawers will expect to have "protected" when the State decides it needs to regulate more carefully. This ever-ratcheting-up in demand expectations will make meaningful regulation harder with each passing year.

The droughts of 2000–2002 and 2007–2008 helped focus North Carolina on the importance of an assured water supply. The state's economy and environment depend completely on adequate fresh water. When the water supply is short, conflict can rise quickly to terrible levels, because people will do whatever it takes to get water.

The projected population increase in the next decades makes it very likely there will be more water shortages, and thus more conflict. Moreover, ongoing research shows that the long-term trend in many of the state's (and region's) streams is to less water than was historically available. See Figs 1 and 2.

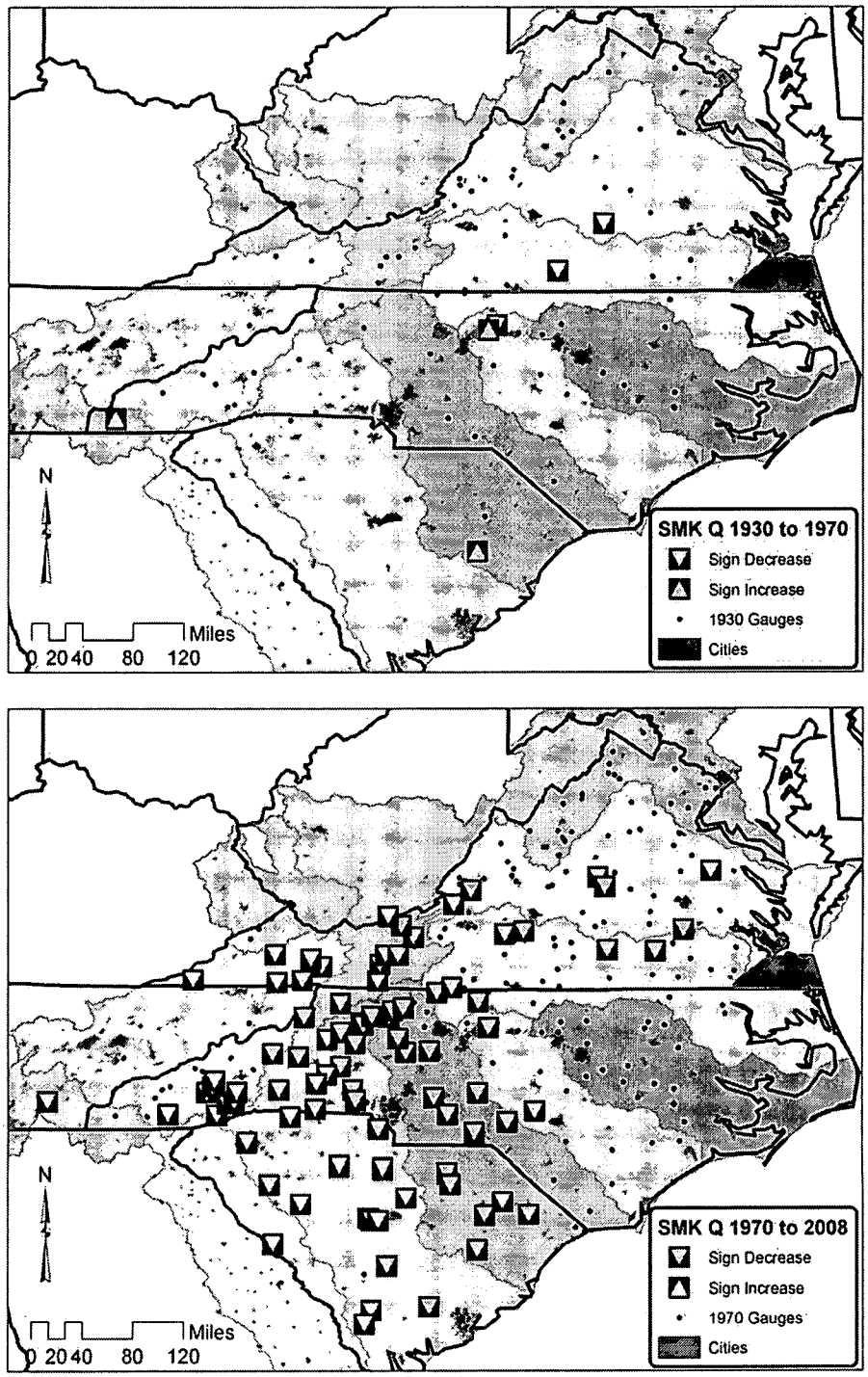


Figure 1 Changes in regional streamflow, 1930-1970 and 1970-2008. Seasonal Mann Kendall statistic; statistically significant (inflated P<0.05 - more conservative) gauges have a direction, otherwise gauges are represented as a dot. Patterson, Lauren (UNC-CH, ongoing 2010).

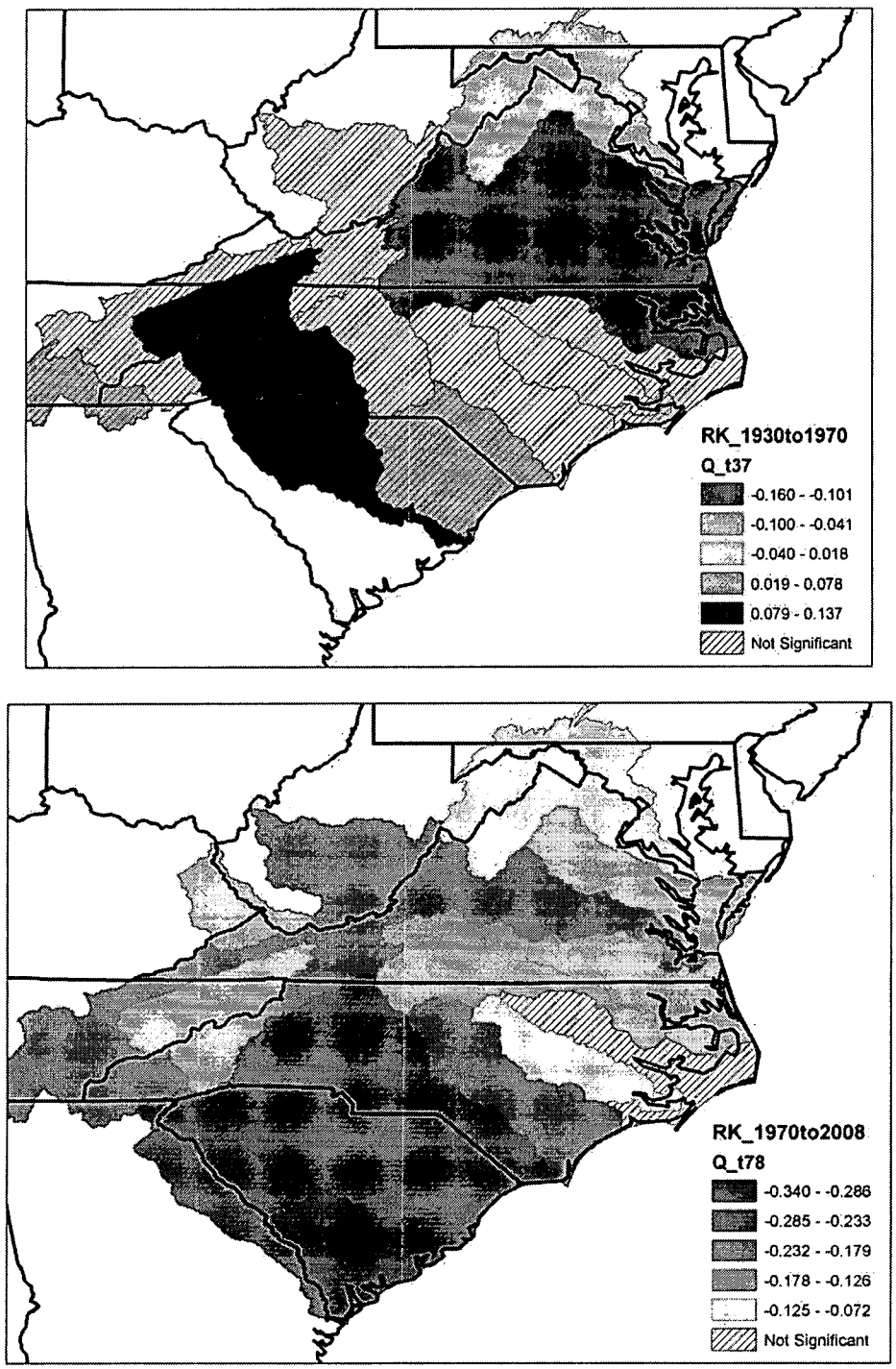


Figure 2. Change in stream flow, 1930-1970 and 1970-2008.Regional Mann Kendall test for HUC 8 boundaries. The tau value is shown, indicating the strength of the trend (ranges from 0 - no trend to +/- 1 – strong). Patterson, Lauren. (UNC-CH ongoing 2010).

Improving water supplies and becoming more efficient with the existing supply both can take many years and substantial expenditures. It is imperative, then, that the state do the best job it can today of projecting where water shortages will occur in the foreseeable future, and ensuring that those places live within a water budget, by adding more supplies and/or reducing demand.

Projecting and preparing for future water demands is critical to North Carolina's overall well-being. As noted by the Water 2030 study, conducted in 2004 by The Rural Center, Inc., a growing population will increase industrial, residential, and energy needs, thus increasing overall water usage. "The population is expected to grow from 8.5 million in 2004 to 12 million in 2030. Water consumption is expected to increase from 241 billion gallons per year for all households to 335 billion gallons if consumption continues on its current path." As a result, the Water 2030 study called for funding to address new supply infrastructure, education, and policy issues.

Water 2030 did not address future demands from agriculture. Many expect agriculture to become more intensive, more productive, and to rely more upon irrigation in the future.

It is not a foregone conclusion that as population increases water demand will increase at the same rate, especially if technology, legal restrictions, and efficiency-improvement efforts continue. The historical usage data plotted against population in North Carolina show this clearly: while water use overall does rise with population, the rates of increase in water use can vary from the increases in population. A great deal of this variation depends on how efficient water use is.

In comparison with other states of similar size, North Carolina uses more water per capita. For example, in 2000 North Carolina withdrew approximately 11,400 million gallons per day (mgd) with a population of 8,049,313, while Georgia, with a population of 8,186,453, used only 6,500 mgd. The large discrepancy between NC's and GA's water usage is due to NC's greater use of water for thermoelectric power.

There are also important potential new contenders for water use in the state. For example, the recent discovery that potentially marketable quantities of natural gas underlie parts of the Piedmont could mean that a gas drilling industry develops. This industry using large quantities of water, with additives, in a series of technologies called "hydrofracturing", to release the gas deep under the earth's surface. In other parts of the country, hydrofracturing, or "fracking," has already raised considerable concern about water use, water quality, impacts on local wells and air quality.

The 2008 Water Allocation Study reviewed North Carolina's water policies, legal structure, and state of hydrologic science. The report was presented to the Environmental Review Commission in January 2009. This report summarizes additional research into water resource allocation and the availability and maintenance in the State, with specific focus on the information needs and processes for effective water allocation planning and hydrologic modeling.

2. Water conflicts

It is inevitable that conflict over water availability in North Carolina will rise, as long as population growth continues. Use is increasing, stream flows are decreasing (see Figures 1 and 2, above), and there is inadequate prior review of increased withdrawals. Peak demands for municipal water (driven largely by outdoor watering of turf), for energy, and for agriculture (irrigation) usually coincide with each other and with low flow periods in the streams. Population is growing most rapidly in the headwaters (low surface water flow) areas, most of which lack large groundwater resources. State law makes it very difficult to move large quantities of water between the major sub-basins of rivers. Public water systems have a strong financial incentive to sell more and more water. There is little connection between most economic development and planning decisions that help drive growth patterns, on the one hand, and water availability efforts, on the other hand.

Above all, the state has an incomplete, somewhat confusing common law legal regime for sorting out conflicts and an inadequate statutory and administrative regime to draw on for avoidance and resolution of conflicts before they escalate. In sum, conflict will rise. Indeed, the rise has already begun.

As of this report, there are major lawsuits or threats of lawsuits involving water allocation in the Catawba basin, the Yadkin basin, along the Deep River in the Cape Fear basin, the Neuse basin, the Tar-Pamlico basin, the French Broad basin and the Roanoke basin. More such litigation can be expected and the state remains poorly suited to avoiding and efficiently resolving these matters.

B. Review of recommendations and status report

The original study purpose was to frame and analyze policy options for water allocation for consideration by the ERC. Consequently, the 2008 Water Allocation Study identified 9 major policy recommendations for the ERC. Over the past two years, the water allocation study team has had the opportunity to speak with multiple stakeholders and review those recommendations. Each recommendation is noted with a implementation update below.

1. **Clearly state policy goals to guide administrative and judicial decisions.** There still is no clear, general set of goals set by the legislature for water allocation to guide administrative and judicial decisions. Some of the recommended goals were included in the 2010 water allocation/modeling bill, but were stripped from the bill before it passed in light of the extremely short time frame for debate in the 2010 short session.

2. **Require a state permit for anyone who withdraws large quantities of water, either groundwater or surface water.** A version of a water withdrawal permit program was detailed in S. 907/H 1101, Water Resources Act of 2009. Stakeholders provided comments in a series of informal meetings. The study authors and stakeholders have continued to refine the ideas represented in S. 907/H1101.

3. **Conform existing laws to each other and to policy goals.** If and when the policy clarification and regulatory changes recommended above are enacted, there will need to be legislative effort to conform the many existing but scattered and inconsistent references to state water policy.

4. **Establish proactive, adaptive, river basin water supply planning: (1) models and (2) regional/river basin planning organizations.** Legislation enacted in 2010 (S.L. 2010-143) set the path for statewide hydrologic models in alignment with the water allocation study recommendations, and also directed incorporation of ecological flows into the models. When models project water shortages, it remains unclear who is responsible for solving the problem and whether the state will use regional river basin planning organizations.

5. **Integrate water data: (1) inventory state and US EPA water-reporting requirements, (2) identify and phase in both electronic reporting to DENR and provide information to the public on websites and other means, and (3) develop and begin to implement a plan to consolidate as much water data as possible into one comprehensive Water System Report to the state and the public.** S.L. 2010-144 created the Water Infrastructure Task Force, which could have done this work. However, the task force was pressed for time and focused narrowly on water infrastructure funding information. DENR has committed in its strategic plan to make integration of water quality and water quantity data and planning a high priority. As an initial step towards joint water quantity - water quality planning, the Divisions of Water Quality and Water Resources will compose a joint executive summary for each basin in the basin-wide planning process, starting with the Neuse basin. DENR reports that the Neuse joint executive summary should be completed by the end of the first quarter of 2011. This initial step is the only evidence to date of any concrete steps in the direction of integration. As of this writing the water data systems reporting to and within DENR remain as fragmented as ever. There have been some positive steps by the various funding agencies to coordinate their information, as a result of pressure by the legislature. Without a comprehensive policy to guide them and suitable incentives, the agencies and funders will continue to develop their systems without much regard for integration or the needs of local water suppliers, customers or legislative oversight.

6. **Address critical research needs.** S.L. 2010-143 took up the goal of better science on instream flow modeling. It also gave direction to DENR on use of flow models to predict shortages, as recommended by WAS. Other critical research needs identified remain important: What are the limits for groundwater withdrawal, especially in hard-rock settings (Piedmont and mountains)? How do large groundwater withdrawals effect nearby wells and surface flows, particularly in over-allocated basins? Could the entire southern Atlantic coast, including the states of Virginia, North and South Carolina, and Georgia, work on water allocation in a more coordinated way? How well does reclaimed water work with turfgrass varieties and other major landscaping needs? How much will climate change affect water availability?

7. **Legislatively direct the Local Government Commission (LGC) to take a more active role in monitoring the financial side of local government's operation and maintenance of water infrastructure.**

Direct DENR, in conjunction with the LGC, to monitor and regulate the ongoing financial and managerial capacities of water systems rather than just review system capacity when there are requests for expansion or new systems. Section 9 of the 2008 Drought Legislation (H. 2499) amended G.S. 143-355.4 to make water system financial sustainability (and rates to support it) a precondition to state funding for water infrastructure. The State Water Infrastructure Commission (SWIC) has adopted a policy to guide the LGC and funders in evaluating whether water system revenues exceed expenses. The Local Government Commission is now carrying out this function. Section 2 of SL 2010-144 required DENR and LGC to report on the financial sustainability of water systems to the 2011 General Assembly.

8. **Reward and spread best practices and leadership efforts in water efficiency.** As recommended by WAS and monitored by the Environmental Finance Center at UNC, water pricing has been widely adjusted to better account for the value of water. In addition, the state now requires separate meters for new in-ground irrigation systems. As directed by Section 17 of SL 2008-143 (drought bill) the SWIC, with the assistance of the Environmental Finance Center at UNC-CH, adopted "Recommended Guidance for NC Utilities Looking to Decrease Water use in the Long Term Through Rate Structure Design and Billing Practices" at its November 19, 2010 meeting.

9. **Create more storage**: (1) expedite above-ground reservoirs with minimal environmental costs; (2) encourage groundwater storage and retrieval and desalination where appropriate; (3) monitor increased used of reclaimed and grey water; (4) encourage use and restoration of decentralized storage: farm ponds, stormwater, and private property owner storage in private wells. Legislation enacted in 2010 (S.L. 2010-149) began a study of agricultural water use and storage, including the possibility of use of cost-share funds to rehabilitate farm ponds.

III. The Second Phase: 2009 to 2010

A. Overview of Study Methodology

The purpose of the study's second phase was to build on the original study and to analyze North Carolina's information needs and processes for effective water allocation planning and hydrologic modeling. The study focused on the approaches that other eastern states were taking to similar water allocation problems, particularly regional water planning.

The plan for the study's phase was multifaceted. In 2009-2010, the water allocation research team organized a seminar series to increase common understanding of water allocation issues. The team continued to refine the original recommendations, including meetings with interested stakeholders to discuss reactions to the first phase report and next steps. The research component of the study

evaluated several states' and interstate organizations' water allocation programs and processes and analyzed the current state of hydrologic modeling science and current regulation of instream flows.

B. Water Allocation Research Seminars

Background

The research team for the Water Allocation Study organized and sponsored (along with the Water Resources Research Institute) a series of seminars on water allocation and water resources, called the Water Allocation Research Seminars (WARS). The research team is indebted to the partners, co-sponsors and speakers themselves who are helped to bring experts on water resources together to UNC, Duke and other places in the state in 2010-11. The seminars were designed to raise the collective understanding of water management and to encourage dialogue among stakeholders about the right approach for North Carolina. The complete list of seminars, along with many of the presentations and presentation summaries, is available on the water wiki.

Learning objectives for the seminars

- How other states with statutory water allocation systems use planning processes, including local, regional and river-basin planning, and hydrologic models to inform their regulation of water withdrawals and consumption.
- How current limitations in hydrologic models produced by the Department of Environment and Natural Resources can be overcome to make those models useful for water allocation and planning.
- How current regulation of instream flows by North Carolina and its neighboring states is implemented and reviewed.
- How other states in the southeastern United States and elsewhere in the world are responding to threats of increased water scarcity and conflict.

C. Targeted stakeholder input

The principal investigators met with numerous stakeholders during 2009 and 2010, giving presentations, facilitating discussions and hearing the points of view of major water users, water providers, environmental and business groups, regulators, surrounding states and eastern United States water institutions. These events are summarized, with many of the presentations available, on the water wiki.

Based on the totality of this input, the principal investigators understand the views of stakeholders as follows:

- Most water professionals acknowledge that past, decentralized water resource regulations will be inadequate to assure water supply everywhere in North Carolina and the region in the coming decades.

- Water systems in the state are, however, highly diverse in every respect; it is impossible to find single "silver bullet" solutions to assure future water supplies. For example, re-use of water now considered wastewater will surely be important to some places in the near future, but the cost of creating and maintaining re-use production and distribution systems does not make sense for every place in the state.

- Given this diversity, there is widespread support for some state encouragement of regional water resource planning. The state should give the water users, providers and other interested parties in regions of predicted shortage a structure and enough authority to work out plans regionally to current projected supply problems, rather than first imposing solutions at the state level or (as at present) leaving it up to each jurisdiction to fend for itself.

- It is widely acknowledged that the state could help with future water planning by creating, improving and maintaining hydrologic models that are robust enough in their inputs to give confident predictions of future supply problems.

- It is widely acknowledged that many existing withdrawers do not have legal protection for their current inflows in the state; however, there is not widespread agreement on the details of a water withdrawal permit program at this time.

D. Investigations of other states' planning processes

The Water Allocation Study Team researched and evaluated water management governance structures implemented by other states and region. The PIs visited the Delaware River Basin Commission, the Susquehanna River Basin Commission, and the Middle Chattahoochee River Basin District, which is part of the Georgia Water Plan. The study team has also researched the applicability of Western U.S. watershed and river basin planning efforts, water planning institutions in various states, and the potential for federal interest and involvement in river basin planning. This report focuses on the models in the Delaware and Susquehanna basins and the planning model in Georgia.

1. *Delaware River Basin Commission:*

The Delaware River Basin Commission (DRBC) was created in 1961 by a compact between the President of the United States and each of the governors of New York, New Jersey, Delaware, and Maryland. The compact established the structure of the commission—giving each signing member, the governors of the four states, and the federal government one seat on the commission. The US Army Corps of Engineers represents federal agencies on DRBC. The compact originated from a U.S. Supreme Court case in 1937 (*NJ v. NY*) and a subsequent decision in 1954, to allocate the water resources of the Delaware River. A key tension in the Delaware basin is balancing the adequacy of water supply for New York City, from the upper basin, with the needs of downstream users, such as the need to keep saline water below the intake for the City of Philadelphia.

The DRBC was charged with creating a comprehensive plan for the Delaware River, maintaining a water resources program and keeping an annual budget to cover expenses for the programs. The DRBC has the authority to set "standards of planning, design and operation of all projects and facilities in the basin which affect its water resources." The DRBC has a staff of more than 40, many of whom have high levels of expertise in hydrology, water chemistry, aquatic biology, assessment, modeling, as well as communications and planning. The DRBC does its own water quality and quantity reviews and works with states or the federal government on all types of projects in the basin.

The comprehensive plan includes the Water Code of the Basin, the goals for basin water projects and specific water allocation measures, project review and conservation measures and water conservation and water quality goals. The DRBC has established a goal of reducing water use and requiring water efficiency from basin water users. To help basin water users achieve this goal, the DRBC has developed a list of water conservation and efficiency practices. These practices include a requirement for source metering, leak detection and repair, setting performance standards for plumbing and water fixtures, the use of conservation retail water pricing structure, and requiring auditing, leak detection and repair for municipal suppliers.

The DRBC has the right to allocate waters of the Delaware between the states in accordance with the doctrine of equitable apportionment. As part of its water allocation responsibilities, the DRBC utilizes water level gauges to determine flow conditions and hydrologic models very similar to those being prepared in North Carolina to manage the multiple, conflicting river uses. Different flow conditions correspond to drought designations and the DRBC has established specific actions for reservoir releases and diversions. Once the DRBC has declared a "drought," mandatory conservation measures are enacted. In addition to its drought powers, the DRBC is charged with ensuring that all surface waters are allocated in a fair and sustainable manner. The DRBC reviews and permits new water withdrawals to ensure that there is sufficient water. The DRBC also oversees water rates in the basin so that the cost of infrastructure is included in the rate and that rates are uniform and affordable across the states. The

DRBC authority extends to ground water and the DRBC apportions ground water with the goal of preserving the aquifer.

The DRBC has integrated management of water quality and water quantity. The DRBC maintains the quality of interstate water as well as apportioning its use.

2. Susquehanna River Basin Commission

The Susquehanna River Basin Commission (SRBC) was created in 1970 by a compact signed by New York, Pennsylvania, Maryland and the President of the United States. The compact was created to 'provide the mechanism to guide the conservation, development and administration of water resources"[1] in the Susquehanna basin. The compact created the SRBC and each signer received one seat on the newly created commission. Each member gets one vote, with majority rules except in when unanimity is required, specifically for commission budgets. Unlike the Delaware and most similar river basin planning organizations in the United States, the SRBC was created primarily to reduce future conflict, rather than to resolve problems that had already become crises. It was, in other words, forward thinking.

After its creation the SRBC was tasked with creating a Comprehensive Plan for the Water Resources of the Susquehanna River Basin, ensuring that the comprehensive plan is being followed and creating a budget for the commission's activities. For the implementation of the comprehensive plan "the primary responsibility for managing the waters of the Susquehanna falls on the three member states; the SRBC works to fill in regulatory gaps that exist in each states management program."[2] The Comprehensive Plan focuses on six management areas: water supply, water quality, flooding, ecosystems, Chesapeake Bay, and 'coordination, cooperation and public information.'[3] For each of the six management areas the commission does a variety of work, in some cases taking a major role in the development and regulation and in others providing a coordinating role between different jurisdictions.

Water supply

The Commission takes a major role in regulating the water allocation in the Susquehanna basin. The commission requires notification of any usage above a certain amount and large diversions of water require project approval from the commission. The commission works to keep an inventory of basin water supplies and uses to facilitate an equitable distribution of water, including the ecosystem needs for in-river and Chesapeake Bay systems.

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[1] SRBC Overview
[2] Information sheets
[3] SRBC Comprehensive Plan

Water quality

The SRBC's role is coordination to protect public water resources and ensure uniform enforcement by signatory parties. The majority of the regulation regarding water quality is overseen by the local jurisdictions that are part of the commission. The SRBC has created the Watershed Assessment and Protection (WAP) Program which maintains its own personnel for monitoring water quality in the Susquehanna including chemical, biological, hydrologic and other parameters. The SRBC has also created a Water Quality Advisory Committee which has people from the SRBC, state, local and federal agencies. The SRBC can, with the appropriate agencies, make periodic inspections to state parties.

Flooding

The SRBC created a strategic plan for the Susquehanna Flooding Forecast and Warning System, SFFWS. The SRBC maintains a flood forecast website, serves as a liaison between the National Weather Service and local jurisdictions and works to provide appropriate flood action information to local jurisdictions.

Ecosystems

The SRBC performs ecosystem monitoring and assessment to acquire data for watershed management. In this capacity the SRBC has authority to discuss water quality and supply issues with any basin authority.

Chesapeake Bay

The SRBC has taken an active role in quantifying the water flow need to 'restore and maintain the ecological health of the Chesapeake Bay."[4] The SRBC works to provide habitat for migratory waterfowl and shorebirds. The SRBC works to support member states sediment and nutrient reduction strategies.

Coordination, Cooperation and Public Information

The SRBC tried to encourage consistent interstate water management policies and actions. It executes, reviews and updates memoranda of understanding (MOUs) with member jurisdictions to coordinate programs that overlap.

Conclusion

The main goals for the SRBC are to facilitate uniform management practice throughout the basin, relying on the local jurisdictions to enforce regulations and to inventory and allocate water within the basin through SRBC's own project review. Because the water allocation is handled comprehensively the SRBC can foresee over-use before it occurs and make alterations to large water-users dockets.

[4] http://www.srbc.net/about/geninfo.htm

3. The Georgia Comprehensive Water Plan

The Georgia legislature passed the Comprehensive State-wide Water Management Planning Act in 2004[5] (2004 Water Act) requiring a state-wide management plan, the development of regional water planning and the creation of the Water Council. The Water Council has eight members from state agencies including two from the Department of Natural Resources (DNR), two members from each of the branches of the Georgia General Assembly, and two members who are not in the Georgia legislature but are appointed by the house and senate respectively.[6] In 2008 the Environmental Protection Division (EPD) of the DNR finalized the Georgia State-wide Comprehensive Water Management Plan (State Plan), which was approved by the Water Council and approved by the Georgia assembly. Any changes to the State Plan must be approved by the Water Council and authorized by the assembly.

The State Plan lays out four steps to begin working on a statewide framework of regulation.[7] The first step was for the EPD to complete a water resource assessment to see the supply and pollution assimilation capacities of the river basin by region. These assessments were distributed to regional water planning councils and combined with local economic and social data to forecast regional water needs. The third step, where regional councils work to develop a regional water management plan, is currently in the process of being completed. Finally these regional plans will be adopted and acted upon both by regional users and the EPD, which will base permitting off of the regional plans. These plans are not intended to address emergencies or extreme conditions including droughts.

As the 2004 Water Act required regional level contributions to water management, Georgia divided its river basins into regions (see map) and put these under the control of regional water councils. Regional water councils are set up such that their members will represent a wide variety of water uses in the area. The regional councils have no more than twenty-five members with the balance of representation determined by the Governor or Lieutenant Governor.

Each regional council signs a Memorandum of Agreement (MOA) with the EPD and the Georgia Department of Community Affairs (DCA)[8]. The MOA requires that the regional councils submit Water Development and Conservation Plans (WDCP) based on EPD and a regional contractor's data, involve the public, work with other regional councils that are hydrologically-connected and coordinate with EPD on planning. The EPD is required to provide technical assistance and planning documents, monitor water resources in the basin and consistently update the data, review and adopt the WDCP if it is in compliance. The DCA will provide land use planning information and coordinate between the WDCP goals and local governments' or regional commissions' comprehensive plans.

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[5] Water Management Act
[6] Water Council membership
[7] State Plan
[8] example MOA

The regional councils will use the water resource assessment for their region and 10, 20, 30 and 40-year forecasts for water usage to create the WDCPs.[9] For councils that are hydrologically-connected the regional councils are responsible for coordinating shared resources. After the plans are a developed a draft of the WDCP is to be sent to the EPD for approval. After approval the EPD will consult with the WDCP when making permitting decisions and grants or loans for water projects will be guided by the plan. The WDCP's will be reviewed and revised as needed or every 5 years. One of the main goals for the WDCPs is to close current and avoid future gaps in water needs either through conservation or advance planning about additionl supplies.[10]

Each of the regional councils has a fact sheet that discusses who is on the council, where the regional area is, the key issues for the area and the current water use for the area[11]. Most of the legwork for the each of the regional councils is done by the EPD and its various contractors, which include many engineering and consulting firms from Georgia and elsewhere. EPD has the primary responsibility for ultimate decisionmaking about water allocation.

It is still premature to assess the value of the Georgia Water Plan, relative to its cost. The state has committed to spending upwards of $30 million on its planning effort over the three years 2009, 2010 and 2011. What the principal investigators of the Water Allocation Study observed in their trips to Georgia, however, was an admirably high level of involvement of state and regional leaders in evaluating their water supply challenges. If nothing else, the Georgia process has greatly raised the level of understanding of water resources issues in the ranks of local leaders and elected officials,outside of the realm of water professionals, who are already attuned to these matters..

E. Hydrologic Modeling in North Carolina

Review of 2010 Hydrologic Modeling Legislation and Efforts by DENR to implement statewide modeling

On May 17, 2010, Reps Gibson & Harrison introduced H 1763, Improve River Basin Modeling and H 1765, IBT Enforcement and Notice, as recommended by the Environmental Review Commission. Senators Clodfelter and Kinnaird introduced S1169, IBT Enforcement and Notice and S 1170, Improve River Basin Modeling, as recommended by the ERC. Representatives Crawford, Gillespie, Owens & Tarleton introduced a package of bills recommended by the Legislative Study Committee on Water & Wastewater Infrastructure --H 1743 - H 1751.

On June 29, 2010, in one of the shortest legislative sessions in recent history--with a budget agreement in place--the Senate Agriculture and Environment committee took up the package of water infrastructure bills as well as the river basin modeling bill. The modeling bill had been calendared for

[9] Regional WDCP development guidelines
[10] Additional Guidance for WDCP creation
[11] Georgia regional water council pages

committee consideration on June 24, but it was pulled in the face of concern from both business and environmental stakeholders. The bill had gone through several versions resulting from informal stakeholder meetings prior to June 24. After being pulled from the committee agenda, Sen. Clodfelter called the major concerned stakeholders together for a meeting on the morning of June 25, where concerns and possible solutions were aired. All the stakeholders present supported the development of hydrologic models and achieved a general consensus. Over the next several days more versions of the draft consensus bill were circulated.

On June 29 the Senate Agriculture, Environment and Natural Resources Committee moved the provisions of H1743 into another of the water infrastructure bills, H 1746; passed the whole package of water infrastructure bills with only one question (Sen. Bingham: Q: is there any funding being provided for the study of infrastructure needs and the needs survey? A: "no, there is no funding, so we are giving it to the University and DENR..."). The Committee passed the modeling bill as a committee substitute to H 1743, with one significant amendment by Sen. Clodfelter to address some of the last minute concerns of major water users. The bill passed second reading in the Senate on June 30. The House concurred; Governor Perdue signed SL 2010-143 into law.

This legislation gives formal legislative imprimatur to the statewide development of hydrologic models. It also gives direction to DENR on some ways the models should be designed and used. The Water Allocation Study research team commends the legislature and DENR for passage of the bill. It is an important milestone for water allocation in North Carolina.

Status of Hydrologic Models

DENR developed a hydrologic model for the Neuse River Basin in 2008-2010, and put out a summary of its findings.

> The Neuse River Basin Hydrologic Model predicts that six systems may not be able to withdraw the amounts of water needed to fully meet their demands in the 2050 demand scenario under all 78 annual flow patterns contained in the model. These systems include Raleigh and Durham as well as four additional systems - Hillsborough, Orange-Alamance, Piedmont Minerals and South Granville Water and Sewer Authority.
>
> As demands increase, the frequency and duration of supply shortages also increase.Any impacts on target ecological flows would also increase. The long-term, or 2050, demand scenario has higher water demands to support significantly more residents.
>
> The long-term demand estimates were derived from information included in water system's local water supply plans. Raleigh anticipates needing 129 million gallons per day to meet demand in 2050, which is a 183 percent increase over 2008 usage. Durham's system is expected to need 41 million gallons per day to meet the expected demand in 2050.

> The occurrence of shortages for these two systems increases from once in 78 annual flow patterns for the 2030 demand scenarios to 36 of 78 for Raleigh and five of 78 for Durham for the 2050 demand scenario.
>
> If Durham's demand for water reaches the predicted average of 41 million gallons per day with only their current sources of water to meet the need, then the system could expect to experience up to 60 continuous days when demand could not be fully satisfied over the range of flows that have occurred in the basin from 1930 to 2008. If Raleigh's demand reaches the predicted average of 129 million gallons per day with only their current water sources, then the water system could expect to see up to four continuous months when demands could not be fully satisfied. And shortages could occur during 36 of the 78 annual flow patterns seen since 1930.[12]

This model and report were completed before the legislative direction to include ecological flow needs in its modeling, so in that respect the findings of probable future shortfalls are conservative.

DENR reports that both the Tar-Pamlico and Broad models are scheduled to be completed by December 2011, not including EMC model approval, which DENR hopes to have completed by the summer of 2012. It sees the model completion as a first step to what is for DENR currently the final goal, which is the compilation of a water resources river basin plan. The internal target for the completion of the Tar-Pamlico and Broad water resources basin plans is December 2012.

The Water Allocation Study team applauds DENR and the Division of Water Resources and its advisors and consultants for its work on the Neuse model; however, as this study has tried repeatedly to point out, the production of a plan is not the end of a good planning process. Who is responsible for addressing the problems identified in the plan, and when, and how? North Carolina cannot yet answer these questions, other than leaving it up to the individual systems to take or leave the disquieting information.

DENR is working on a Cape Fear model update with two parts: 1) an update to the existing Cape Fear hydrologic model and 2) combining the Cape Fear and Neuse models into a single model (because these two basins are so interconnected). The target date for the completion of the initial update to the existing model is the summer of 2011. DENR reports that the completion of the combined model and the publication of a new Cape Fear water resources plan will take longer because these elements are critical components in the EMC's ongoing 4th round of the Jordan Lake water supply allocation process. At present, the updated Cape Fear Plan, the combined Neuse & Cape Fear hydrologic model, and the new allocations are projected to be completed by the spring of 2013, if there are no allocations that will require an IBT certification.

Regarding DWR's current efforts in the Roanoke Basin, the Division of Water Resources reports that it is working on an update and expansion/enhancement of the existing hydrologic model (which will include

[12] DENR, Division of Water Resources, Neuse River Basin Water Resources Plan (July 2010) at 1-5-6.

the entire basin), but, at present, there is no scheduled completion date for this project. Roanoke Basin model kickoff meetings have been scheduled for December 13 and 17, 2010, in Weldon and Reidsville, respectively. The complications with the Roanoke schedule include:

- The Roanoke update is intrinsically linked to the Kerr Lake Regional WS IBT impact analysis. Therefore, DENR is trying to coordinate the IBT analysis with the big picture planning needs.

- DENR is still trying to determine the best approach to handle all the overlapping interstate issues in this basin that involve Virginia, work with the USACE on the Kerr 216 study, and how best to coordinate North Carolina's planning efforts with the Roanoke Bi-State Commission's needs and expectations.

DENR has not yet developed a full schedule for completing the models for the remaining basins. For the 2011 session it does not need additional funding as the ongoing work has adequate funding for the next two years. Costwise, it estimates the Yadkin model to cost $250,000; less for smaller basins such as the New and Lumber. DENR has a report due by November 1, 2011, with a full schedule to the ERC, which is supposed to present as well the agency's thoughts on areas with the highest probabilities of shortages. It is planning to meet in January, 2011 with TVA to start discussions on the best approach for the Tennessee Valley sub-basins (Watauga, French Broad, Little Tennessee and Hiwassee Basins).

F. Instream Flows in North Carolina

Introduction and current regulation

"Instream flow" is the amount of water needed in a stream to adequately provide for uses occurring within the stream channel. Instream uses may include some or all of the following: aquatic habitat, recreation, wetlands maintenance, navigation, hydropower, riparian vegetation, and water quality. In North Carolina, the instream flow has historically been equated with the "7Q10," which is the lowest flow expected to occur on a particular stream for 7 consecutive days once every 10 years. The 7Q10, however, is a very low flow which under natural conditions is the result of drought. This understanding of "instream" or "minimum flow" as equal to "7Q10" has arisen largely from the use of that statistic to calculate wasteload allocations for purposes of discharge permits. It has nothing to do with the needs of other instream uses besides wasteload allocation. Managing water flows for long-term sustainability will requiredifferent, probably more complex, flow regimes that protect ecological integrity. In order for the instream flow to provide for all instream uses, the State must develop a better understanding of flow requirements.

North Carolina's efforts to maintain instream flows have been limited to minimum flows or minimum releases from dams. As the state's water withdrawals increase for municipal, industrial, irrigation, or power generation, minimum flows no longer accurately reflect the hydrologic needs of the ecosystem. Minimum flows are intended to be low flows of short duration—not the new normal. Minimum flows

also fail to incorporate all aspects of a flow regime, including the magnitude, timing, frequency, duration, variability, and rate of flow change. Minimum flows do not account for seasonable variability or variability across years.

The only North Carolina statute that directly regulates withdrawals is the Water Use Act of 1967 (Capacity Use Area). The Water Use Act of 1967, G.S. 143-215.11 through .22, provides for the designation by the Environmental Management Commission of capacity use areas--areas in which the supply of water (surface and/or groundwater) is insufficient to meet demand. Water withdrawals in capacity use areas require coordination and regulation, in order to protect the interests and rights of residents and property owners and of the public interest. Instream flows can be protected through imposition of conditions by the Division of Water Resources when reviewing various other permits. These permits include sections 401 and 404 of the Clean Water Act, the N.C. Dam safety Act, federal hydropower licensing, and reviews and environmental studies required by the National and State Environmental Policy Acts.

Ecological Flows

Ecological flows are a more comprehensive approach to understanding flow requirements. The 2010 legislation on river basin modeling in North Carolina specifically directed DENR, including the Environmental Management Commission and a newly created Science Advisory Board, to work out an approach to the modeling of ecological flows in the state. Further work on instream flows in North Carolina should be done only with the insight and input gained from the work required under this 2010 legislation, which defined ecological flow as "the stream flow necessary to protect . . . . the ability of an aquatic system to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity and functional organization comparable to prevailing ecological conditions and, when subject to disruption, to recover and continue to provide the natural goods and services that normally accrue from the system."

Other states are also in the middle of review processes for their instream flow approaches. DENR and its Division of Water Resources as well as the Wildlife Resources Commission should continue to monitor this work through participation in interstate groups and conferences.

IV. Revised Findings and Recommendations

On the basis of further work in 2009-2010, the Water Allocation Study Team continues strongly to believe in the importance of its original nine recommendations. But the work underway on river basin modeling should give the state a better basis for its future, deferred decisions about water withdrawal permitting or other significant new ways to manage water conflict. And in lieu of a general, legislatively-led directive on how to carry out river basin planning, the study team believes that much will be learned by encouraging and analyzing the nascent regional planning efforts that are now arising on their own. It may be that a diverse, "bottoms-up" generated set of planning organizations, with tailored authority and modifications appropriate to the particular water challenges in each region, will be preferable to a Georgia-style statewide water plan.

1. **The PIs found most stakeholders support legislation clearly stating policy goals to guide administrative and judicial decisions in concept but have not agreed to specific policies and language.** Legislation setting policy goals deserves and requires considerable time for public and legislative discussion and debate. Economic recovery, balancing the state's budget and other pressing issues are likely to require most of the 2011 General Assembly's time. Furthermore, a number of important water disputes are working their way through the Office of Administrative Hearings and the courts, including *L&S Water Power, Inc. v Piedmont Triad Water Authority* (seeking compensation for downstream hydropower water users from upstream reservoir construction despite permitting by the State). Decisions in these cases may clarify or unsettle North Carolina's complex mixture of common and statutory water law. **The PIs recommend that the ERC ask the stakeholders to continue to work with legislative staff on policy goals and report to it before the 2012 Session of the General Assembly.**
2. **The PIs found that only NC and one or two other states do not require permits for large water withdrawals. Many industrial and local government stakeholders recognize the value and certainty that state water withdrawal permits provide to them. Most agricultural stakeholders oppose water withdrawal permits.** Some stakeholders would be more willing to accept water withdrawal permits in exchange for relaxation or repeal of the state's law regulating interbasin transfers of water. Other stakeholders oppose amending the state's interbasin transfer law. The South Carolina

General Assembly, SC Department of Health & Environmental Control and SC stakeholders discussed and debated Act 247 (SB 451) for over five years before enacting it in 2010. The details of many provisions of a permitting program require and deserve considerable time for public and legislative discussion and debate. **The PIs recommend that the ERC ask the stakeholders to continue to work with legislative staff and DENR on water withdrawal permitting and report to it before the 2012 Session of the General Assembly.**

3. **The PIs found that North Carolina may have economically recoverable shale gas resources in the Triassic Basin, including Chatham, Lee and Moore Counties in the Cape Fear River Basin. Extraction of shale gas requires large volumes of water. West Virginia, Pennsylvania, New York, Susquehanna River Basin Commission, and Delaware River Basin Commission regulate water withdrawals for gas extraction in the Marcellus shale. The PIs recommend a moratorium on water withdrawals for shale gas development until the relevant river basin model has been completed and shows there is no water resource problem for existing users.**
4. **The PIs found and recommend that conforming existing laws to each other and to policy goals will have to wait until policy goals and water withdrawal permitting are set.**
5. **The PIs found growing support and interest in the development of hydrologic models. The PIs recommend that DENR continue to implement SL 2010-143, Improve River Basin Modeling, and develop models for each river basin. The PIs recommend that DENR work with the General Assembly, water withdrawers, other states, and other stakeholders to fund the development of models for the remaining river basins, including the French Broad, Little Tennessee, Lumber, New, and Roanoke Rivers by 2013.** The French Broad Water Resources Study Committee, staffed by the Land of Sky Regional Council, and a working group in the Lumber River basin, staffed by the Lumber River Council of Governments, would utilize hydrologic models for water resources planning. **The PIs found that the energy-**water model developed by Duke Energy for the

Catawba-Wateree River Basin in 2005 predicts water shortages between 2048-2058. The Catawba-Wateree Water Management Group (Duke Energy and the water utilities that withdraw water from the basin) have funded a study to update to safe yield analysis for the basin to include the 2007-2008 new drought of record, climate change and other information. The update will be completed in 2011. The PIs also found that the hydrologic model developed by DENR for the Neuse River Basin appears to predict water shortages in the Upper Neuse/Research Triangle region in the very near term. The PIs found little support or interest in trying to apply the Water Use Act of 1967 and write state rules to address these future shortages.

6. **The PIs found that most successful regional collaboration and environmental problem solving from the Catawba to the Delaware to the Neuse requires an outside driver, like the FERC in the Catawba, the US Supreme Court in the Delaware and the Environmental Management Commission in the Neuse (Falls Lake rules).** Although the state transportation system is heavily centralized, the NC Department of Transportation relies upon metropolitan planning organizations (MPO) and rural planning organizations (RPO) to develop regional transportation solutions and to set priorities. Because the state's "water system" is heavily decentralized, DENR and water users would benefit from regional water planning organizations that can share information and resources, evaluate tradeoffs, minimize conflicts, and develop cost effective solutions. **The PIs recommend that the ERC ask the water withdrawers and other stakeholders in the Upper Neuse River Basin what steps they individually or collectively plan to take to balance the water budget in their region. The PIs further recommend that the ERC ask the Catawba-Wateree Water Management Group for a briefing on its updated safe yield analysis in 2012 and if necessary what steps they plan to take to balance the water budget in their region.**
7. **The PIs found that DENR's strategic plan commits the Department to integrating water quality and quantity and that staff of the Division of Water Resources and the Division of Water Quality have begun discussing coordinating and integrating their planning.**

Water withdrawals can affect water quality; wastewater discharges or returns affect water quantity. Water quality models are built upon hydrologic models. Both stricter water quality standards and limited water resources will likely increase stormwater capture and reuse and use of reclaimed water and could reduce downstream flows. The PIs recommend that the ERC direct DENR to integrate its river basin based water quality and supply planning starting with the next Neuse River Basin Plan in 2012 and Cape Fear River Basin Plan in 2013.

8. **The PIs found that consolidating and improving reporting and planning and reducing reporting burdens will require time and resources by DENR and by local governments. and that no legislative proposals have been drafted for the 2011 General Assembly. The PIs recommend that the ERC ask DENR, NC League of Municipalities, NC Association of County Commissioners, NC American Water Works Association, and other interested parties if an effort to consolidate and improve reporting is a high enough priority to devote staff resources to the project after the 2011 General Assembly adjourns.**
9. **The PIs found growing support for the importance of operating and maintaining water infrastructure to the State's economy and environment. The PIs also found that the policy set by the General Assembly in SL 2008-143 (drought bill) requiring water utility revenues to exceed expenses in order to qualify for state financial assistance; the review of financial audits submitted by local governments to the State Treasurer; the technical assistance and training provided by the Environmental Finance Center at UNC-Chapel Hill, Rural Economic Development Center, NC Rural Water, and others; the work of the State Water Infrastructure Commission (SWIC) ; and the recent enactment of SL 2010-144 (water infrastructure needs bill) requiring the State Treasurer and DENR to improve coordination of the financial and environmental review of water systems are bearing fruit and are encouraging proper operation and maintenance of water infrastructure. The PIs support the recommendations made by the Treasurer and DENR to improve coordination in their November 1, 2010 report to**

the General Assembly. The PIs note that the Treasurer's office reports a large number of water systems in financial difficulty because of the recession, aging infrastructure, increased costs and other factors. The PIs recommend that the ERC request annual reports from the Treasurer and DENR as set out in SL 2010-144.

10. The PIs found broad support for increasing water efficiency. The Georgia General Assembly enacted the Georgia Water Stewardship Act in 2010. DENR provided a number of water efficiency options in a 2009 report. The PIs recommend that the ERC consider recommending legislation like the Georgia law. The PIs note that Duke Energy and water utilities in the Catawba-Wateree Water Management Group are working closely together and may find opportunities to increase both water and energy efficiencies.

11. The PIs found that summer demand for water for lawn and landscape irrigation in some regions increases the risks for water shortages and increases the costs of building water infrastructure sized to meet peak demands. The PIs also found that the Green Industry of nurseries and landscapers is vulnerable to boom and bust cycles between droughts because water systems restrict outdoor water use during droughts. The PIs recommend that the ERC consider banning the use of drinking water for lawn & landscape irrigation in new developments by January 1, 2015, either statewide or in regions where shortages are likely to occur. The PIs believe that more efficient irrigation systems combined with stormwater capture and reuse and reclaimed water could meet the demand for lawn and landscape irrigation for new development. The PIs further believe this policy would make both water systems and the Green Industry more resilient during times of drought.

12. The PIs found broad support for maintaining and increasing water storage. The PIs recommend utilizing the local water supply plans and other data to assess condition of existing water supply dams and reservoirs. How many dams need to be repaired and replaced? How much will repair and replacement cost? How much

capacity has been lost to sedimentation? The PIs support the Division of Water Resources' proposal for the State of North Carolina to acquire NC's share of water supply storage in Kerr Lake from the US Army Corps of Engineers. (The Commonwealth of Virginia would acquire VA's share.) Water utilities in Georgia are beginning to develop off-stream reservoirs, including old quarries. The PIs believe that off-stream reservoirs have potential in NC as well. The PIs recommend using existing LIDAR data developed for the state's floodplain mapping program to improve and digitize stream maps and to aid in the identification of sites. (The 2004 General Assembly asked the NC Geographic Information Coordinating Council to develop and adopt aplan to improve and digitize stream maps. The GICC adopted a plan in 2005.) The PIs further recommend that the ERC consider legislation to provide authority to local governments and/or DENR to preserve water storage sites and prevent inappropriate development, similar to the authority that local governments and the Department of Transportation have to preserve right of way for planned transportation improvements. Dr. David Moreau at UNC-Chapel Hill has suggested that storage in certain reservoirs be reallocated to higher value uses. Capturing and reusing rainwater and stormwater for lawn and landscape irrigation and other non-potable purposes could reduce water supply and water quality problems. The PIs recommend that the ERC direct DENR to credit the use of stormwater BMPS for water harvesting. The PIs recommend that DENR continue working with the NC Department of Agriculture, and the Soil and water Conservation Districts, US Natural Resources Conservation Service and others to develop best management practices and technical and financial assistance programs for water quality and quantity, including more efficient irrigation systems, alternative watering systems for livestock, and maintenance of farm ponds.

V. Conclusion: Future of Water in NC

North Carolina is geographically blessed with ample precipitation in normal times. If the state manages its water resources properly, they can be a huge comparative advantage to the economy and the quality of life in the state. Almost all experts predict significant conflict over scarce water in much of the world, including the United States, in the near future.

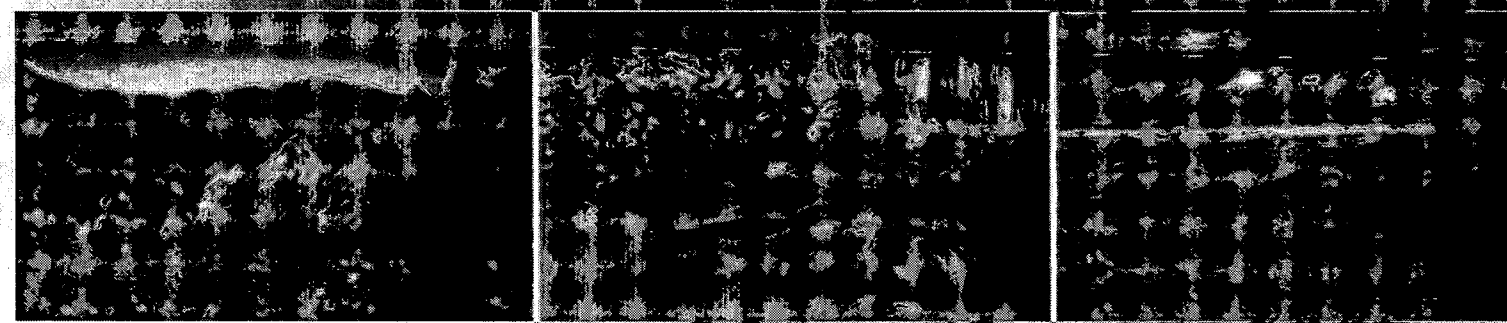
However, the legacy of this ample water supply is a set of institutions, laws, and policies that do not deal very well with places and times of water scarcity. Even in North Carolina, as in the rest of the southeast, there are likely to be many more such places and times in the decades to come.

The recommendations in the 2008 report of the Water Allocation Study, as revised and extended in this report, would build on the water resource laws, institutions, and policies already in place in North Carolina to protect economic investments and the state's environment. The study team believes that adoption of these recommendations would greatly help ensure the long-term future of quality of life in North Carolina. The study team stands ready to assist the legislature and the many stakeholders on these issues as they discuss and debate these recommendations.

Appendix: Water Allocation Research Seminars

1. Mary Sadler of Hazen & Sawyer and Kenny Waldrop of Raleigh discussing the process of determining ecological flows in connection with proposed water storage reservoirs on the Little River and at Lake Benson. Feb 12, 1 pm, J.C. Raulston Auditorium, Raleigh. Abstract
2. Rick Hooper, President & Executive Director of the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) on "Advancing Hydrologic Science through Community Engagement" on February 19 at Duke
3. Leigh Askew, Fanning Institute, U. of Georgia, discussing the Georgia Water Plan, March 1
4. David Baize and Chuck Gorman, SC DHEC on "The Surface Water Permitting Experience in SC" on March 19 at 9:00 am at the Albert Coates Local Government Center at 215 N Dawson St in Raleigh (before the SWIC meeting at 10:30).
5. Richard Whisnant on "Fire & Water: Making Meaning out of Water Resource Policy, the keynote address at the annual conference of the Water Resources Research Institute (pdf of the powerpoint here, and draft text of the speech itself here) on March 30 at 9:00 am at NC State University's McKimmon Center.
6. Peter Raabe, NC Conservation Director for American Rivers, on the potential to increase water efficiency in NC (working title) on April 16 at 1:00 pm at the Albert Coates Local Government Center at 215 N Dawson Street in Raleigh (Directions: http://www.nclm.org/findus.htm).
7. Dr. Dave Moreau, Professor Emeritus, UNC-CH, on "Storage of Water in New & Old Reservoirs" (pdf file here) on April 23 at 1:00 pm at NC State University's J C Raulston Arboretum (Directions: http://www.ncsu.edu/jcraulstonarboretum/visit/visitor_information/directions.html).
8. Elizabeth Kistin, Research Associate in Water Resources at Duke University's Nicholas Institute for Environmental Policy Solutions on "Barriers to Basin-Wide Allocation and Opportunities for Overcoming the Zero-Sum Mentality: Lessons from the Orange-Senqu Basin in Southern Africa" on April 30 at 1:00 pm at A148 Levine Science Research Center at Duke(www.parking.duke.edu).
9. Dr. Carol Couch, Senior Public Service Associate, College of Environment & Design, University of Georgia and former Director of the Georgia Environmental Protection Division, will speak on Perspectives on the Georgia Water Planning Process on Friday, May 14 at 9:30 am in the Ground Floor Hearing Room of the Archdale Building (DENR) at 512 North Salisbury Street in Raleigh Georgia has invested about $30,000,000 in statewide and regional water planning .
10. Katie Kirkpatrick, P.E., Vice President of Environmental Affairs, Metro Atlanta Chamber, on Atlanta's situation and recent water management analysis and approaches in Georgia (with some additional slides on Georgia's new water efficiency/conservation legislation) on Monday, June 21 at 1 pm at NC State University's J C Raulston Arboretum.
11. Jim Mead, DENR Division of Water Resources Instream Flows Section, will present a WARS Seminar on NC's evolving approach to ecological flow determination. Raulston Arboretum, Raleigh, 1 pm. Jim's presentation at the WARS Seminar is here...Jim's earlier presentation on the topic to the 2010 NC Water Resources Research Institute conference is here.
12. Christophe Tulou, DC Director of the Environment, on Greening DC and Capturing and Reusing Stormwater, on September 10 at 1:00 pm at Durham City Hall
13. Scott Potter, Director Nashville Metro Water Services, on "Nashville's Approach to Water Quality" and "Nashville's Recovery From a 500 Year Flood" on Friday, October 15, 2010 at the City of Raleigh's Wetlands Education Center at 950 Peterson Street in Raleigh 27610. Metro Water Services provides drinking water, wastewater, stormwater, watershed management and other water services for Nashville and Davidson County, Tennessee.
14. David Welch, Director Division of Laboratory Services St. Johns River Water Management District, on "Water Management Districts in Florida, Ambient Monitoring Programs, Past Present and Future." October 29, 2010, place TBD.

Environmental Funding in North Carolina



January 18th, 2011

FISCAL RESEARCH DIVISION
A Staff Agency of the North Carolina General Assembly

Presentation Overview

1. Overview of Environmental Programs & Funding
   a. Department of Environment & Natural Resources
   b. Conservation Trust Funds
   c. Wildlife Resources

2. Governor's Recent Budget Actions

Overview: Environmental Programs

Regulatory

Natural Resources

DENR

Trust Funds

Clean Water Management

Natural Heritage

Parks & Recreation

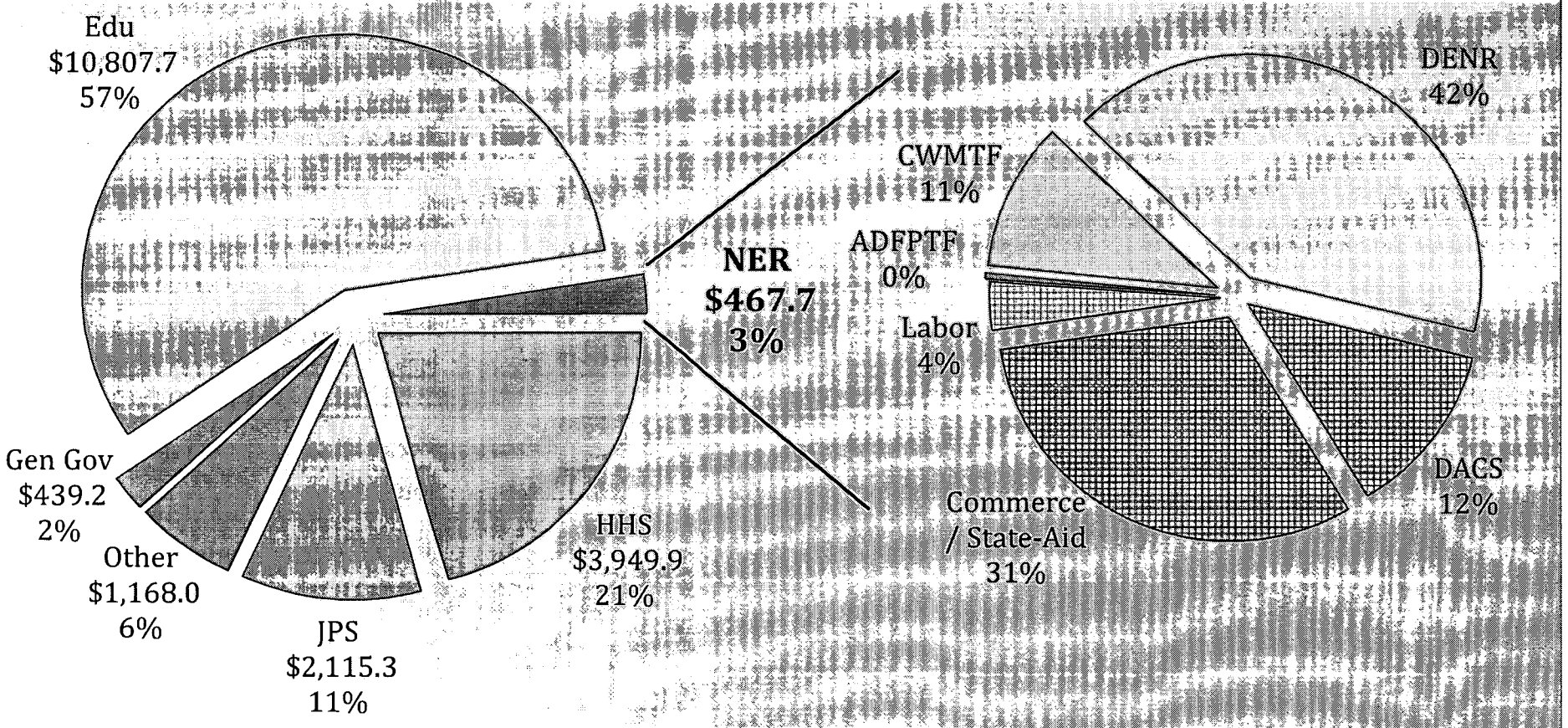
Ag Development & Farmland Preservation

Wildlife Resources

Overview: Environmental Funding

FY 2010-11 Certified - General Fund Appropriations

(in millions)

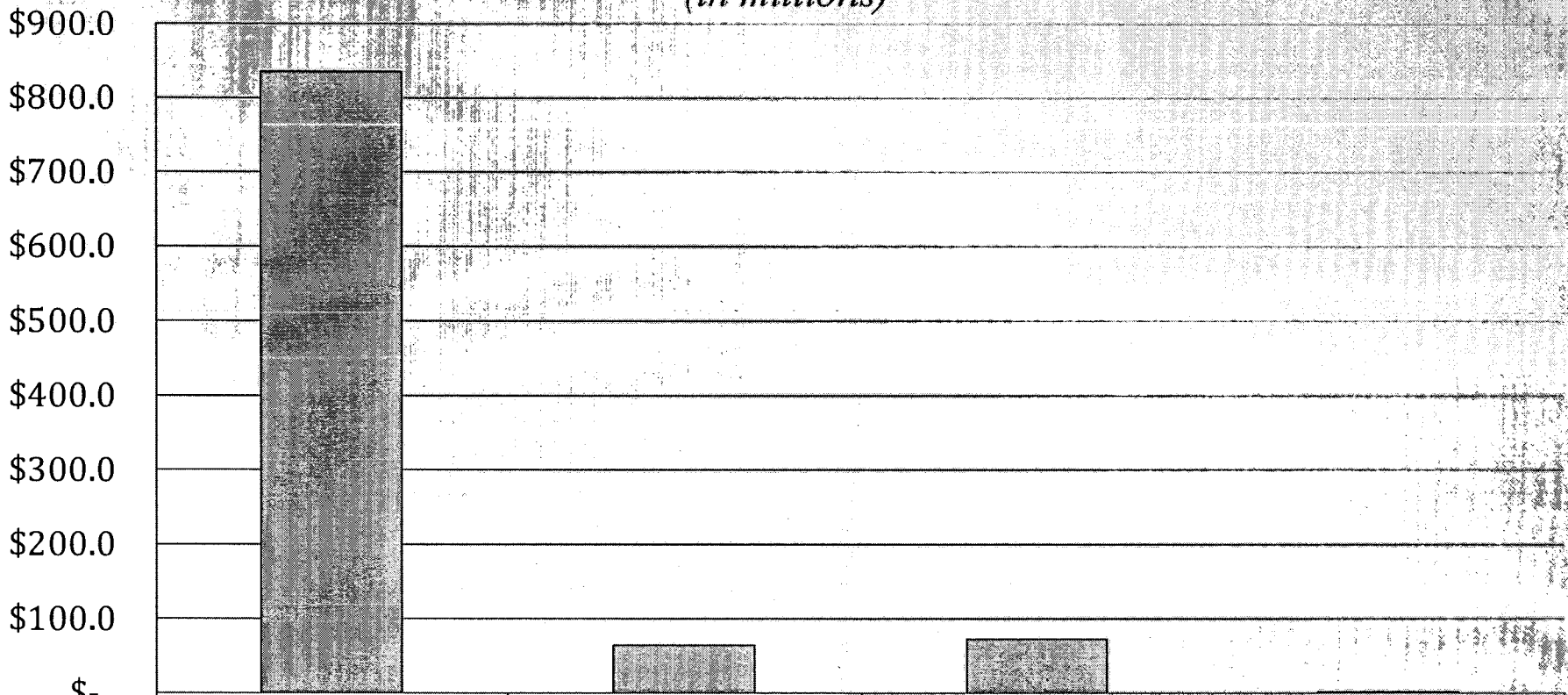


* Note: WRC, PARTF, and NHTF receive no General Fund appropriations

Overview: Environmental Funding

FY 2010-11 Certified - Total Funds*

(in millions)



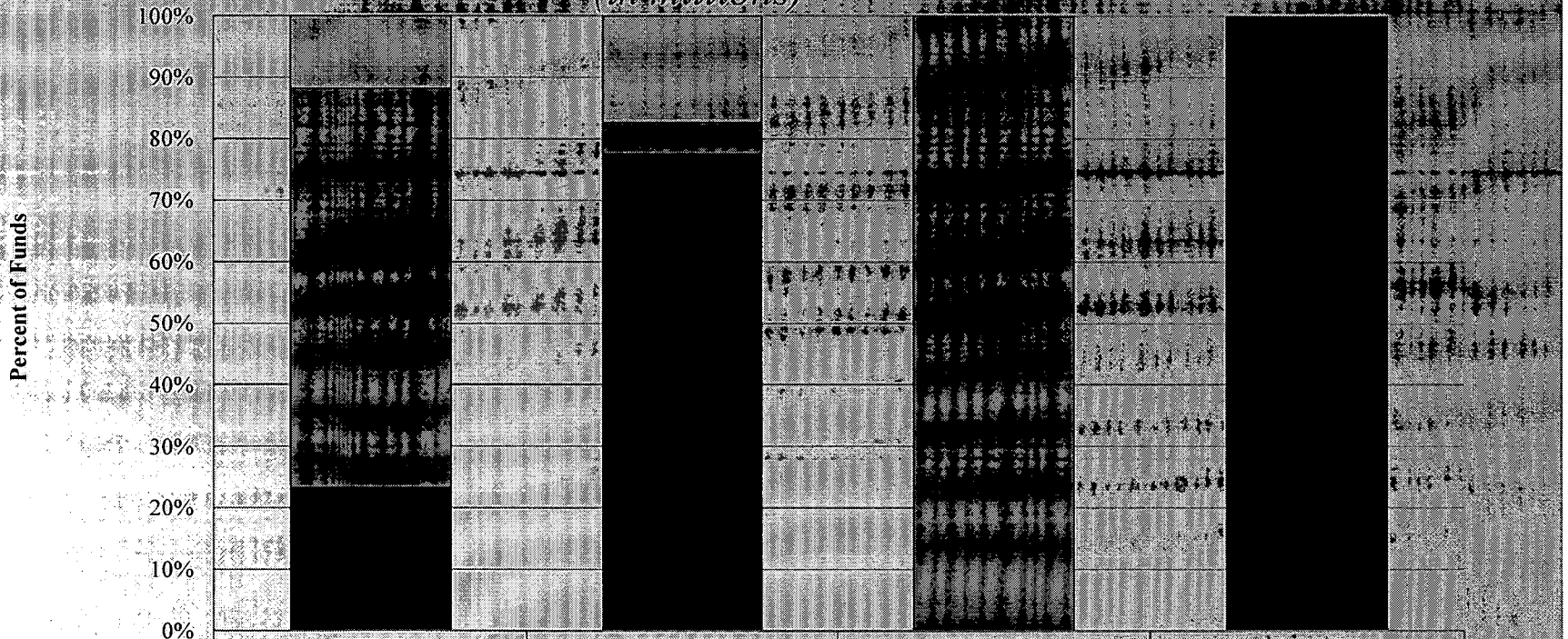
	DENR	CWMTF	WRC	ADFPTF
Total	$835.9	$64.5	$72.3	$2.0

* Excludes most inter-/ intra-governmental transfers to avoid double counting

Overview: Environmental Funding

FY 2010-11 Certified - Total Funds by Source*

(in millions)



	DENR	CWMTF	WRC**	ADFPTF
Fund Balance	$99.0	$11.2	$-	$-
All Other Receipts	$542.3	$3.3	$72.3	$-
General Fund	$194.6	$50.0	$-	$2.0

* Excludes most inter-/ intra-governmental transfers to avoid double counting

** WRC receives no General Fund; it collects a direct transfer from the state sales tax (shown as other revenue)

DENR: Fast Facts

- FY 2010-11 General Fund Appropriation:
  $194,625,330

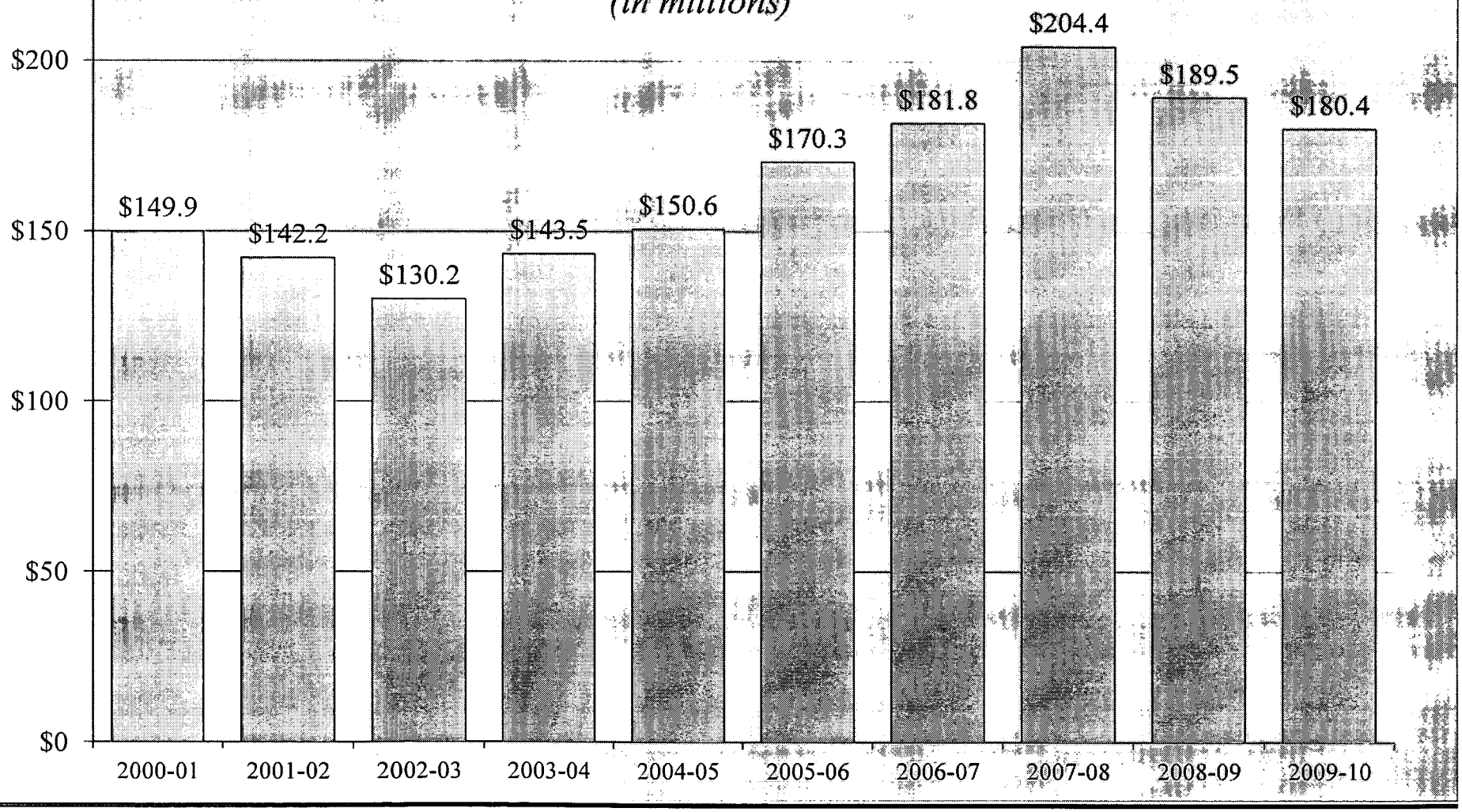


- 3,908 employees
  - 2,239 General Fund
  - 1,689 Receipt-Supported
- Central Raleigh office + 7 regional offices
- Wide range of issues
  - Zoo, Aquariums, Parks, Forests, Air Quality, Water & Wastewater Management, Coastal Management, Marine Fisheries, Radiation Protection, Recycling Programs

DENR: Actual General Fund Appropriation

FY 2000-01 to FY 2009-10

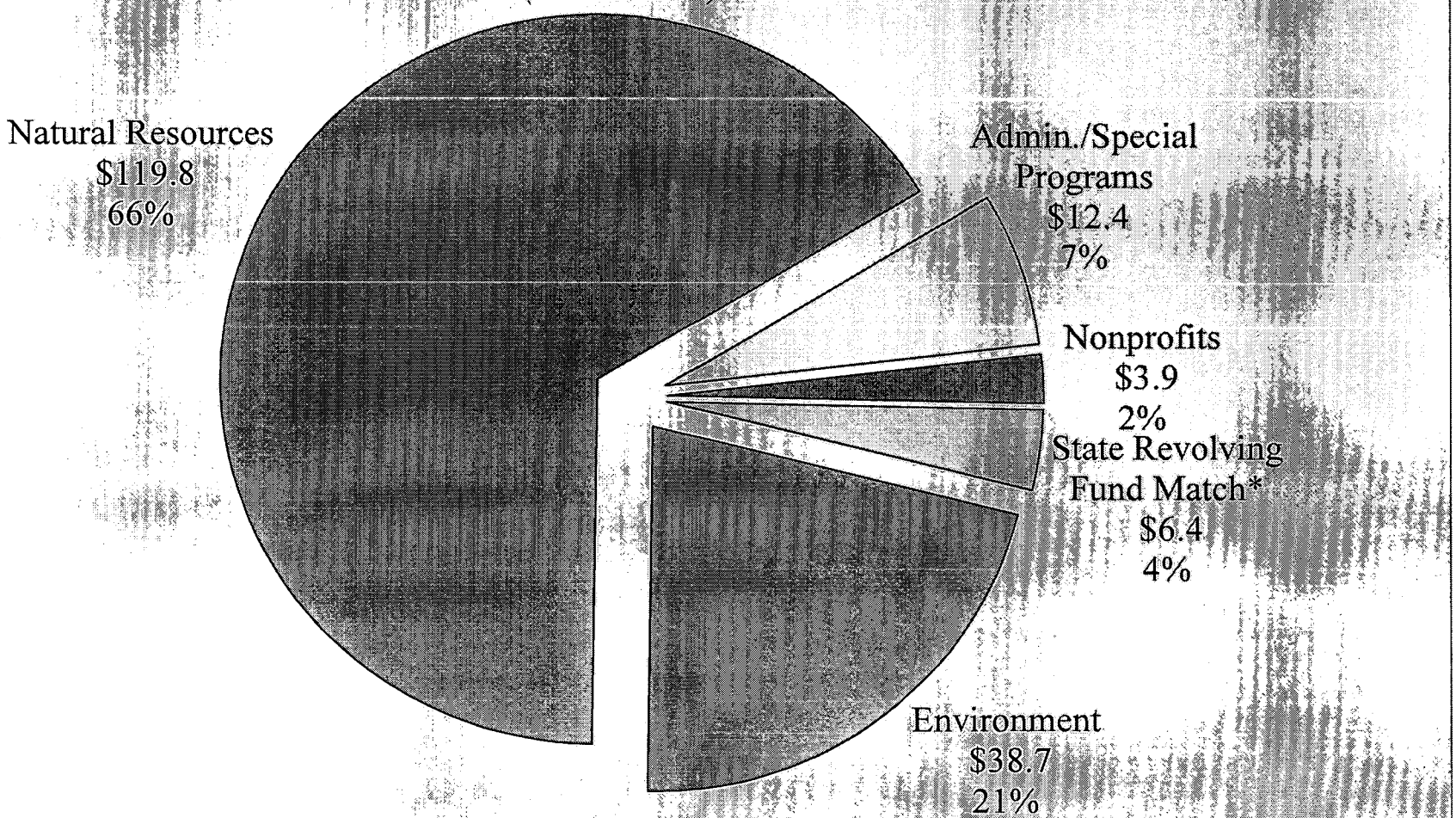
(in millions)



DENR: Use of General Fund

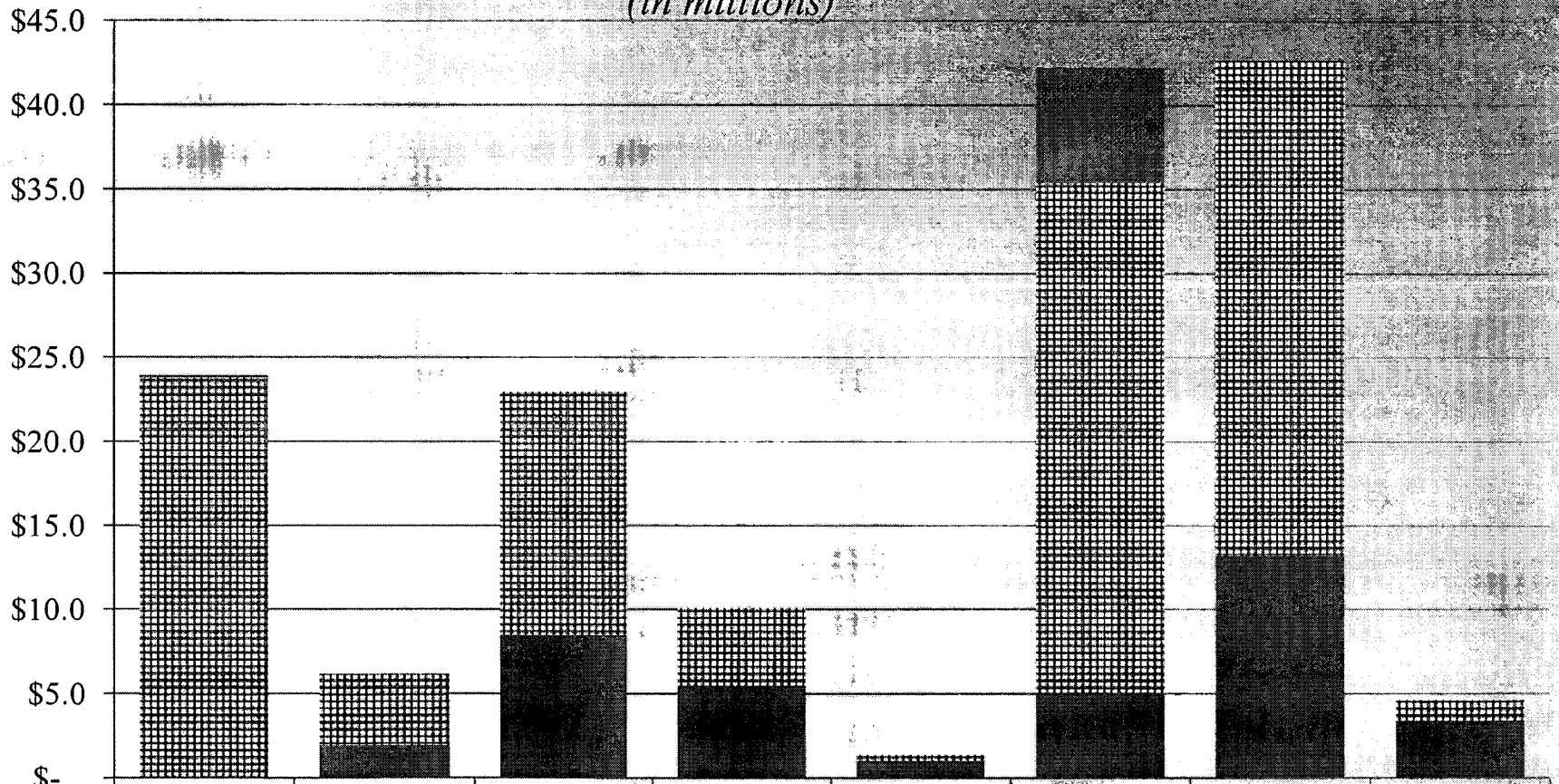
FY 2009-10

(in millions)



Environment: FY 2009-10 Expenditures

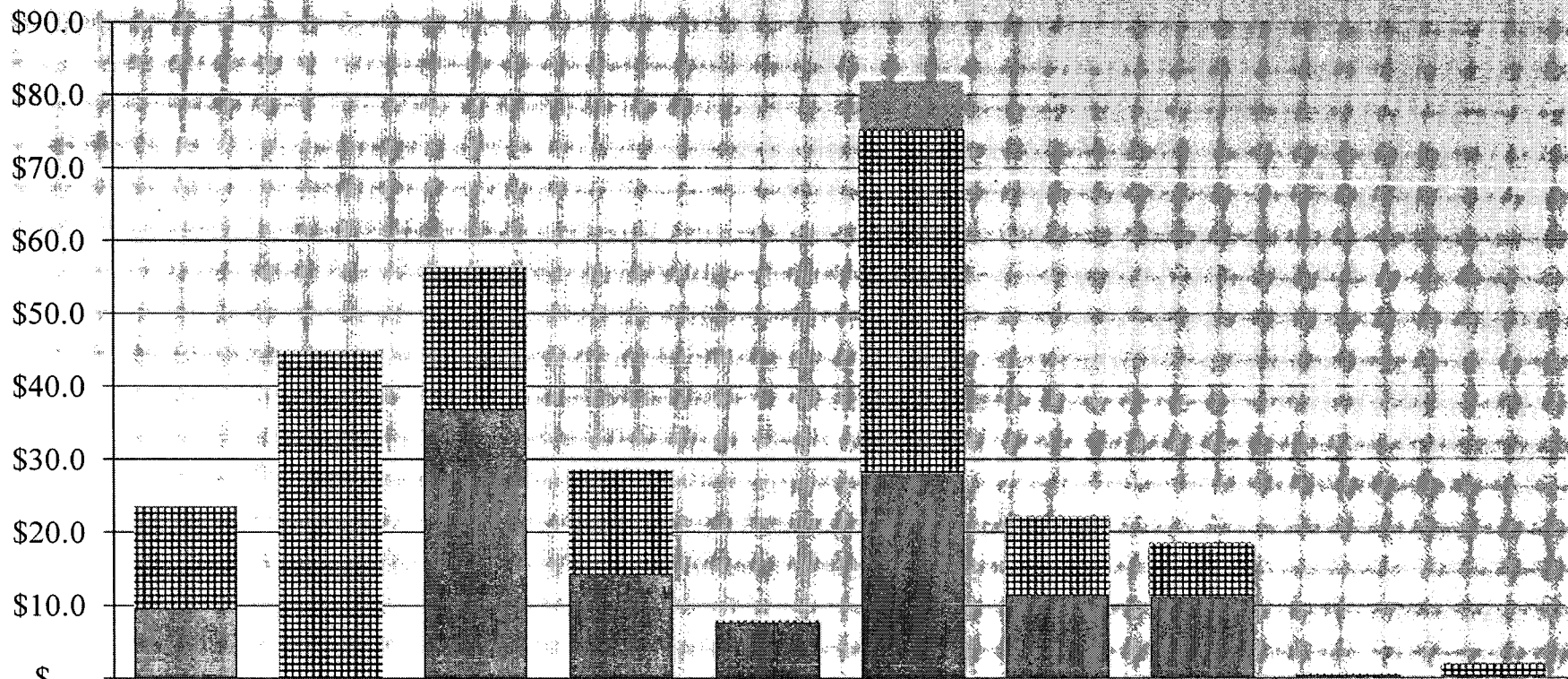
(in millions)



	Air Quality	Coastal Mgmt	Env. Health	Land Resources	Pollution Prevent.*	Waste Mgmt	Water Quality	Water Resources
Cash Balance	$0.2	$-	$-	$-	$-	$6.8	$-	$-
Receipts	$23.8	$4.3	$14.5	$4.7	$0.4	$30.3	$29.5	$1.2
Appropriation	$-	$1.9	$8.5	$5.5	$1.0	$5.1	$13.2	$3.4

Nat. Res.: FY 2009-10 Expenditures

(in millions)



	Aquariums	EEP	Forest Resources	Marine Fisheries	Museum of Natural Sciences	Parks and Recreation	Soil & Water Conserv.	Zoo	Enviro. Edu.*	Nat. Res. Planning *
Cash Balance	$0.2	$-	$-	$-	$-	$6.8	$-	$-		
Receipts	$13.9	$44.8	$19.5	$14.3	$0.2	$47.0	$10.7	$7.3	$0.1	$1.4
Appropriation	$9.5	$-	$36.9	$14.3	$7.7	$28.1	$11.4	$11.1	$0.5	$0.4

DENR: Special Funds

- DENR has over 180 special funds
- Separate from General Fund – special funds may build up cash balances & not revert
- Total cash balance of all DENR special funds (1/31/09):
  $670,732,711
- *Examples:*
  - Leaking Underground Storage Tanks (LUST)
  - Scrap Tire Fund
  - Aquariums Special Fund
  - Marine Resources Endowment Fund

NER Special Funds & Budget Shortfall

- In FY 2008-09, the Governor transferred $170 million from NER special funds to balance the budget shortfall:

– Wetlands Trust Fund	$1.2 million
– Dry Cleaning Solvent Fund	$6.3 million
– Scrap Tire Fund	$7.4 million
– Various other DENR Funds	$12.1 million
– Parks & Recreation Trust Fund	$6.0 million
– Natural Heritage Trust Fund	$2.8 million
– Clean Water Management Trust Fund	$115 million
– Tobacco Trust Fund	$19.2 million

DENR: FY 2009-11 Major Reductions

- **Special Funds**
  - Use of Cash Balance by Governor and General Assembly
  - Closure of over 30 Special Funds
- **Fee Increases**
  - Radiation Protection, State Parks, Food & Lodging, Hazardous Waste
- **Vacant positions**
  - Eliminated nearly 70 positions in FY 2009-10
- **Programmatic Changes**
  - Eliminated programs
  - Consolidations

DENR: FY 2010-11 Consolidations

Pollution Prevention & Environmental Assistance
+ Customer Service Center
→ **Division of Environmental Assistance & Outreach**

Conservation & Community Affairs
+ Natural Resource Planning & Conservation
→ **Office of Conservation, Planning, & Community Affairs**

Environmental Education
+ Public Affairs
→ **Office of Environmental Education & Public Affairs**

Presentation Overview

1. Overview of Environmental Programs
   a. Department of Environment & Natural Resources
   b. Conservation Trust Funds
   c. Wildlife Resources

2. Governor's Actions

Clean Water Management Trust Fund (CWMTF)

General Fund Appropriation	
FY 2009-10	$50 million
FY 2008-09	$100 million
FY 2007-08	$100 million
FY 2006-07	$100 million
FY 2005-06	$100 million

- General Fund appropriation
- G.S. sets appropriation of $100 million annually
- FY 2008-09 : Governor transferred $115 million to balance the budget

Natural Heritage Trust Fund (NHTF)

	Deed Stamp Tax	License Plate Fees
FY 2009-10	$8.6 million	$4.1 million
FY 2008-09	$9 million	$4.3 million
FY 2007-08	$15.2 million	$3.2 million
FY 2006-07	$18.6 million	$3.7 million
FY 2005-06	$18.8 million	$3.9 million

- Funding Sources:
  - 25% of deed stamp tax
  - Fees from specialty license plates ($5/plate)
  - Interest earnings
- FY 2008-09 : Governor – $2.8 million to balance the budget

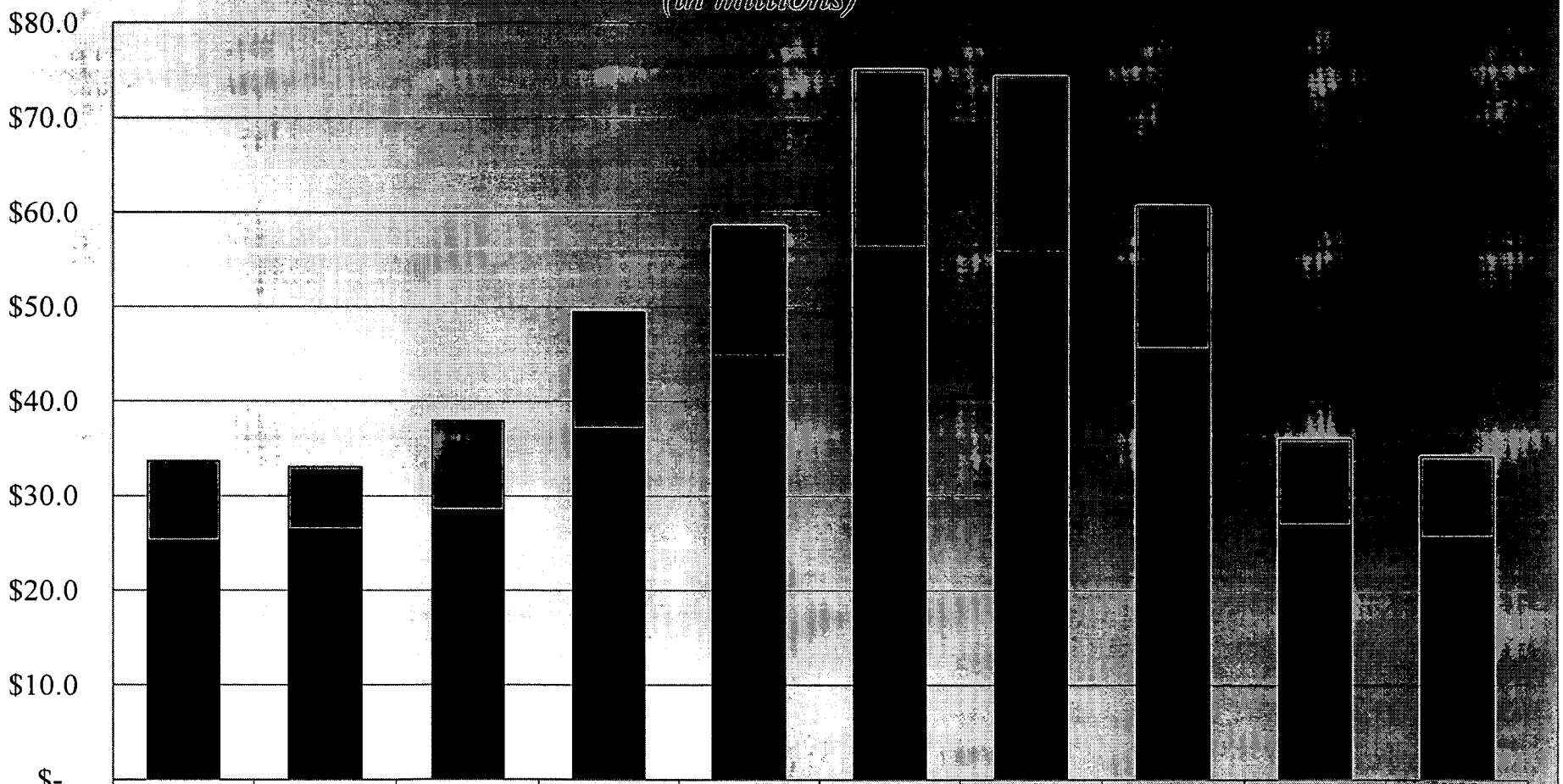
Parks and Recreation Trust Fund (PARTF)

	Deed Stamp Tax	License Plate Fees
FY 2009-10	$25.7 million	$1.4 million
FY 2008-09	$27 million	$1.4 million
FY 2007-08	$45.6 million	$1.4 million
FY 2006-07	$55.8 million	$1.3 million
FY 2005-06	$56.3 million	$1.4 million

- Funding Sources:
  - 75% of deed stamp tax
  - Fees from specialty license plates ($5/plate)
  - Interest earnings
- FY 2008-09 : Governor – $6 million to balance the budget

Deed Stamp Tax Receipts

(in millions)



	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
NHTF	$8.4	$6.6	$9.5	$12.4	$13.8	$18.8	$18.6	$15.2	$9.0	$8.6
PARTF	$25.2	$26.5	$28.5	$37.1	$44.7	$56.3	$55.8	$45.6	$27.0	$25.7

Agriculture Development & Farmland Preservation Trust Fund (ADFPTF)

General Fund Appropriation	
FY 2009-10	$2 million R
FY 2008-09	$4 million NR
FY 2007-08	$8 million NR
FY 2006-07	-
FY 2005-06	$50,000 NR

- Funded by the General Fund
- FY 2010-11: $2 million R (first year of recurring funding)

Presentation Overview

1. Overview of Environmental Programs
   a. Department of Environment & Natural Resources
   b. Conservation Trust Funds
   c. Wildlife Resources Commission

2. Governor's Actions

Wildlife Resources Commission

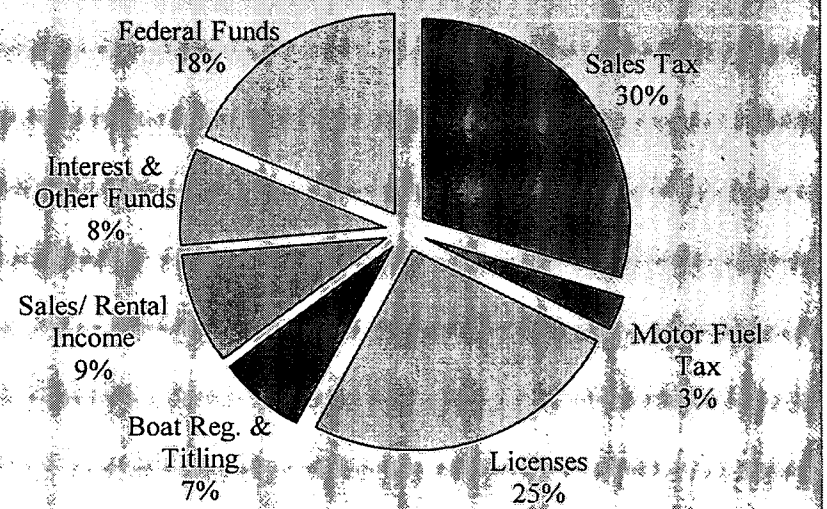
- Created in 1947
- 680+ employees
- Six divisions
- Wildlife Endowment Fund

Budget Actions

FY 2009-11: Transfer capped at $21.5 million
FY 2010-11: Provide $3 million to General Fund

Sales Tax Allocation	
FY 09-10	$21.5 million
FY 08-09	$24.7 million
FY 07-08	$23.7 million
FY 06-07	$21.9 million
FY 05-06	$18.6 million

Source of Funds
FY 2010-11



Presentation Overview

1. Overview of Environmental Programs
   a. Department of Environment & Natural Resources
   b. Conservation Trust Funds
   c. Wildlife Resources

2. Governor's Actions

FY 2010-11 Governor's Actions

- Required 3.5% holdback for Cabinet agencies
  - August 24th – 1% management flexibility reduction
  - December 17th – additional 2.5% reduction

- Requested 5-10-15% budget reduction options
  - DENR submitted 5-10-15% options
  - WRC, Trust Funds did not submit options (receipt-supported)
  - Ag. did not submit proposed reduction options

DENR: Reduction Overview

Reduction Percent	Reduction Amount
5%	~ $9.7 million
10%	~ $19.4 million
15%	~ $29.2 million

- Divisions with proposed cuts of over $1 million:
  - Aquariums
  - Environmental Health
  - Forest Resources
  - Marine Fisheries
  - Nonprofits
  - Parks & Recreation
  - Water Quality
  - Zoo

DENR: Proposed Reductions

- Use of grants and receipts
  - Ex: Use Aquarium gate admissions to fund operations
- Major program reductions
  - Close 2 Educational State Forests
  - Close 2 State Parks
  - Close certain State Parks on Tuesdays, Wednesdays, Thursdays
  - Contract out Zoo gift shop operations

DENR: Proposed Eliminations

- Programs proposed for elimination
  - WaDE (DEH)
  - Well Drillers (DWQ)
  - On-Site Quality Assurance Program (DEH)
  - Oyster Sanctuary Program (DMF)
  - Working Lands Program (CPCA)
  - Animal Waste Management Systems Pilot Program (SWC)
- Pass-through funding for elimination
  - Grassroots Science Museum Collaborative
  - Partnership for the Sounds

Contact Information

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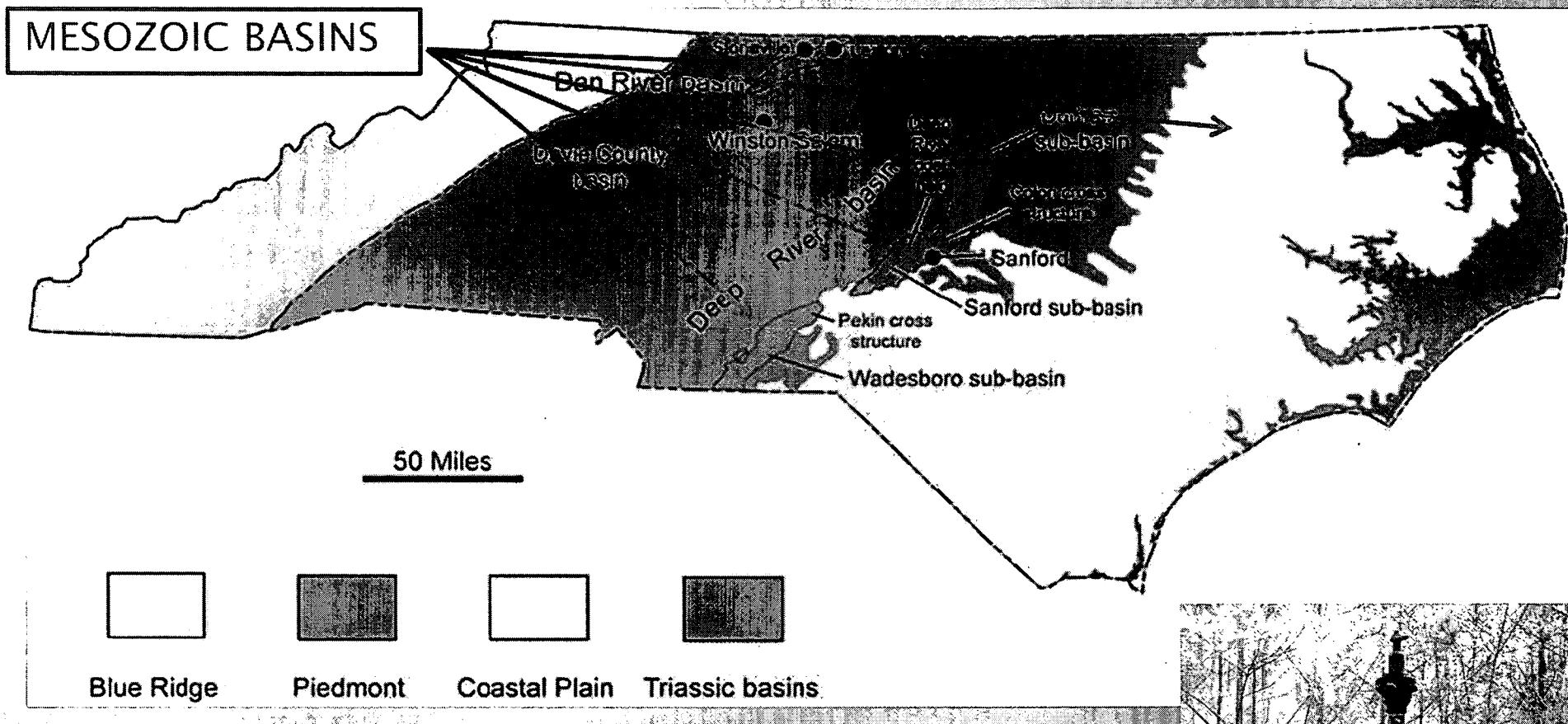
DENR- Environment, Labor, Rural Center

Lanier McRee – Lanier.McRee@ncleg.net

DENR- Natural Resources, Agriculture, WRC, Tobacco, CWMTF

Kristin Walker – Kristin.Walker@ncleg.net

Commerce, Boards & Commissions, State-Aid



NORTH CAROLINA'S SHALE GAS POTENTIAL: WHO KNEW?

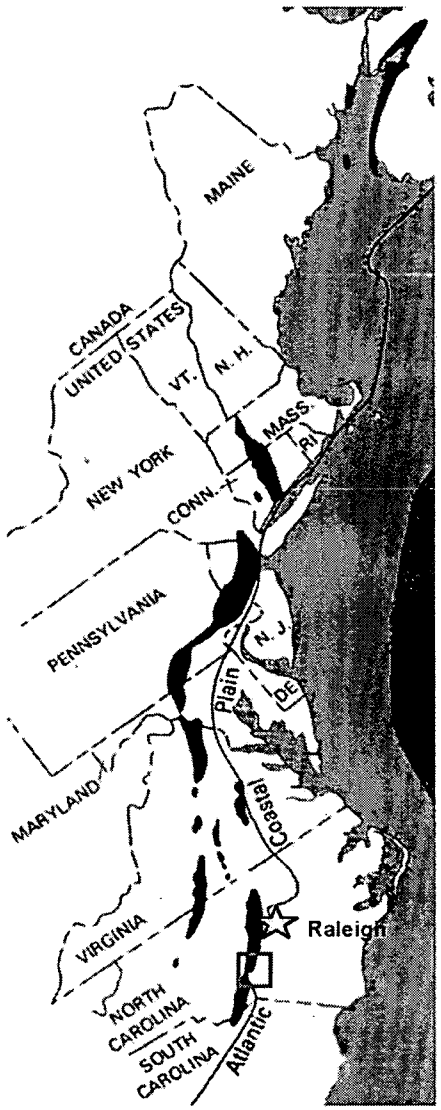
North Carolina Geological Survey

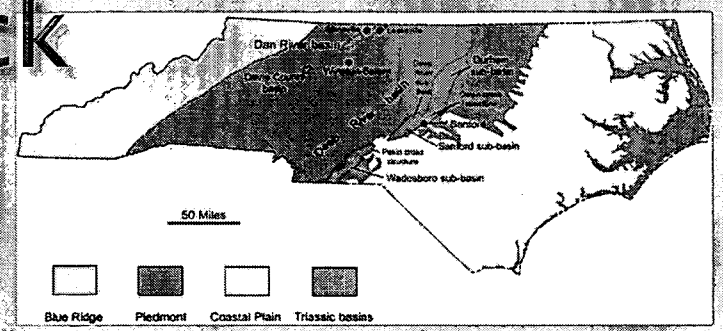


Role of N.C. Geological Survey

- The 1823 organic act which created the North Carolina Geological Survey (NCGS) tasked us to examine, describe and map the geology, geologic hazards, and mineral resources of North Carolina and publish these findings in NCGS reports and maps.
- Provide unbiased, impartial and relevant technical information to all parties.
- The NCGS is the custodian of rock cores, cuttings, geophysical logs, etc.

Basin and Source Rock Overview



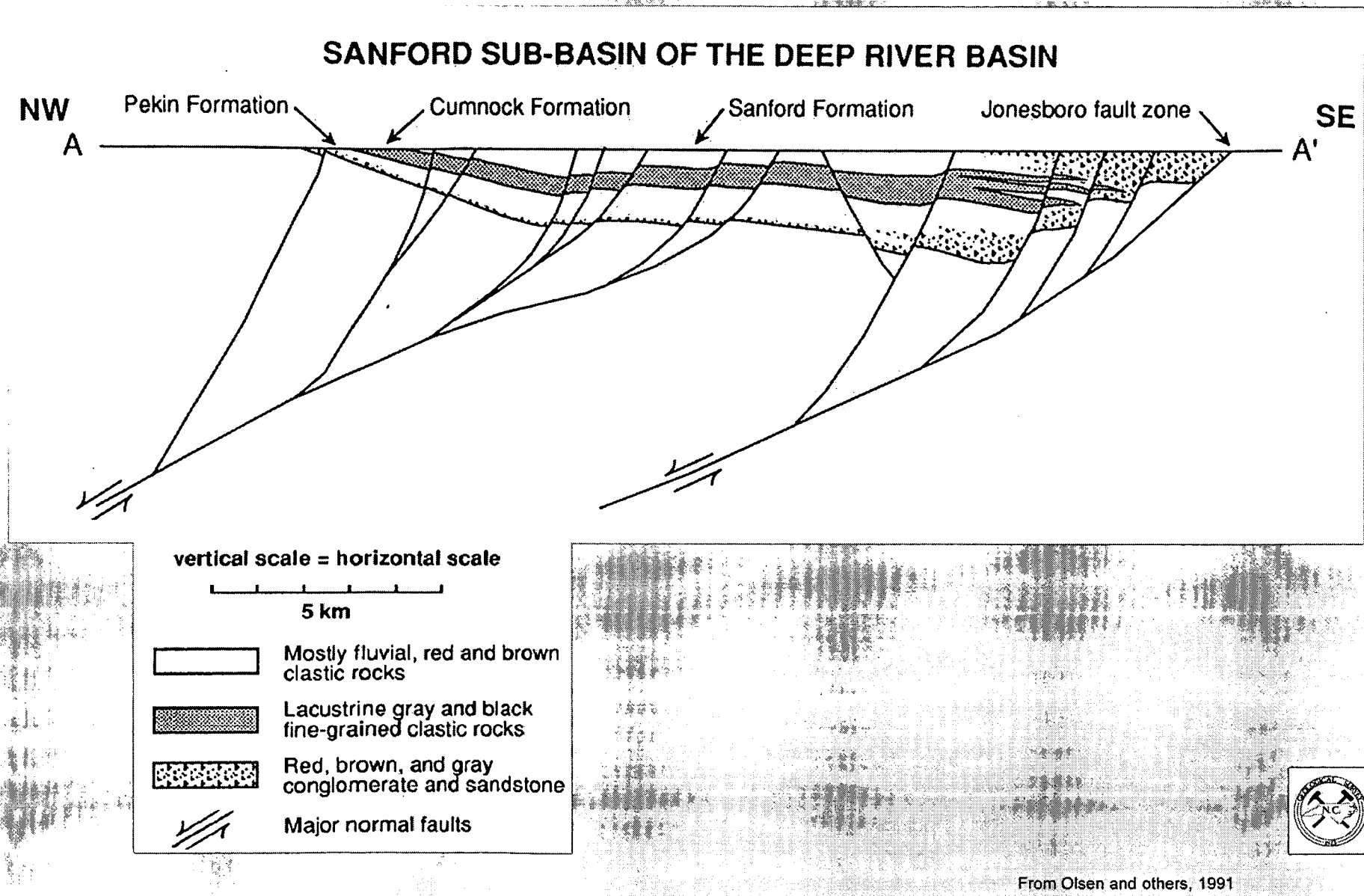


Map showing the distribution of Mesozoic basins in North Carolina (from Reid and Milici, 2008).

- Deep River Basin – 150-mile-long northeast trending half-graben (rift basin) with a steeply dipping eastern border fault.
- ~7,000 feet of Triassic strata.
- Lake deposits similar to African rift valley lakes.
- ~59,000+ acre prospective area.
- Total petroleum system containing:
  - Source rock
  - Seal
  - Traps / reservoir
- Relatively untested exploration area.



Generalized cross section



From Olsen and others, 1991

Time line – Deep River Basin

- 1775 – Revolutionary War era, coal exploration for iron and munitions.
- 1861 – 1873 – Civil war and post war coal production.
- 1920's – 1940's – Underground coal mining, exploration; 1925 coal mine explosion (killed 53 workers).
- 1980's – 1990's – Petroleum drilling (preceded seismic – vertical holes).
- 2008 – Organic geochemical data published (*Reid and Milici – USGS OFR 2008-1108*). NCGS recognizes thick section of organic shale as a potential gas resource.
- 2009 NCGS publishes 'Natural Gas and Oil in North Carolina' Information Circular 36.
- 2009 NCGS Open-File Report 2009-01 (Shale Gas Potential...).
- 2009 – 2010 Presentations made to interested industry, governmental and environmental groups.
- 2010 North Carolina Geological Survey / U.S. Geological Survey Resource assessment (currently in progress).

Why now? – 1

Compilation of data

- Years of scholarship locating and compiling data.
- Conversion of paper data to digital
- Organic geochemistry data collected and interpreted for first time.
- Interpreted seismic lines which were shot AFTER initial wells drilled.
- Natural gas focus was shallow coalbed methane, not shale gas.

Why now? – 2

New emphasis

- Exploration industry largely unaware of basins in North Carolina.
- USGS emphasis on Mesozoic basin energy systems.
- The thick organic-rich shale section previously not considered to be of interest.
- Similarity to other unconventional organic shale resources.

New techniques / interpretation

- New gas chemistry and gas quality data
- Use of LiDAR to delineate geologic structures.
- Recognition of a total petroleum system.

Current technology

- Current technology allows "shale gas – natural gas" to be recovered from shale formations with a high degree of organic content.
- Modern exploration and gas production technology, such as horizontal drilling and hydraulic–fracturing, has enabled the extraction of shale gas in similar formations in other states.
- Unconventional energy resource.

USGS/NCGS Resource Assessment

- *Current focus:* Rigorous, science-based assessment of technically recoverable natural gas.
- *Methodology.* Numerical, conservative approach to be computed by the U.S. Geological Survey.
- *Completion date*: Spring, 2011.
- *Publication date*: sometime in 2011.

Open Issues

- 1945 Oil and Gas Conservation Act
  - Article 27, G.S. 113-378 through 113-[illegible]
- Horizontal drilling: Not currently allowed
  - Based on the Oil and Gas Conservation Act
- Hydraulic-fracturing: Not currently allowed
  - 15A NCAC 02C. 0213

Permitting / Bond / Royalties

- Permit fees: Currently $50/well.
- Bonding: Currently $5,000/well.
- State royalties: $0.005/mcf (1,000 ft^3).

From: Oil and Gas Conservation Act of 1945

Environmental Issues

- Water resources for drilling and hydraulic fracturing.
- Impacts on groundwater (quantity and quality).
- Solid and hazardous waste from drilling.
- Waste water from drilling and hydraulic fracturing.
- Erosion and sedimentation control from construction of well pads, access roads and pipelines.

Summary

- 59,000+ prospective acres for exploration.
- Rift basin with depth of 7,000+ feet.
- 800-foot thick organic shale section with two coal beds.
- Gas prone section based on chemistry and maturation and two shut-in wells with pressure.
- Centrally located in state.
- Environmental and permitting issues.

North Carolina's Water Allocation Study

Report on Phase II to the Environmental Review Commission

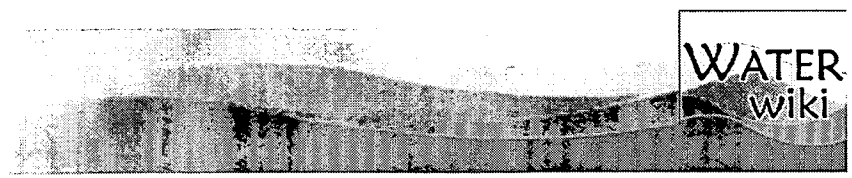
By the Principal Investigators
Richard Whisnant, UNC School of Government and Bill Holman, Duke Nicholas Institute
January 18, 2011



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The University of North Carolina at Chapel Hill



Nicholas Institute
for Environmental Policy Solutions



Water use is still rising…

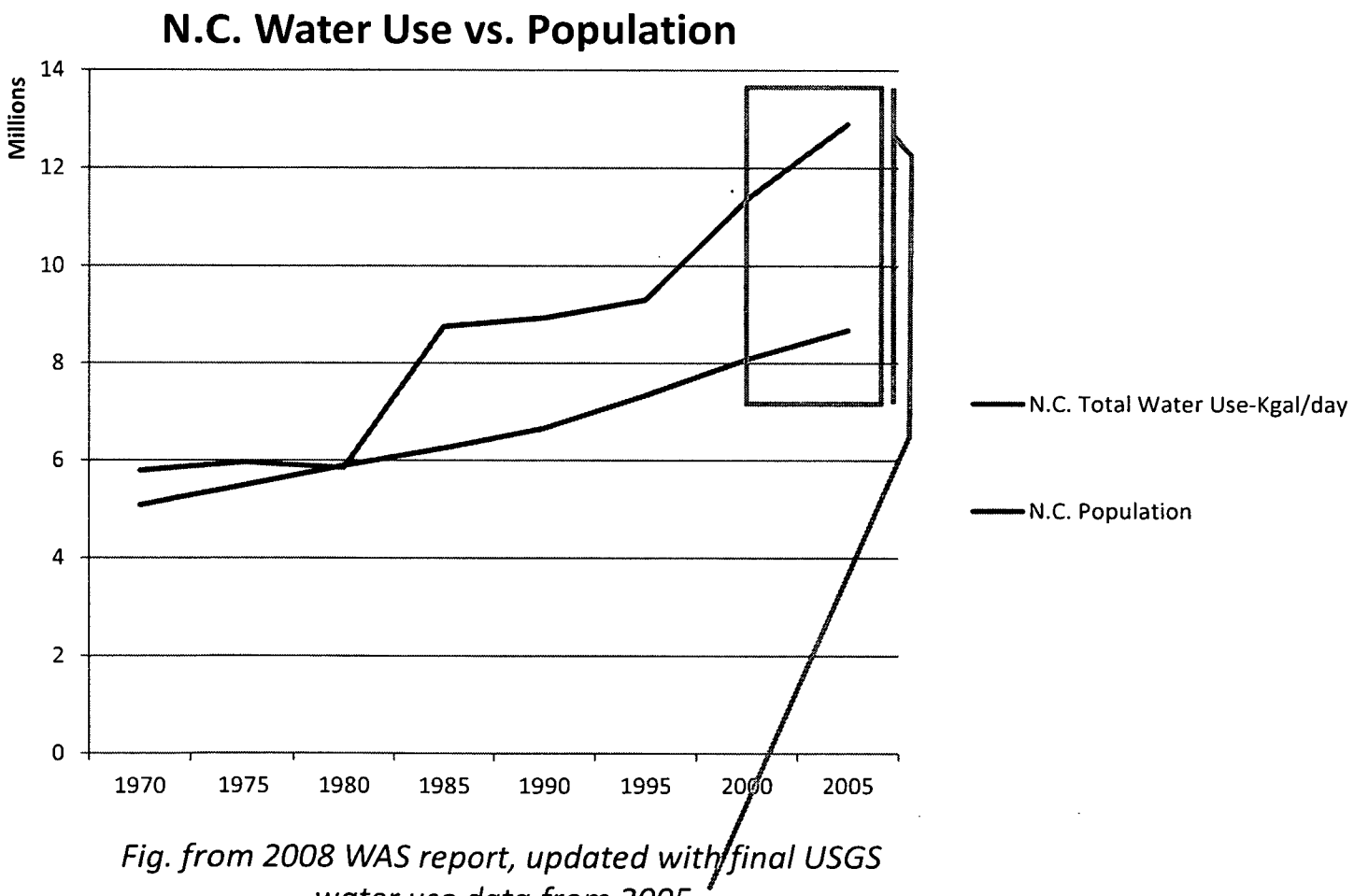


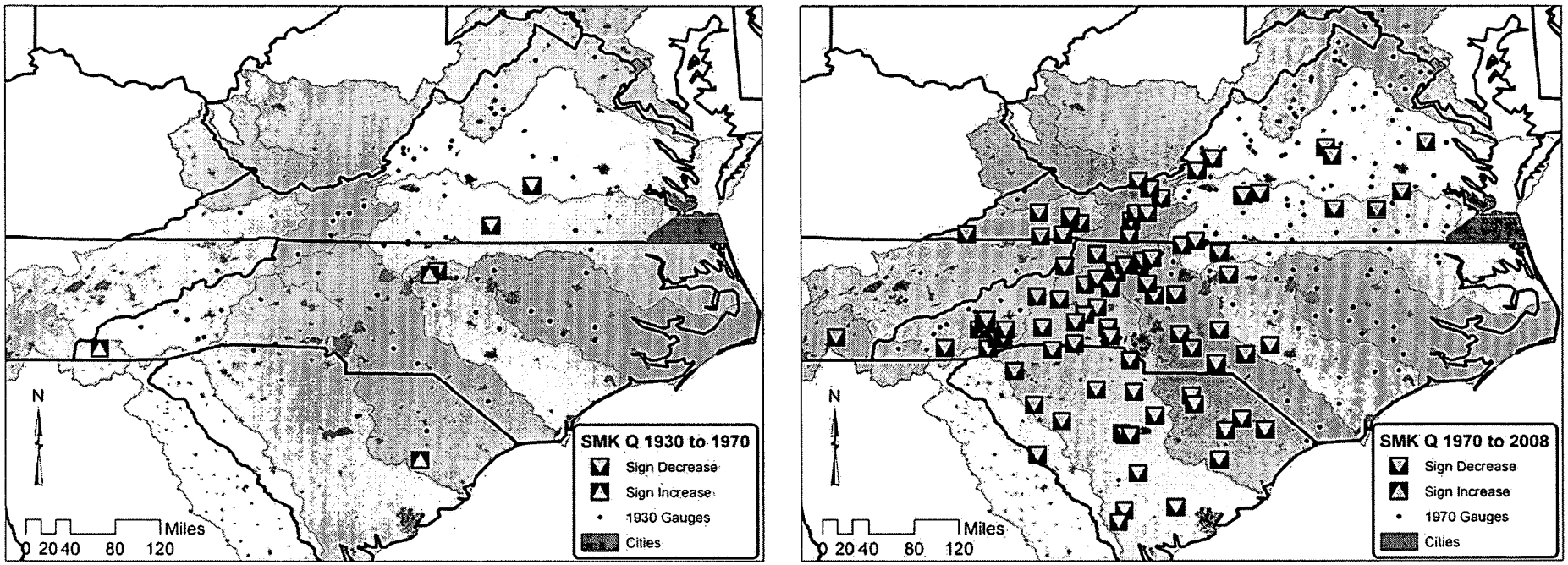
Fig. from 2008 WAS report, updated with final USGS water use data from 2005

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WATER wiki

...while supply is ***finite***
and quite possibly *shrinking*



Changes in regional streamflow, 1930-1970 and 1970-2008. Seasonal Mann Kendall statistic; statistically significant (inflated P<0.05 - more conservative) gauges have a direction, otherwise gauges are represented as a dot. Patterson, Lauren (UNC-CH, ongoing dissertation research 2010).

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WATER wiki

Some good planning is underway…

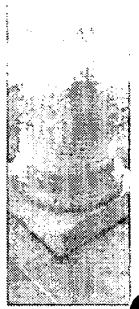
- 2010 river basin modeling legislation gave direction to DENR on the approach to models
- Basinwide and regional water resource planning efforts are springing up where there is a ***driver***
  - Catawba water management group
  - Greenville metro area
  - Lumber River, through the COG
  - Jordan Lake Partnership in the Triangle
  - French Broad WR Study Committee
  - ….

...and where these efforts take a hard look, they find ***future shortages***

- **Catawba Use Study**: *likely shortages in 30-40 years*
- **Neuse basin modeling results**: *"six systems may not be able to withdraw the amounts of water needed to fully meet their demands in the 2050 demand scenario [assuming historical flows continue]" (also not considering ecological flow needs or drought response plans)*

Water conflict will continue to rise…

- Legislature will see this in part as requests to tinker with the interbasin transfer law and other assorted statutes
- Courts will continue to take cases with unpredictable results
- DENR will, we hope, continue to try to integrate water programs.
- But where is the driver for integration, reform and action?

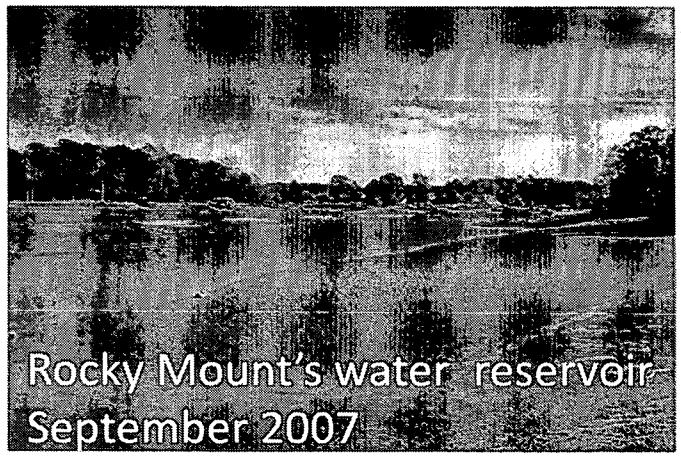


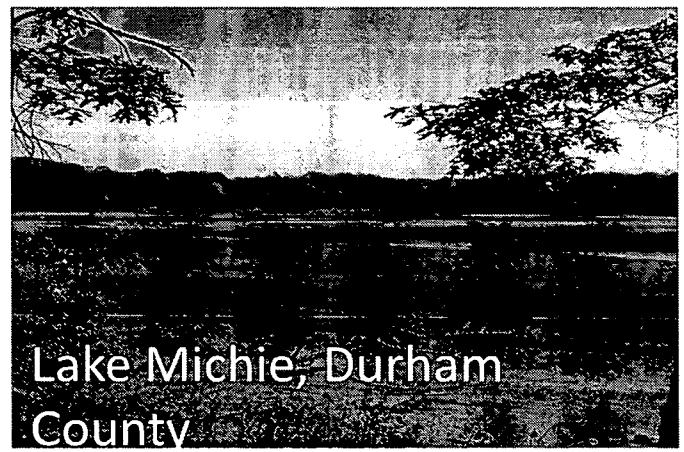
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WATER
wiki

...there will be less secure future water supplies in NC and more of this ...


Rocky Mount's water reservoir
September 2007


Lake Michie, Durham County


Little River, Durham County
October 2007


Falls Lake
December 2007

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WATER wiki

...without further legislative action.

- We have studied water management systems elsewhere in the region, the country and the world.
- North Carolina still has a chance to be not just a place of ample precipitation and minimal regulatory intrusion, but also a place where water supplies are maximally secure.
- But this will not happen spontaneously.



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WATER
wiki

We recommend....

- Continue to work with stakeholders on policy goals and water withdrawal permitting
- Enact a moratorium on water withdrawals for development of shale gas until hydrologic models show no harm to existing water users
- Continue to fund development of hydrologic models in all river basins

We recommend…

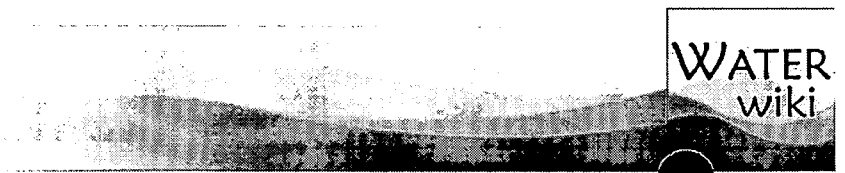
- Request reports on the Upper Neuse and Catawba-Wateree regarding future shortages
- Integrate water quality and quantity planning starting with the Neuse River Plan in 2012 and the Cape Fear River Plan in 2013
- Is consolidation of reporting requirements a priority?



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We also recommend....

- Continue Treasurer & DENR coordinated review of water system finances
- Consider the GA Water Stewardship Act to increase water efficiency
- Phase out use of drinking water and phase in use of stormwater and reclaimed water for irrigation



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And finally we recommend

- Preserve and increase water storage
  - Status of existing dams and reservoirs?
  - Acquire NC's share of Kerr Lake's water supply
  - Evaluate potential for off-line storage (GA)
  - Direct DENR to consider stormwater capture and reuse as part of its stormwater regulatory programs
  - Provide authority to preserve reservoir sites

Conclusions

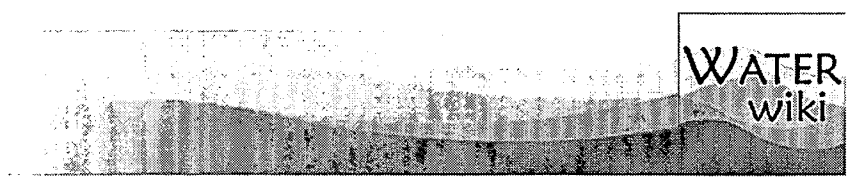
- Full report available via legislative staff and at http://water.unc.edu
- Thank you for the chance to work on this critical set of economic and environmental issues



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North Carolina Department of Environment and Natural Resources

Division of Air Quality

Air Quality Update

Sheila Holman, Director
North Carolina Division of Air Quality

Environmental Review Commission
January 18, 2011

Topics

- Status of EPA Review of National Ambient Air Quality Standards and the Impact on NC
- Status of Federal Boiler Maximum Achievable Control Technology (MACT) Rule
- NC's Greenhouse Gas (GHG) Permitting Rule
- Status of Titan Air Quality Permit
- Status of TVA Litigation

North Carolina Department of Environment and Natural Resources

Division of Air Quality

National Ambient Air Quality Reviews

Ongoing as of January 13, 2011

MILESTONE	POLLUTANT						
	Ozone	Fine Particles (PM)	NO_2 Primary	SO_2 Primary	NO_2 & SO_2 Secondary	Carbon Monoxide (CO)	Lead (Pb)
Notice of Proposed Rulemaking	Jan 6, 2010	Feb 2011	Jun 26, 2009	Nov 16, 2009	Jul 12, 2011	Jan 28, 2011	Nov 2013
Notice of Final Rulemaking	Jul 31, 2011	Oct 2011	Jan 22, 2010	Jun 2, 2010	Mar 20, 2012	Aug 12, 2011	Sept 2014

NOTES:

Underlined dates indicate court-ordered or settlement agreement deadlines.

Shaded cells indicate actions that have already occurred.

History of the Ozone Standards

- One hour standard of 0.08 parts per million (ppm) set in 1971
- One hour standard of 0.12 ppm set in 1979
- Eight-hour standard of 0.08 ppm set in 1997
- Eight-hour standard of 0.075 ppm set in 2008
- Primary standard = Secondary Standard

EPA's Reconsideration of the Ozone Standards

- Sept. 16, 2009 – EPA announced it would reconsider the 2008 ozone standards (primary and secondary) of 0.075 ppm
- 2008 ozone standards were not as protective as recommended by EPA's panel of science advisors, the Clean Air Scientific Advisory Committee (CASAC)

EPA's Reconsideration of the Ozone Standards

- CASAC recommended a range of 0.060-0.070 ppm for the primary (public health) standard, and a separate vegetation exposure type level for the secondary or welfare based standard
- Note, 0.075 ppm = 75 parts per billion (ppb)

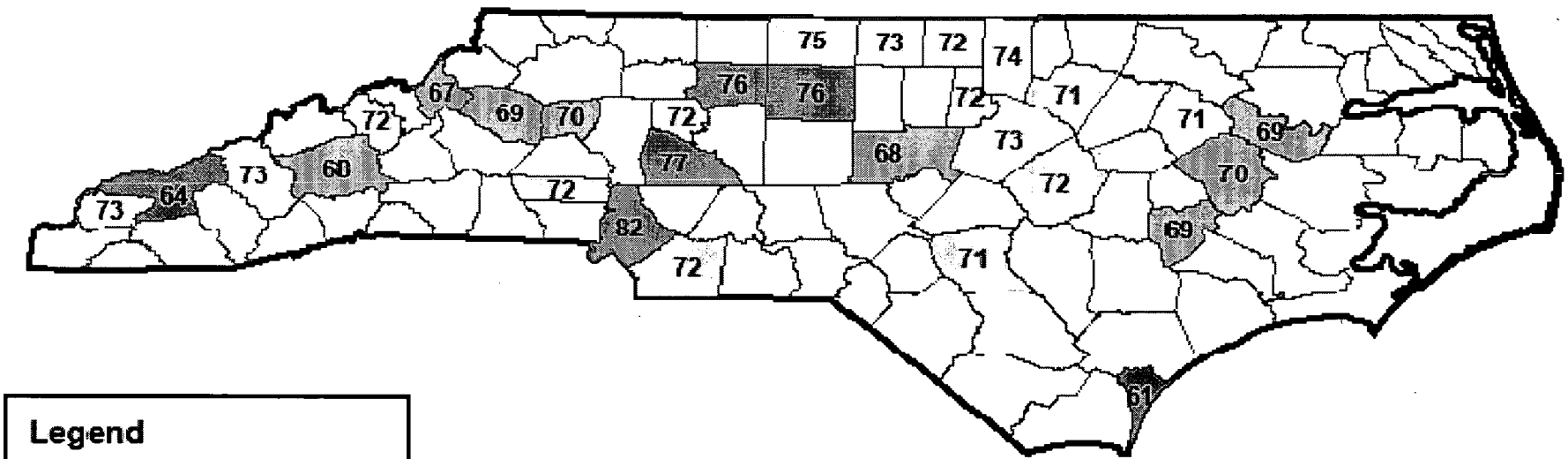
Ozone Proposal Delayed

- EPA Administrator Lisa Jackson announced a delay in the final issuance of the 8-hour ozone standard until no later than July 31, 2011.
- She will "ask CASAC for further interpretation of the epidemiological and clinical studies they used to make their [60-70 ppb] recommendation. To ensure EPA's decision is grounded in the best science, EPA will review the input CASAC provides before the new standard is selected."

Schedule

- December 2010 – EPA Announced a Delay to Allow for Clarification of Issues with CASAC
- July 2011 – Final Reconsidered Ozone Standards
- July 2012- July 2013 - Final Boundary Designations
- 3 Years After Designations – State Implementation Plans (SIPs) Due

Current 3-Year Ozone Design Values
(Maximum Value per County)



Legend

Ozone Design Values

2008-2010*

- < 66ppb
- 66 - 70ppb
- 71 - 75ppb
- 76 - 84ppb
- > 84ppb

NCDENR - DAQ
Attainment Planning
Map Created
10/12/2010 (GMB)

Sulfur Dioxide (SO_2)

June 2010 - New scientific studies provide stronger evidence for link between short-term SO_2 exposures, ranging from 5 minutes to 24 hours, and adverse respiratory outcomes.

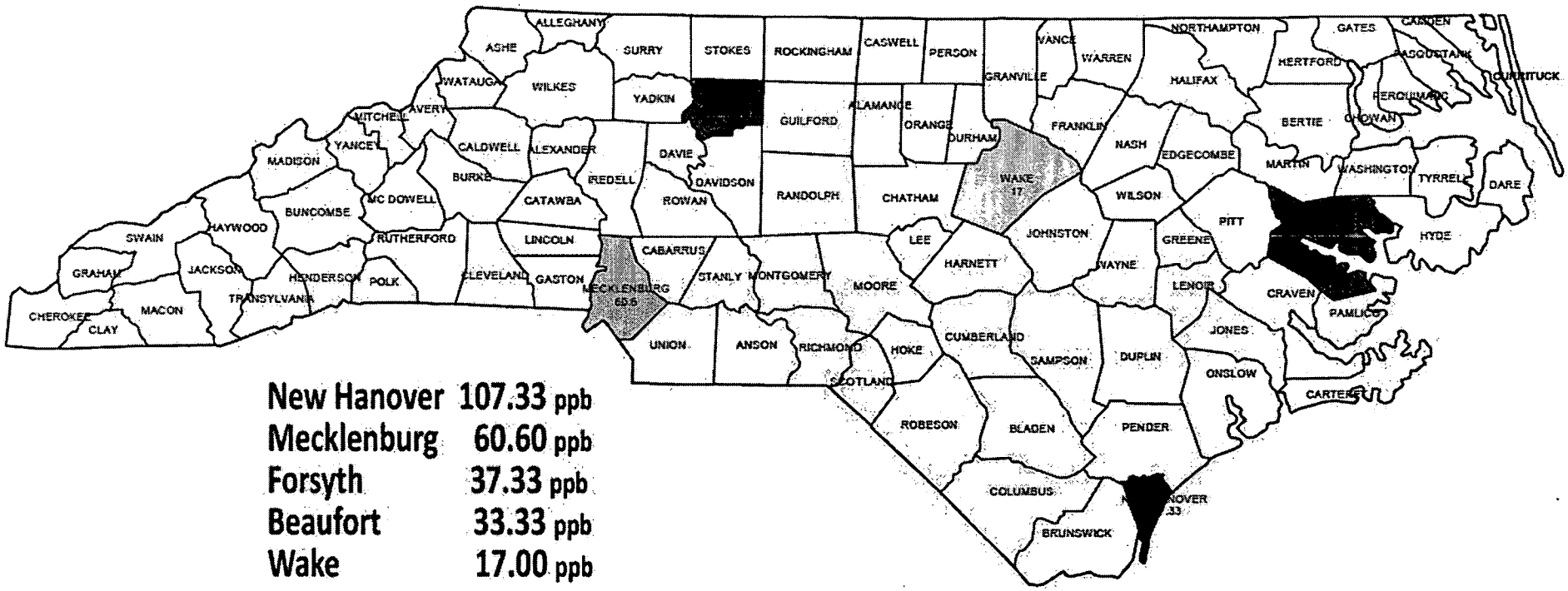
USEPA Revoked

- **Annual standard = 30 parts per billion (ppb)**
- **24-hr standard = 140 ppb**

USEPA Set New 1-hr standard = 75 ppb

- **3-year average of the annual 99th percentile of 1-hour daily max concentrations**

SO2 99th Percentile, 2007-2009



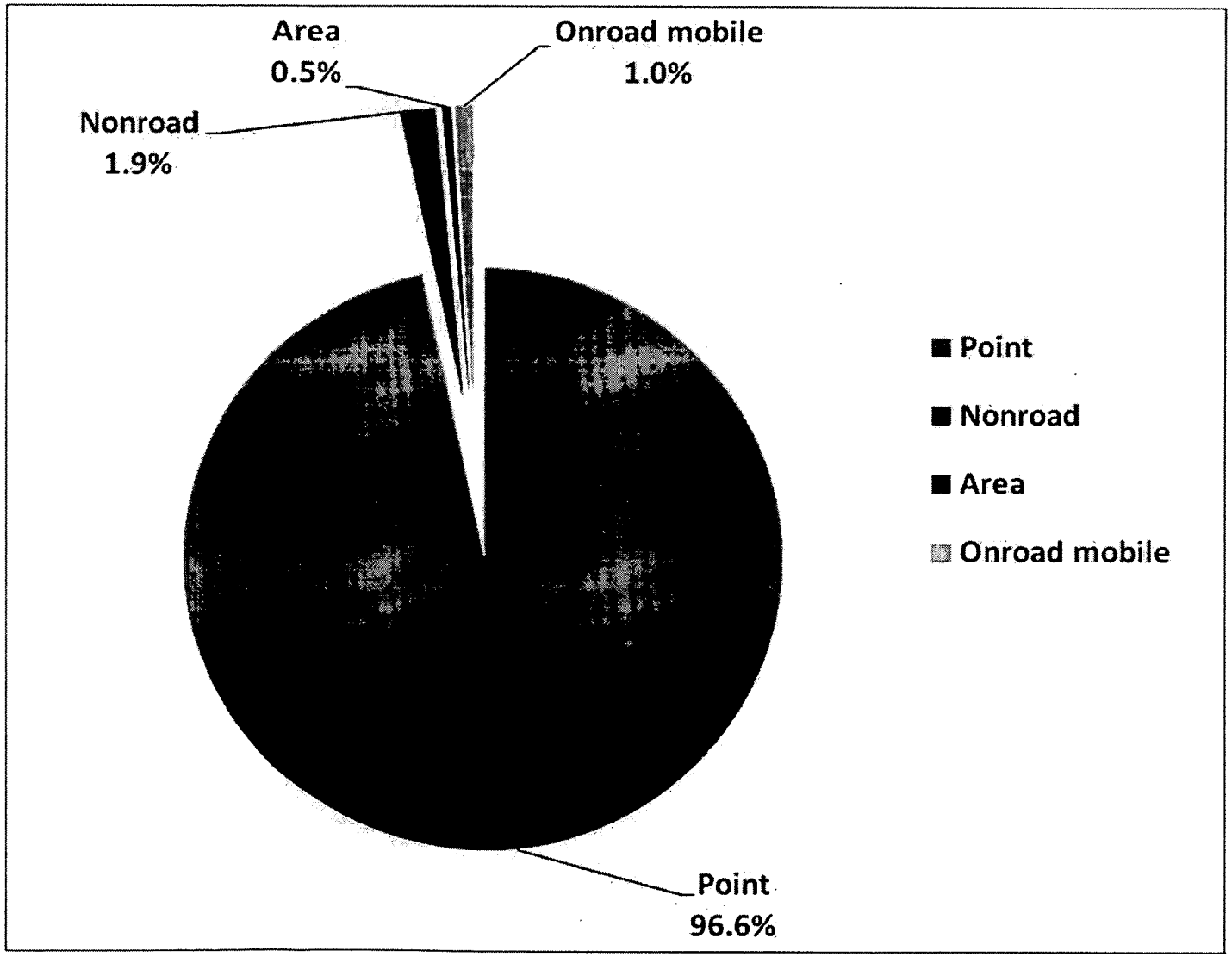
New Hanover 107.33 ppb
Mecklenburg 60.60 ppb
Forsyth 37.33 ppb
Beaufort 33.33 ppb
Wake 17.00 ppb

>100 PPB
75 to 100 PPB
50 to 75 PPB
25 to 50 PPB
0 to 25 PPB

New SO2 standard = 75 ppb

NC DENR
DAQ/Statistical Services
using TIBCO Spotfire S+(R)
Mon Oct 11 17:03:29 EDT 2010

2009 SO2 Emissions Inventory
New Hanover, Brunswick, Pender Counties



Federal Boiler MACT Rule

- Rule first promulgated in 2004
- DC Circuit Court vacated the rule in 2007
- EPA proposed new rule on June 4, 2010
- EPA estimates more than 250 boilers in NC affected by proposed rule
- Significant concerns raised about proposed standards
- EPA recently asked Court for 18-month extension to finish rulemaking

Section 112(j) MACT Hammer

- Question of whether MACT "Hammer" applies in light of vacatur of standards
- Federal court decision in NC recognized that vacatur of MACT standards does trigger "hammer" provisions
- Attorney General's Office policy memo
- DAQ implementation of 112(j) permitting process

History of Titan Application

- 2/26/2008 - Initial application received
- 9/11/2009 – Preliminary Determination and Draft permit sent to notice
- 11/30/2009 - Two public hearings held at the Cape Fear Community College
- 4/30/2010 - Judge issues injunction preventing DENR from taking further action on Titan application on the basis that SEPA applies
- 12/27/2010 – Judge signed order dissolving the DENR injunction

Next Steps

- Application to be update to address revised regulations:
  - Federal Maximum Achievable Control Technology (MACT) Standard (revised by EPA 11/8/2010)
    - Includes more stringent mercury standard
  - Federal New Source Performance Standard for Cement plants (revised by EPA on 11/8/2010)
  - PSD for Greenhouse Gasses (Safe Harbor Request)
    - Newly applicable January 2, 2011
  - New Hourly National Ambient Air Quality Standards
    - Sulfur Dioxide
    - Nitrogen Dioxide

Next Steps

- Verify Compliance with New Standards
- Prepare revised Preliminary Determination
- Post Public Notice
- Public Hearing
- Final Agency Decision

Greenhouse Gas (GHG) Permitting

- In April 2007, the US Supreme Court ruled that GHG emissions are air pollutants covered by the Clean Air Act.
- In response to that ruling and litigation from environmental groups, the EPA issued GHG emissions standards for motor vehicles in June 2010.
- That action also triggered Prevention of Significant Deterioration (PSD) permitting requirements for utilities, industries, businesses and other point sources of GHG emissions.
- In June 2010, the EPA issued the GHG Tailoring Rule to limit the kinds of GHG point sources subject to PSD permitting program.

GHG Permitting

- NC rules covered GHGs automatically based on how "regulated pollutants" are referenced.
- NC began rulemaking to adopt the higher thresholds per the federal tailoring rule.
- EMC adopted the rule at the November 18, 2010 meeting.
- RRC approved rule at December 16, 2010 meeting.
- RRC received 19 letters of objection.
- GHG Tailoring Rule now under legislative review.

Update on TVA Litigation

- On 7/26/10 the US Court of Appeals for the 4th Circuit issued its judgment in favor of TVA.
- In the Court's opinion, the federal Clean Air Act pre-empts a claim by a State of a common law public nuisance against regulated sources in another State.

Update on TVA Litigation

- North Carolina petitioned the 4th Circuit for rehearing, but that petition was denied on 9/21/10.
- On 11/23/10, the US Supreme Court granted North Carolina an extension of time in which to petition for a writ of certiorari. (A petition for writ of certiorari is the usual vehicle by which the Supreme Court reviews matters and is the applicable procedure in this case.)

Update on TVA Litigation

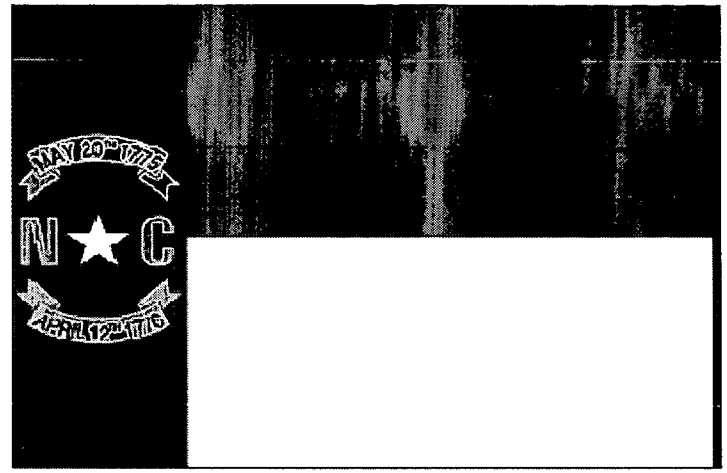
- North Carolina now has until 2/3/11 to file its petition for writ of certiorari.
- There is no deadline by which the Supreme Court must decide whether to hear the case or deny the petition.

Contact Information

Sheila Holman
Director
NC Division of Air Quality
(919) 715-0971

- Visit our web site:
  - http://www.ncair.org

- Sheila.Holman@ncdenr.gov



Division of Water Resources Update

Environmental Review Commission

January 18, 2011

Overview

- Resolution of Supreme Court Lawsuit
- Implementation of SL 2010-143
  - Improve River Basin Modeling
- Update on Coastal Capacity Use Area

Settlement of Supreme Court Lawsuit

- Originally filed by SC in 2007
  - Disputed NC's use of Catawba River water
  - Precipitated by Concord-Kannapolis IBT
- Parties reached a settlement in December 2010
  - NC/SC/Duke Energy/Catawba River Water Supply Proj.
- Dismissed from Supreme Court on December 14
- Catawba-Wateree Bi-State Commission played a pivotal role in negotiating the settlement

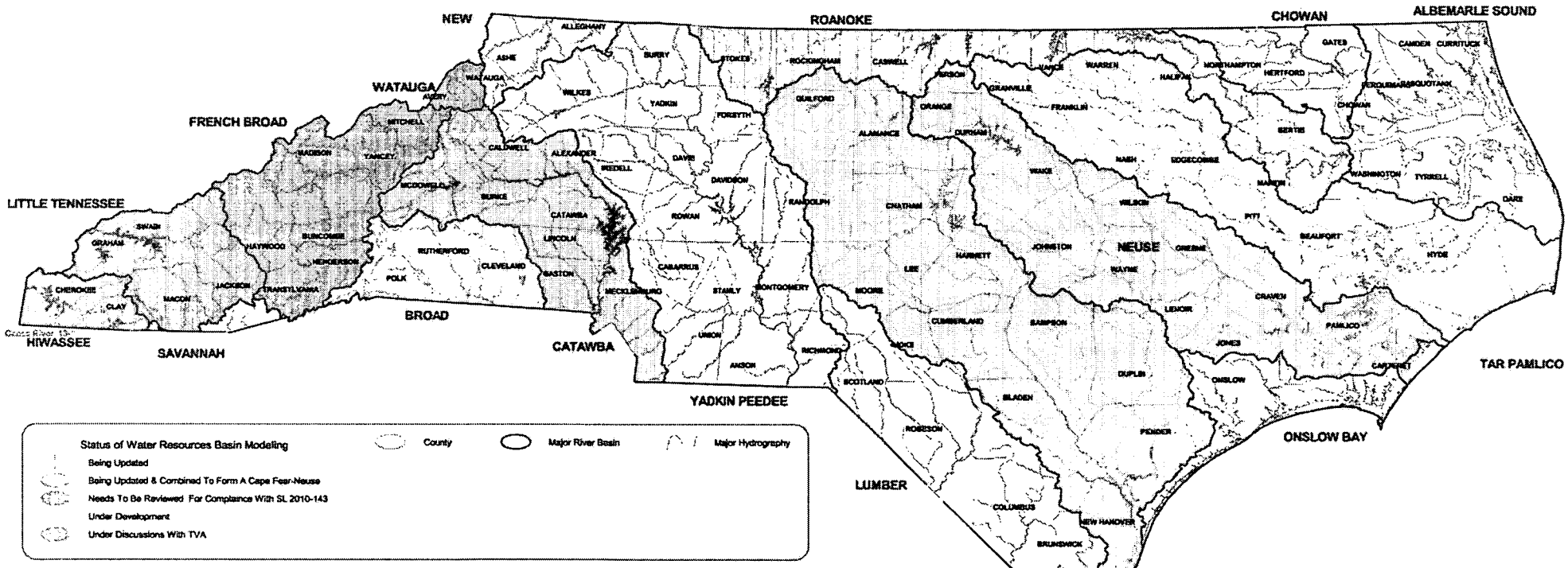
What did NC give up to settle?

- Nothing that it is not already doing
- Agreed to abide by Comprehensive Relicensing Agreement for Duke Energy's FERC license
  - NC already a signatory to this agreement
  - Includes Low Inflow Protocol (LIP) for drought periods
- Agreed to abide by existing statutory requirements for approval & notice of future IBTs in the Catawba
  - New IBT statutory requirements adopted in 2007 & 2008
  - SC must adopt similar measures for their portion of basin
- Agreed to evaluate water supply needs in the Catawba-Wateree Basin every 10 years

Implementation of SL 2010-143

- DENR to develop models for all 17 river basins
  - Mandated incorporation of ecological flows
- Establishment of eco-flows science advisory board
- Required approval of models by EMC

Status of NC Hydrologic Basin Models



1-13-2011

Implementation of SL 2010-143

- Hydrologic Models Completed or Under Development
  - Neuse Model: Completed
  - Cape Fear update/merger of Cape Fear/Neuse into 1 model
  - Roanoke Model: Underway
  - Tar Model: Underway
  - Broad Model: Underway
- Other Modeling Activity
  - Review of the existing Catawba Model w/Catw. WMG
  - Initiate discussions w/TVA about the Tennessee Basin

Implementation of SL 2010-143

- Ecological-Flows Science Advisory Board
  - Established w/membership specified in Bill
  - Facilitated by Natural Resource Leadership Institute of NCSU
  - Process/meetings ongoing
    - Meetings broadcasted over internet
  - Goal is to conclude in 2-3 years

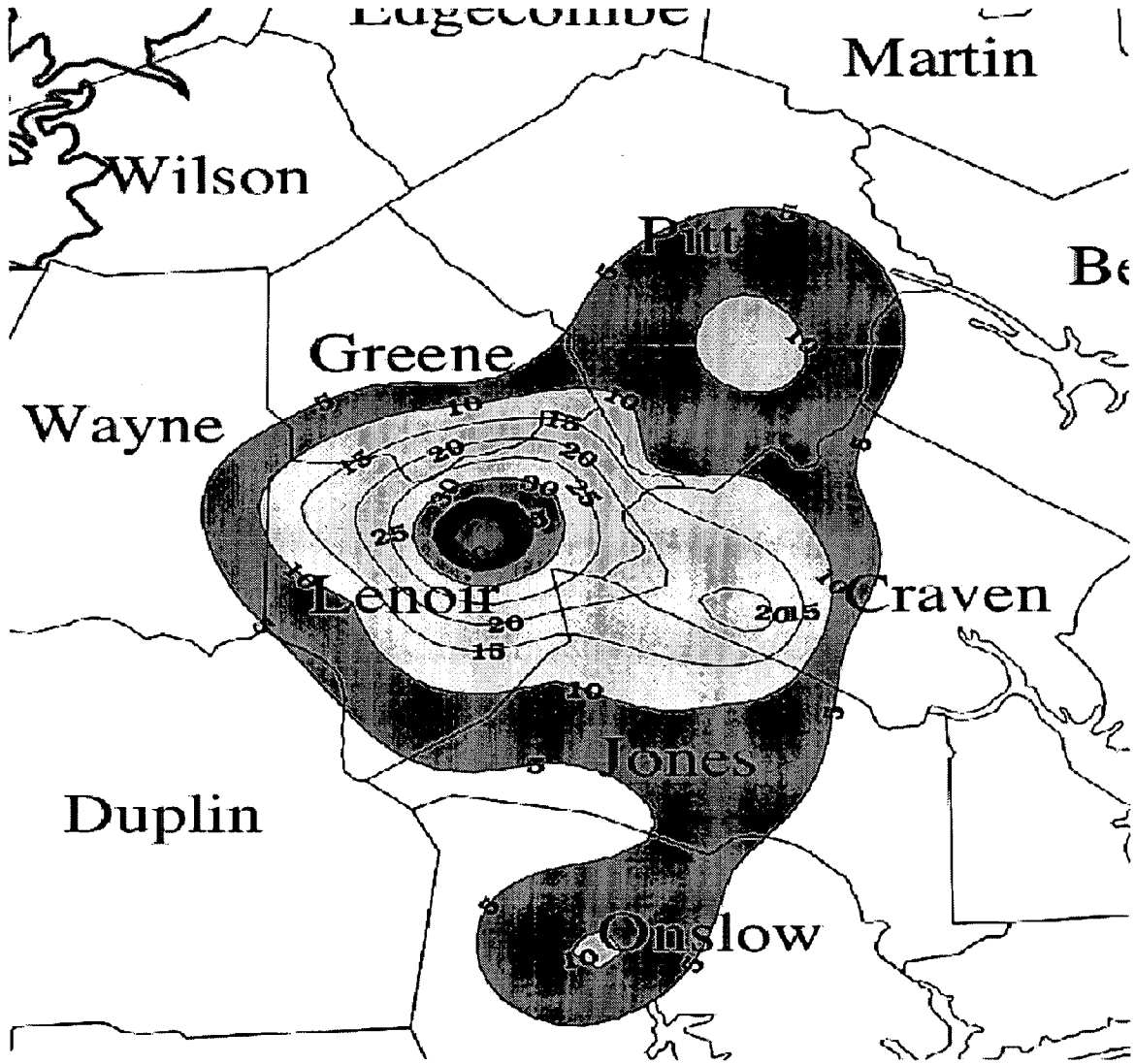
Implementation of SL 2010-143

- Model Approval by EMC
  - EMC Technical Advisory Group established
  - Will oversee and guide model development
  - First model approval process in Fall 2011

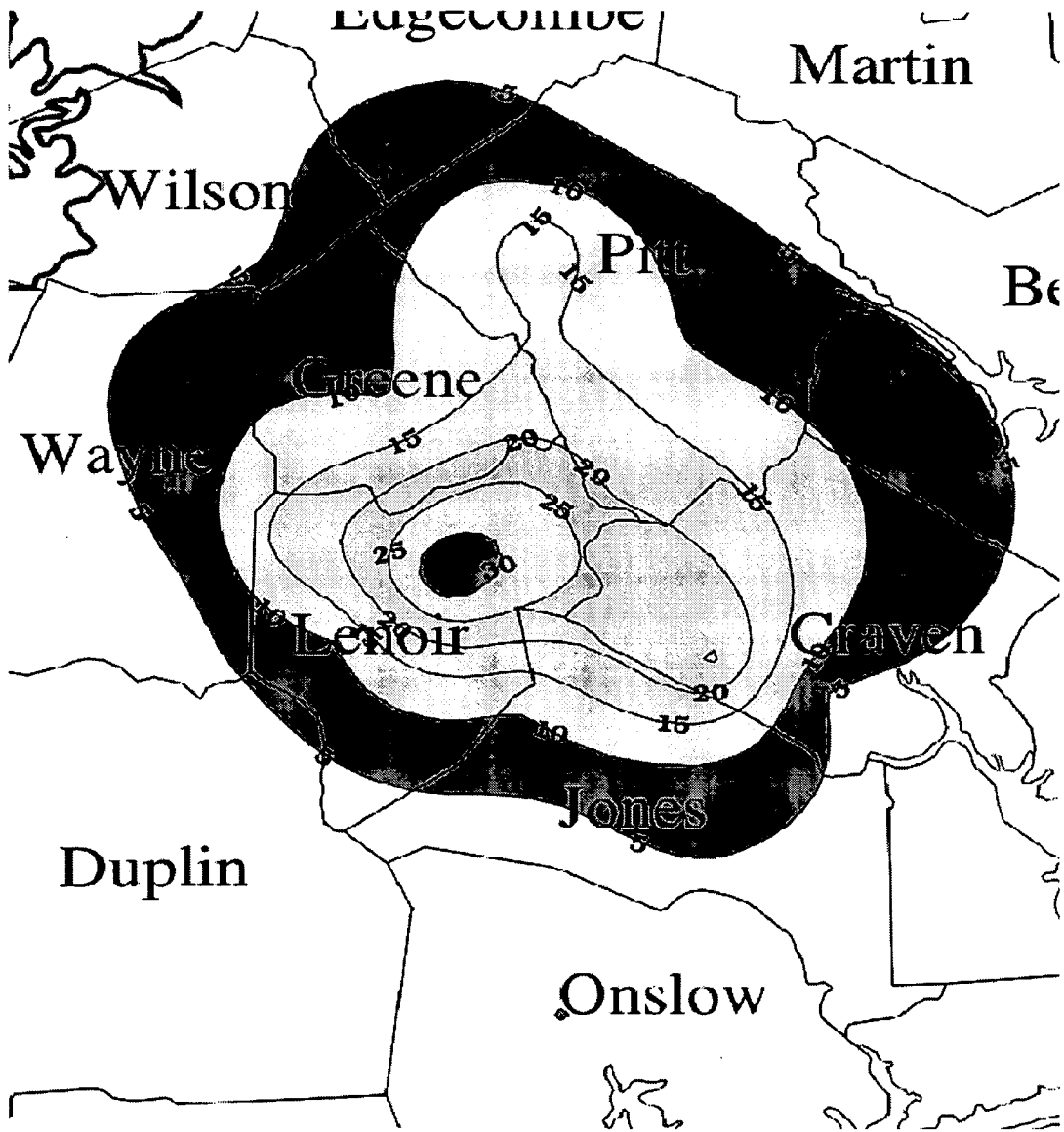
Update on Capacity Use Area

- Continued recovery of confined aquifers
- Approval of Greenville Utilities Comm. IBT request
  - GUC service area will switch to Tar surface water
- Termination of International Paper withdrawal in VA
  - Withdrawal in VA was extracting NC groundwater

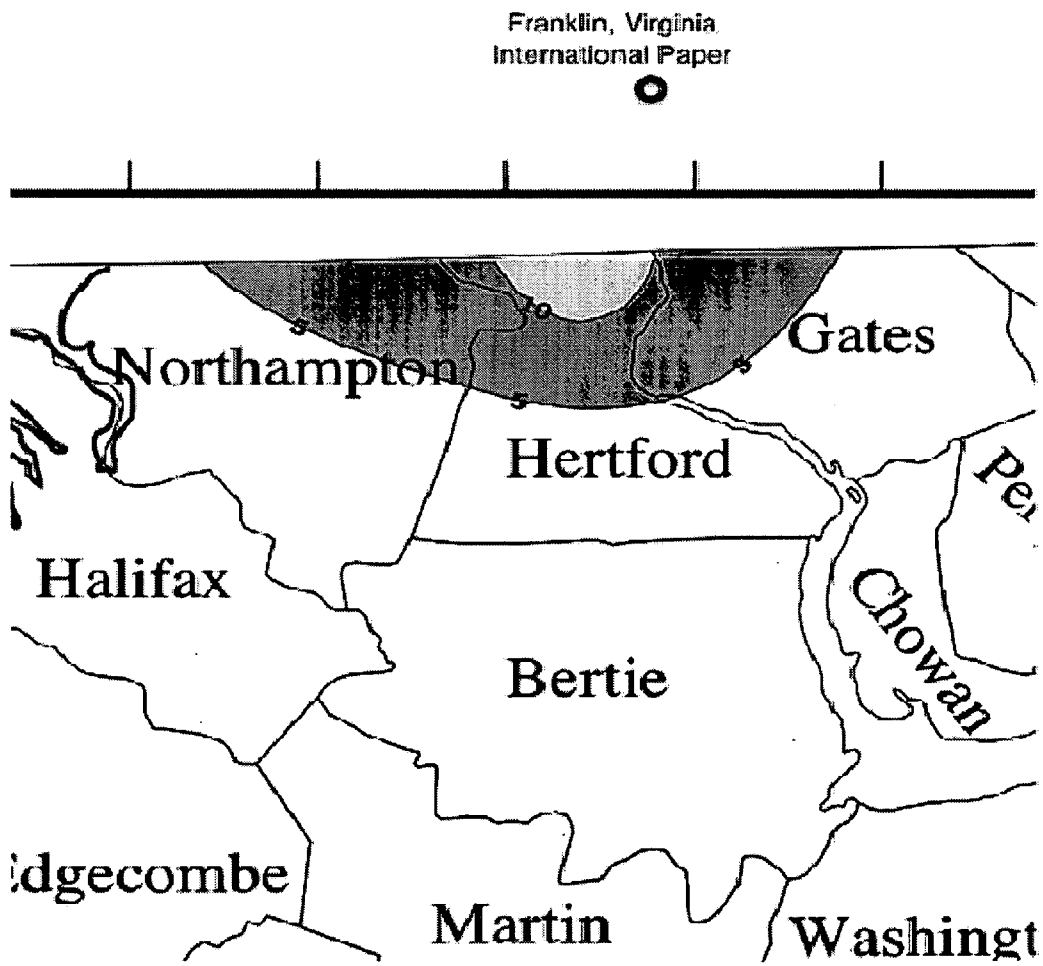
Black Creek Aquifer in CUA



Upper Cape Fear Aquifer in CUA



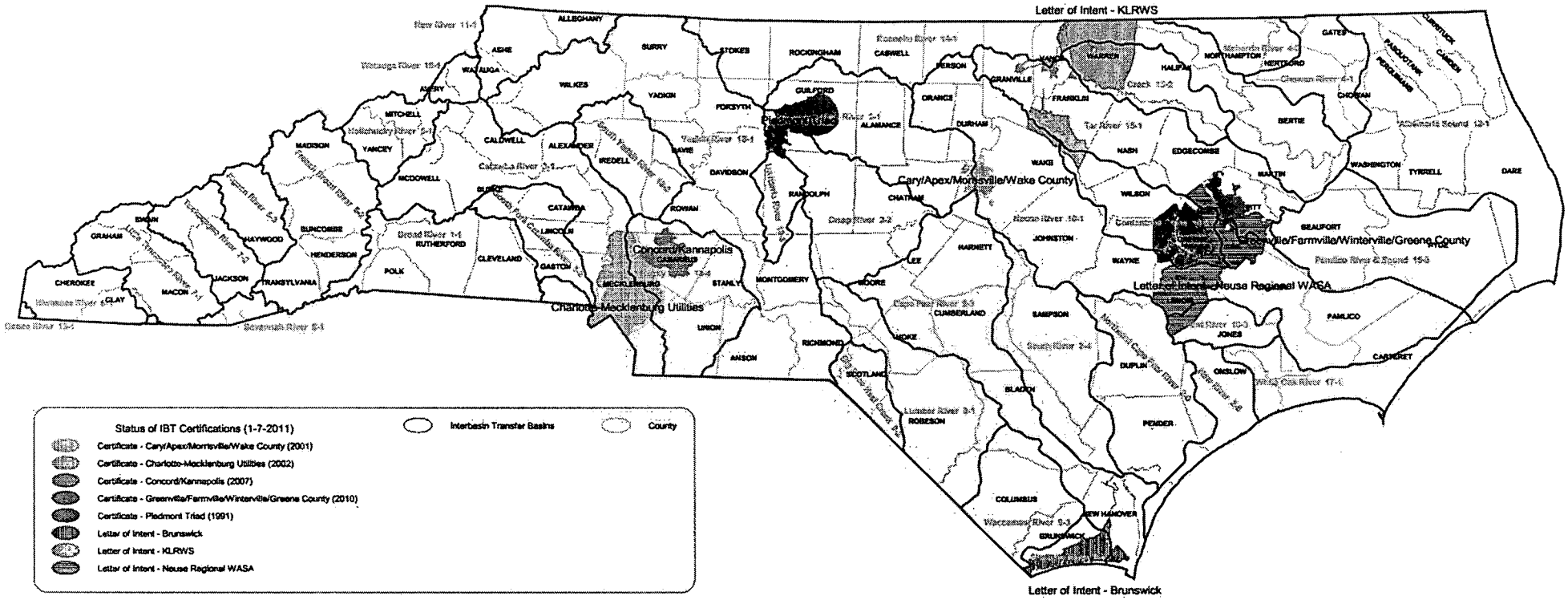
Lower Cape Fear Aquifer



Lessons Learned from Capacity Use Area

- Program is functioning as expected
- Difficulty in developing rules was worth it
- Long-term, proactive water resource planning is possible in North Carolina
- Buy-in/participation of major stakeholders in program development is critical
  - Local government/public utility input

NC Interbasin Transfers



1-13-2011

Major DWR Projects for 2011

- Allocation of Water Supply in Kerr Lake w/ VA
- Kerr Lake IBT request
- Little River Reservoir
- Jordan Lake Reallocation
- Continued development of hydrologic models
- Continued progress with Eco-Flows SAB

Questions?

Tom Reeder
Director, NC DWR
919-715-3045
tom.reeder@ncdenr.gov

DWR
Division of Water Resources

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
September 28, 2011

The Environmental Review Commission (ERC or Commission) met on Wednesday September 28, 2011 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Gillespie presided.

The following members were present: Senators David Rouzer, Chair, Rep. Mitch Gillespie Co-Chair, Representative Ruth Samuelson, Co-Chair, Senator Stan Bingham, Senator Dan Clodfelter, Senator Don East, Senator Fletcher Hartsell, Senator Brent Jackson, Senator Bill Rabon, Representative William Brisson, Representative Joe Hackney, Representative Pat McElraft, and Representative Chuck McGrady. Mr. Jeff Hudson, Ms. Jennifer McGinnis, and Ms. Susan Iddings, Commission Counsels; Ms. Jennifer Mundt, Commission Analyst; Ms. Mariah Matheson, Research Assistant; and Ms. Cindy Hobbs, Commission Clerk, Sargent-at-Arms Bill Bass, Garland Shepheard, Jessie Hayes, Ernie Sherrill, Dedrick Anders and Steve Wilson. Attachment #1 and #2.

On September 19, 2011, notice was sent to members and interested parties via e-mail. A copy of the notice is included in the attachments to these minutes as Attachment #3. Copies of the agenda for the meeting and visitor registration sheets are included in the attachments to these minutes as Attachment #4 and Attachment #5, respectively.

Call to order and introductory remarks

Representative Gillespie called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized his Co-Chairs, Senator Rouzer and Representative Samuelson, for introductory remarks. Senator Rouzer and Representative Samuelson also welcomed members, staff, and visitors in attendance. Representative Gillespie asked the members of the Commission and staff of the Commission to introduce themselves. He also introduced the Sergeant-at-Arms, Bill Bass, Garland Shepherd, Jessie Hayes, Ernie Sherrill, Dedrick Anders, and Steve Wilson, and the Commission Clerks, Susan Phillips, Sarah Neunzig, and Cindy Hobbs. Representative Gillespie recognized Mr. Jeff Hudson, Commission Counsel, to provide an overview of the meeting agenda. Mr. Hudson reviewed the agenda and brought to the members' attention the following handouts: Summaries of Substantive Environmental and Natural Resources Ratified Legislation: 2011 Regular Session, 2011 General Assembly and the September 28, 2011 memorandum of reports received by the Commission. Copies of these handouts are included in the attachments to these minutes as Attachment #6 and Attachment #7, respectively. Representative Gillespie brought to the members' attention a handout that he had provided; the handout contains language from H773, the Studies Bill (not enacted), that would have directed the Department of Environment and Natural Resources to study implementation of the State and federal rules related to emissions of toxic air pollutants. A copy of this handout is included in the attachments to these minutes as Attachment #8.

Report on the State Air Toxics Program

Representative Gillespie recognized Ms. Sheila C. Holman, Director, Division of Air Quality (DAQ), Department of Environment and Natural Resources (DENR) to provide a report on the State Air Toxics Program. Ms. Holman provided information on the history of the State and federal programs for regulating toxic air pollutants, the amount of toxic air pollutants emitted by sources in North Carolina annually, the differences between the State and federal programs, examples of how sources of toxic air pollutants have complied with State regulations, and a comparison of the North Carolina air toxics program with the South Carolina and Virginia programs. A copy of Ms. Holman's PowerPoint

presentation is included in the attachments to these minutes as Attachment #9. Ms. Holman received a number of questions and requests for further information about the State air toxics program. These questions and requests included the following:

Senator Bingham

- Provide a list of regulated toxins, quantities emitted, and areas in which they're emitted. Specifically, the 25% that are not regulated or the small quantity toxins that don't meet the threshold.
- What is the worldwide tonnage? For example: mobile sources, coal-fired power plants, China's emissions, etc.

Senator East

- How do we know that DAQ is being effective?
- How much reduction have we seen as a result of the toxics program?
- Total cost to the State for administering the program?
    - Representative Gillespie directed staff of the Fiscal Research Division to provide this information.
- Are auto manufacturers and tire re-cappers heavy polluters?

Representative Gillespie

- Expense of modeling and frequency? Is the modeling cost a disadvantage?
- Field trip: Facility walk-through on the process of testing.
- Provide public health statistics in comparison with other states.
- Examples of small facilities?
    - Sushma Musemore with DAQ responded that asphalt plants, concrete plants, and furniture manufacturing facilities are typical examples of small facilities in North Carolina.
- What is the trigger point for the small facilities?
- List of the applicable federal rules and State rules.
- Is measurement of toxins emitted from the property line or fence line? Does the measurement trigger disadvantage sources with smaller parcels of property? What about measuring from the source itself?

Representative Hackney

- Asked whether the Commission could receive information on the science behind and health benefits of the State program.

Senator Hartsell

- Provide list of 21 substances that are covered by the State program, but not the federal program.

Senator Jackson

- What toxins come specifically from agricultural activities?
- Provide a breakdown between emissions from agricultural activities or facilities, such as grain elevators and agricultural sources of soil dust and sulfur dioxide, and traditional industry.
- Provide a breakdown between toxic and non-toxic pollutants from agricultural sources.

Representative McElraft

- How does 38 million pounds compare to other states, not just the Southeast?

- How is that calculation made and who makes it? Per Ms. Holman, it comes from estimates provided by the sources themselves.
- What co-benefits in reductions have we received with maximum achievable control technology (MACT)?
- Doesn't the EPA take public health into consideration when doing the MACTs? Where is NC's expertise?

Senator Rabon

- What are some disadvantages to the State program?

Senator Rouzer

- How do neighboring states handle the 21 toxins?
- What was the emissions figure 20 years ago?
- What percentage do wildfires (for instance recent fire in Great Dismal Swamp) and mobile sources contribute?

Representative Samuelson

- What triggers the State program?
- Are there some facilities subject to the federal government and the State? How can someone be subject to the federal program and not the State?
- Does the industry have to model too often?

Report on the State Water Supply Plan

Representative Gillespie recognized Mr. Thomas A. Reeder, Director, Division of Water Resources (DWR), DENR to provide the annual report on the State Water Supply Plan and other information related to water resources in the State. Mr. Reeder provided information on DWR, the State Water Supply Plan, the status of hydrologic modeling in the State, the development of water supplies in the State, efforts to improve water use efficiency, interbasin transfers (IBTs), the Central Coastal Plain Capacity Use Area (CCPCUA), and drought conditions. Copies of Mr. Reeder's PowerPoint presentation and the State Water Supply Plan are included in the attachments to these minutes as Attachment #10. and Attachment #11, respectively. Mr. Reeder received a number of questions and requests for further information about water supply. These questions and requests included the following:

Representative Gillespie

- Is there liability to the State on being a co-applicant for a water resource project, as authorized under the legislation enacted earlier this year? Do we need language to limit NC's co-applicant liability?
    - Mr. Reeder responded that there is liability, at least in terms of non-compliance, so modifications to the legislation may be needed to address the issue. Representative Gillespie asked for a recommendation from DENR on this issue.
- Provide a presentation on the Randleman Dam litigation at a subsequent meeting.
- Provide notification to the General Assembly of IBT requests.

Senator Hartsell

- Has the Department intervened in the Randleman Dam lawsuit?
- Provide information on water rights in the State at a subsequent meeting?

Commission discussion and announcements

Senator Hartsell informed the Commission that he had submitted a letter to Attorney General Roy Cooper concerning the ownership of the submerged bed of the Yadkin River at the site of the Yadkin Hydroelectric Project. A copy of the letter is included in the attachments to these minutes as Attachment #12.

Representative Gillespie recognized Mr. Hudson for comments on the next meeting of the Commission. Mr. Hudson informed the Commission that the following topics would likely be on the agenda for the next meeting of the Commission: follow-up on the State air toxics program, a presentation on the science behind and health benefits of the air toxics program, a presentation from entities regulated under the air toxics program, an update on the DENR study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State, and a report on the State Leaking Underground Storage Tank Program.

Representative Gillespie thanked the members and staff, announced the next meeting to be held would be October 12, 2011 at 9:00AM.

Adjournment: The meeting was adjourned at 12:10PM.

Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Attest:

Cindy Hobbs, Committee Clerk

Attachments: #12

ATTENDANCE

Environmental Review Commission

DATES	3/29														
Sen. David Rouzer (Chair)	✓														
Rep. Mitch Gillespie (Co-Chair)	✓														
Rep. Ruth Samuelson (Co-Chair)	✓														
Sen. Stan Bingham	✓														
Sen. Dan Clodfelter	—														
Sen. Don East	✓														
Sen. Fletcher Hartsell	✓														
Sen. Brent Jackson	✓														
Sen. Bill Rabon	✓														
Sen. Michael Walters	—														
Rep. William Brisson	✓														
Rep. Joe Hackney	✓														
Rep. Carolyn Justice	—														
Rep. Pat McElraft	✓														
Rep. Chuck McGrady	✓														
Rep. Roger West	—														
Staff:															
Jeff Hudson	✓														
Susan Iddings	✓														
Jennifer McGinnis	✓														
Jennifer Mundt	✓														
Mariah Matheson	✓														

2

House Committee Pages / Sergeants at Arms

NAME OF COMMITTEE _____

DATE: _____ **Room:** _____

*Name: _____

County: _____

Sponsor: _____

*Name: _____

County: _____

Sponsor: _____

*Name: _____

County: _____

Sponsor: _____

*Name: _____

County: _____

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*Name: _____

County: _____

Sponsor: _____

House Sgt-At Arms: SENATE

1. Name: BILL BASS
2. Name: GARLAND SHEPHEARD
3. Name: JESSE HAYES
4. Name: ERNIE SHERRELL
5. Name: Pedrick Anders
6. Name: steve Wilson

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
SENATOR STAN BINGHAM
SENATOR DANIEL G. CLODFELTER
SENATOR DON EAST
SENATOR FLETCHER L. HARTSELL, Jr.
SENATOR BRENT JACKSON
SENATOR BILL RABON
SENATOR MICHAEL P. WALTERS

REPRESENTATIVE WILLIAM D. BRISSON
REPRESENTATIVE JOE HACKNEY
REPRESENTATIVE CAROLYN H. JUSTICE
REPRESENTATIVE PAT MCELRAFT
REPRESENTATIVE CHUCK MCGRADY
REPRESENTATIVE ROGER WEST

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JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SUSAN PHILLIPS
COMMISSION CLERKS

September 19, 2011

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Cindy Hobbs, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at 9:30 a.m. on Wednesday, September 28, 2011, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. The agenda for the meeting is expected to include an overview of the State Air Toxics Program by the Department of Environment and Natural Resources.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Cindy Hobbs, Commission Clerk, at (919) 733-5862.

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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COMMISSION ASSISTANT

CINDY HOBBS
SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

9:30 a.m. Wednesday, September 28, 2011
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Mitch Gillespie, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Introduction of Members and Staff *(10 minutes)*

4. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

5. Report on the State Air Toxics Program *(45 minutes)*
   Sheila C. Holman, Director
   Division of Air Quality, Department of Environment and Natural Resources (DENR)

6. Report on the State Water Supply Plan (G.S. 143-355(n)) *(30 minutes)*
   Thomas A. Reeder, Director
   Division of Water Resources, DENR

7. Commission discussion and announcements

8. Adjourn

FUTURE MEETINGS:

The Environmental Review Commission will meet on the following dates at 9:00 a.m. in Room 544 of the Legislative Office Building, Raleigh, North Carolina. **This schedule is tentative and subject to adjustment.** For planning purposes, however, please reserve these dates.

Wednesday, October 12, 2011
Wednesday, November 9, 2011
Wednesday, December 14, 2011

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

#5

VISITOR REGISTRATION SHEET

Environmental Review Commission — 9-28-2011

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
George Everett	Duke Energy
Tom Lors	TNC
Mary MacLean Asbill	SELC
Dan Conrad	NCCN
Robin Smith	DENR
T REEDER	11
Tom Fransen	DENR, DWR
Jessi Hayes	NC HBA
David McGowan	NCAR
Lisa Martin	NC HBA
PRESTON HOWARD	MCIC

VISITOR REGISTRATION SHEET

Environmental Review Commission
Name of Committee **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
R Rogers	CLWMTF
Sushma Masemore	NC DENR - DAQ
Sheila Holman	NC DENR - DAQ
Mike Abraczinskas	NC DENR - DAQ
Chris Agaer	DOA
Veronica Butcher Shingleton	Office of Governor
Amy Simms	DENR
Trina Ozer	DENR
Sam Pearsall	Env. Defense Fund

VISITOR REGISTRATION SHEET

Environmental Review Commission

Name of Committee **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Don Rayno	DENR-DWR
Tom Bean	EDF, NCSEA, NCWF
Kathy Hawkins	Duke Energy
David Knight	DENR

VISITOR REGISTRATION SHEET

Environmental Review Commission — 9-28-2011

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Doug Lassiter	NCSTA
Patrick Buffkin	NCAEC
Daniel Ambrose	NCLM
[illegible] Gaskin	Tennessee Gas Pipeline
John Goodman	NC Chamber
John Shaw	Sierra Club - Cap Group
Allison Walker	NMPS
Drew Saunders	ElectriCities
Jay Rouse	NC Co-ops
[illegible]	Biofuels Chapter
Chris Anderson	

VISITOR REGISTRATION SHEET

Environmental Review Commission

Name of Committee **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Bill Lane	Kilpatrick Townsend
John Patterson	NCADA
Amy Ellen	NCLA
Michelle Vaught	PotashCorp (PCS Phosphate)
Teresa Kozlosky	NSS
Paul Sherman	NCDB
Jorge Perez	CSS

#6

SUMMARIES OF SUBSTANTIVE ENVIRONMENTAL AND NATURAL RESOURCES RATIFIED LEGISLATION

2011 GENERAL ASSEMBLY
2011 REGULAR SESSION

2011

ENVIRONMENTAL TEAM
RESEARCH DIVISION
N.C. GENERAL ASSEMBLY

SEPTEMBER 2011

Environment and Natural Resources

Jeff Hudson, Jennifer McGinnis, Jennifer Mundt, and Mariah Matheson

Enacted Legislation

Environmental Health

Modify Public Swimming Pool Requirements

In 2010, the Department of Environment and Natural Resources (DENR) modified its interpretation of certain swimming pool safety rules to require owners and operators of public swimming pools to comply with fencing standards in order to receive a 2011 operation permit. A number of public swimming pools had fences that were in good repair, but did not meet all of the specific fencing standards. S.L. 2011-39 (SB 368):

- Prohibits DENR from denying an operation permit to an owner or operator of a public swimming pool that received an operation permit prior to April 1, 2010, if the denial is based solely on the owner or operator's failure to comply with certain fencing requirements such as the size of chain link, spacing of cut-outs, and the size of the gap between the bottom of the fence and the ground. DENR may, however, deny an operation permit to an owner or operator that fails to comply with these provisions when (i) at least fifty percent (50%) of the fence has been damaged or destroyed, (ii) the owner or operator elects to replace the fence, or (iii) the owner or operator fails to comply with any other rules for public swimming pools.
- Prohibits DENR from denying an operation permit to an owner or operator of an interactive play attraction based solely on the owner or operator's failure to comply with the rule that requires dressing and sanitary facilities.
- Prohibits DENR until July 1, 2012 from requiring owners and operators of public swimming pools to comply with the rule that requires a wading pool to be separated from a swimming pool by a fence or other structure and directs the Commission for Public Health to review the safety benefits of the rule and report its findings and recommendations to the Joint Regulatory Reform Committee by March 1, 2012.

This act became effective April 12, 2011.

Fisheries

Oyster Sanctuary Program Support

S.L. 2011-145, Sec. 13.18 (HB 200, Sec. 13.18) encourages the Marine Fisheries Commission and the Wildlife Resources Commission to consider supporting the Oyster Sanctuary Program managed by the Division of Marine Fisheries of the Department of Environment and Natural Resources.

This section became effective July 1, 2011.

Marine Fisheries Encouraged to Contract with Private Sector for Oyster Sanctuary Restoration

S.L. 2011-145, Sec. 13.18A (HB 200, Sec. 13.18A) encourages the Division of Marine Fisheries of the Department of Environment and Natural Resources to contract with private sector

businesses for any oyster sanctuary restoration projects in the Pamlico Sound that are funded in whole or in part with State funds, State fees, State grants, or revenue generated from any license issued by the State.

This section became effective July 1, 2011.

Miscellaneous

Abolish, Transfer to other Departments, or Consolidate within the Department of Environment and Natural Resources (DENR) all Environmental Health Programs under DENR

S.L. 2011-145, Sec. 13.3 (HB 200, Sec. 13.3), as amended by S.L. 2011-391, Sec. 27 (HB 22, Sec. 27), abolishes the Division of Environmental Health (DEH) of the Department of Environment and Natural Resources (DENR) and subsequently eliminates, transfers, or consolidates all functions, powers, duties, and obligations previously vested in DEH. If transferred or consolidated, the programs have been placed within the Department of Health and Human Services, DENR, the Department of Agriculture and Consumer Services, or retained by that local health department.

The transfers under this section became effective July 1, 2011, and funds transferred must be net of any changes enacted by this section. Any references in this act to any program, office, section, division, or department that is transferred under this section must be construed to be consistent with the transfer under this section.

This section became effective July 1, 2011.

DENR Civil Penalty Assessments

S.L. 2011-145, Sec. 13.6 (HB 200, Sec. 13.6) directs the Department of Environment and Natural Resources to extend the period of time by 10 days between the time the violator is sent a notice of violation of an environmental statute or an environmental rule and the subsequent date the violator is sent an assessment of the civil penalty for the violation.

This section became effective July 1, 2011.

Transfer Division of Soil and Water Conservation and Soil and Water Conservation Commission to the Department of Agriculture and Consumer Services

S.L. 2011-145, Sec. 13.22A (HB 200, Sec. 13.22A) transfers the Division of Soil and Water Conservation, including all its statutory authority, powers, duties, and functions, from the Department of Environment and Natural Resources (DENR) to the Department of Agriculture and Consumer Services (DACS). This section also transfers the Soil and Water Conservation Commission from DENR to DACS such that the Commission will continue to independently exercise all its prescribed statutory powers save any management functions which will be performed under the direction and supervision of Commissioner of Agriculture. This section also makes technical and conforming changes related to these transfers.

This section became effective July 1, 2011. (JM)

Transfer Forestry Division and Forestry Council from the Department of Environment and Natural Resources to the Department of Agriculture and Consumer Services

S.L. 2011-145, Sec. 13.25 (HB 200, Sec. 13.25), as amended by S.L. 2011-391, Sec. 33(b) (HB 22, Sec. 33(b), transfers the Division of Forest Resources (DFR) and the Forestry Council, including all of their functions, powers, duties, and obligations previously vested in the Department of Environment and Natural Resources (DENR) to the Department of Agriculture and Consumer Services (DACS).

DACS will be responsible for caring for the State forests and recreational forests, including forest maintenance, forest fire prevention, reforestation, and the protection of lands and water supplies by the preservation of forests.

The section also provides that DuPont State Forest is designated as a State Recreational Forest. DACS must manage DuPont State Recreational Forest: (i) primarily for natural resource preservation, scenic enjoyment and recreational purposes, including horseback riding, hiking, bicycling, hunting, and fishing; (ii) so as to provide an exemplary model of scientifically sound, ecologically based natural resource management for the social and economic benefit of the forest's diverse community of users; and (iii) consistent with the grant agreement between the Natural Heritage Trust Fund and the Division of Forest Resources, which grant designates a portion of the forest as a North Carolina Nature Preserve. In addition, DACS may use the forest for the demonstration of different forest management and resource protection techniques for local landowners, natural resource professionals, students, and other forest visitors.

DACS must report no later than October 1 of each year to the Joint Legislative Commission on Governmental Operations, the House and Senate Appropriations Subcommittees on Natural and Economic Resources, the Fiscal Research Division, and the Environmental Review Commission on the Department's management activities at DuPont State Recreational Forest during the preceding fiscal year and plans for management of DuPont State Recreational Forest for the upcoming fiscal year.

This section became effective July 1, 2011.

Amend Environmental Laws 2011

S.L. 2011-394 (HB 119) amends certain environmental and natural resources laws as follows:

- Exempts certain new renewable energy facilities from best available control technology (BACT) requirements. BACT means an emissions limitation based on the maximum degree of reduction in the emission of air pollutants that is achievable for a facility, taking into account energy, environmental, and economic impacts and other costs.
- Reduces certain open burning minimum setback requirements for: (i) open burning for land clearing or right-of-way maintenance without an air quality permit must be at least 500 feet (previously 1000 feet) from any dwelling, group of dwellings, or commercial or institutional establishment, or other occupied structure not located on the property on which the burning is conducted; and (ii) air curtain burning must be at least 300 feet (previously 500 feet) from any dwelling, group of dwellings, or commercial or institutional establishment, or other occupied structure not located on the property on which the burning is conducted. The section also provides that minimal, unintentional non-compliance with an open burning setback is not a violation.

- Provides that draft erosion and sedimentation control plans for the construction of utility lines for the provision of water, sewer, gas, telecommunications, or electrical service, may be submitted without a landowner's written consent, if the landowner has been provided prior notice of the project.
- Clarifies that the prohibition on the disposal in landfills or by incineration of beverage containers that are required to be recycled by certain Alcoholic Beverage Control (ABC) permittees applies only to ABC permittees.
- Provides that for purposes of the program for the removal of mercury containing products from public buildings, a political subdivision of the State "using State funds" means the political subdivision has received grant funding from the State for the construction or operation of the public building.
- Directs the Environmental Management Commission (EMC) to develop model practices for incorporation of stormwater capture and reuse into stormwater management programs and to make the information on those model practices available to State agencies and local governments.
- Prohibits the Division of Water Quality of the Department of Environment and Natural Resources (DENR) from requiring a water quality permit for a Type I solid waste compost facility, unless required to do so by federal law. Type I facilities may receive yard and garden waste, silvicultural waste, and untreated and unpainted wood waste.
- Amends the outdoor potable water use standard for public major facility construction projects to require the use of weather-based irrigation controllers. This provision only applies to projects that haven't entered the schematic design phase by the effective date of the act.
- Provides that no permit will be required to enter into a contract for the construction, installation, or alteration of any treatment works or disposal system or to construct, install, or alter any treatment works or disposal system when the system's or work's principle function is to conduct, treat, equalize, neutralize, stabilize, recycle, or dispose of industrial waste or sewage from an industrial facility and the discharge of the industrial waste or sewage is authorized under a permit issued for the discharge of the industrial waste or sewage into the waters of the State. Notwithstanding the above, the permit issued for the discharge may be modified if required by federal regulation.
- Makes the following changes to the Dam Safety Act: (i) exempts a dam constructed for the purpose of providing water for agricultural use when a licensed professional engineer designed or approved plans for the dam, supervised its construction, and registered the dam with the Division of Land Resources of DENR. The exemption, however, does not apply to dams determined to be high-hazard by DENR; and (ii) expands the exemption for small dams by increasing the height threshold from 15 feet to 25 feet and increasing the impoundment capacity threshold from less than 10 acre-feet to less than 50 acre-feet. The dam safety exemption provisions apply retroactively to any dam that is the subject of an enforcement action that has not been resolved as of June 1, 2011.
- Makes various changes to the laws governing the State's Underground Storage Tank Program and petroleum discharges.
    - Clarifies that costs associated with a site investigation that is required by DENR for the purpose of determining whether a discharge of petroleum from an underground storage tank (UST) system has occurred are reimbursable, whether or not the investigation confirms that a discharge has occurred. Costs resulting from investigations that are part of routine leak detection procedures required by statute or rule, however, would not be reimbursable.
    - Amends the statute governing the reimbursement of costs from the Commercial Leaking Petroleum Underground Storage Tank Cleanup Fund ("Commercial

Fund") for cleanup of multiple discharges at the same facility. The provision specifies that if an owner or operator elects to cleanup a separate discharge for which the owner or operator is not responsible, the responsible party for the other discharge cannot be identified, and the discharges are commingled, the owner or operator would only be responsible for those costs applicable to the discharge for which the owner or operator is actually the responsible party. This provision applies to discharges or releases reported on or after January 1, 2009.

- Establishes a process to assist in cases of severe financial hardship, requiring DENR to use up to $1 million of the funds in the Commercial Fund and $100,000 from the Non-Commercial Fund to fund necessary assessment and cleanup to be conducted by DENR of discharges for which a responsible party has been identified but for which the responsible party can demonstrate that undertaking the costs of assessment and cleanup will impose a severe financial hardship. The provision directs the EMC to adopt rules in this regard, which, among other things, would provide that determinations of eligibility for such assistance would be made by a subcommittee of the penalty remissions committee of the EMC.
- Modifies certain requirements applicable to USTs, including: (i) amending the statute that mandates adoption of rules to require secondary containment for all components of USTs, to clarify that the provision is not to be construed to limit the right of an owner or operator to repair any existing component of a UST; and (ii) requiring DENR to allow non-tank unprotected metallic components, including flex connectors and other metal fittings and connectors at the ends of piping runs, to have corrosion protection added as an alternative to replacement of these components if the component does not have visible corrosion and passes a tightness test.
- Extends the final deadline of a rule requiring certain USTs to meet well setback requirements or provide secondary containment for the system from January 1, 2016 to January 1, 2020. Also, the EMC is directed to establish a variance process applicable to the setbacks required for UST systems from certain public water supply wells, if the EMC finds facts to demonstrate that a variance would not endanger human health and welfare or groundwater.
- Provides that the rule that uses the distance between a source area of a confirmed discharge from a UST to a water supply well or a private drinking water well to determine the risk of a discharge must include a determination whether a nearby well is likely to be affected by the discharge as a factor in determining the level of risk.
- Provides that, from the effective date of the act, DENR cannot prohibit the use of cathodically protected steel tanks to meet external corrosion protection standards, and requires the EMC to adopt rules accordingly by January 1, 2014.

The provisions concerning USTs became effective July 1, 2011, and apply to discharges or releases reported on or after that date.

- Directs the EMC to adopt rules to identify acceptable uses of gray water, facilitate the permitting of gray water systems, and establish standards for gray water; provides that gray water systems would be regulated by DENR under rules adopted by the EMC; and provides that a city may not prohibit the installation and maintenance of cisterns and rain barrels.
- Clarifies that the nutrient offset payment schedule set out in session law will expire when the rules establishing the new payment schedule become effective.
- Modifies implementation of the Jordan Lake Rules under S.L. 2009-216 to provide that existing dischargers must limit their total nitrogen discharge in accordance with the Wastewater Discharge Rule by 2016, unless the discharger has received an authorization pursuant to G.S. 143-215.1 for construction, installation, or alteration of the treatment works for purposes of complying with the allocation under

Wastewater Discharge Rule by December 31, 2016, at which point the compliance date must be no later than calendar year 2018.

- Authorizes the Commission for Public Health to adopt rules to incorporate the federal food code and authorizes the Department of Health and Human Services to grant variances from food and lodging rules if DHHS determines that the variance will not result in a health hazard or nuisance condition.
- Establishes a process for the issuance of variances from the setback requirements for public water supply wells under certain circumstances.
- Provides that where application of the riparian buffer requirements of the Neuse River Basin Riparian Buffer Rule or the Tar Pamlico River Basin Riparian Buffer Rule to a lot of two acres or less that was platted and recorded prior to August 1, 2000, would preclude construction of a single-family residence and necessary infrastructure, the single-family residence may encroach on the buffer if certain conditions are met. The section also directs DENR to study the application and implementation of these rules, including whether the grandfathering provision established by the section should be broadened.
- Provides that a ginseng export certificate may be obtained free of charge. Previously, there was an export certification fee of $3.00 per pound required for each shipment.
- Changes the sunset for the Methane Capture Pilot Program from September 1, 2017 to September 1, 2011.
- Directs DENR to study stormwater management requirements for airports and consider whether the requirements might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the cost and other regulatory burdens of compliance.
- Directs DENR to transfer certain grant funds for the control of nonpoint source pollution to the Division of Forest Resources (DFR) and the Division of Soil and Water Conservation (DSWC), and provides that the Division of Water Quality must establish a Workgroup of Nonpoint Source Agencies, including DFR and DSWC, which will consider the competitive grant project proposals. The workgroup must be given full input to the project funding decisions.
- Makes changes to financial assurance requirements for applicants for a permit and permit holders for hazardous waste facilities. In particular, the provision: (i) adds a requirement for financial assurance sufficient to cover subsequent costs incurred by DENR in response to an incident at a facility; (ii) eliminates a specific requirement for financial assurance to cover costs of off-site screening for potential migration of contaminants in the event of a release of hazardous waste or hazardous waste constituents into the environment; (iii) eliminates a prohibition on use of financial tests or captive insurance as mechanisms to satisfy financial assurance requirements; (iv) eliminates a requirement that an applicant provide cost estimates for facility closure, post-closure maintenance and monitoring, and any corrective action that DENR may require, as well as estimates for off-site screening for potential migration of contaminants in the event of a release of hazardous waste or hazardous waste constituents into the environment; (v) with regard to requirements for accessibility of financial assurance funds, provides that compliance with applicable federal requirements is sufficient to meet the requirements under State law; and (vi) requires the EMC to adopt rules regarding financial responsibility to implement these financial assurance provisions, which may not exceed or be more stringent than requirements for financial assurance provided by federal regulation or law.

Except as otherwise specified, this act became effective July 1, 2011.

Solid/Hazardous Waste

Requirements for Mineral Oil Spills - 2

S.L. 2011-38 (HB 103) amends laws governing discharges of oil and hazardous substances, to establish different requirements for discharges of mineral oil from electrical equipment owned by a public utility. As defined under the act, "mineral oil" means a light nontoxic liquid petroleum distillate used as a coolant and insulator in electrical equipment owned by a public utility.

With regard to cleanup of discharges of mineral oil of this type, a person having control over the discharge must:

- Report the discharge to the applicable regional office of Department of Environment and Natural Resources (DENR) within 24 hours of confirmation of a discharge when the discharge (i) exceeds 25 gallons, (ii) is directly to surface waters or causes a sheen on surface waters of the State, or (iii) is at a distance of 100 feet or less from any surface water and contains 50 parts per million or more of polychlorinated biphenyls (PCBs). The notification must include the time of discovery, address or location of the release, immediate actions taken, estimated amount of the release, and, if known, the concentration of PCBs present in the discharge.
- Restore the area affected by the discharge as nearly as may be to the condition existing prior to the discharge.
- Where soil removal is necessary as part of a cleanup, all visible traces of the mineral oil must be removed. For discharges of mineral oil which contain 50 parts per million or more of PCBs, cleanup must be performed in compliance with applicable provisions of the federal Toxic Substances Control Act. If it is not feasible to collect and remove the discharge of mineral oil within 24 hours of confirmation of the release, the person responsible must take all practicable actions to contain, treat, and disperse the discharge, except that no chemical or other dispersants or treatment materials that will be detrimental to the environment or natural resources may be used for such purposes unless they have been previously approved by the Environmental Management Commission.
- Notify DENR when the restoration has been properly completed for a discharge that (i) exceeds 25 gallons, (ii) is directly to surface waters or causes a sheen on surface waters of the State, or (iii) is at a distance of 100 feet or less from any surface water and contains 50 parts per million or more of PCBs.

This act became effective April 12, 2011.

Accelerate Cleanup of Industrial Properties

Generally, cleanup of environmental contamination must be performed to meet unrestricted use standards, meaning contaminant concentrations present at a location are acceptable for all uses; are protective of public health, safety, and welfare and the environment; and comply with applicable standards established by statute or rule. S.L. 2011-186 (HB 45) authorizes the risk-based cleanup of contaminated industrial sites using site-specific cleanup standards designed to protect public health, safety, and welfare and the environment based on the current and anticipated future use of a site.

Applicability. - Risk-based cleanup is available for contaminated industrial sites that are governed by cleanup programs for hazardous and solid waste management, groundwater protection, and oil pollution control and where the release of contamination was reported to the Department of Environment and Natural Resources (DENR) prior to March 1, 2011. Risk-based cleanup is not available for contaminated industrial sites that are governed by cleanup programs for leaking underground storage tanks, dry-cleaning facilities, and certain landfills.

Site-specific Remediation Standards. - Site-specific remediation or cleanup standards will be developed for contaminated industrial sites to eliminate or reduce to protective levels any substantial or probable future risk to human health and the environment based on the present or anticipated future use of the site. The standards will be developed in accordance with a number of specific requirements for the protection of air quality, surface water and groundwater quality, and human health.

Remedial Investigation Report and Remedial Action Plan. - A person who proposes a risk-based cleanup must prepare and submit to DENR a remedial investigation report that provides detailed information on the site, contamination at the site, risks posed by the contamination, adjacent properties, and any other information required by DENR. The person would then prepare and submit to DENR a proposed remedial action plan that provides for how the site would be cleaned up in order to protect public health, safety, and welfare and the environment and proof of financial assurance that sufficient funds are available to carry out the cleanup.

Notice of Intent to Remediate. - A person who proposes a risk-based cleanup must send a notice of intent to conduct the risk-based cleanup to all local governments having jurisdiction over the site and to all adjoining landowners. The notice must include all of the information contained in the remedial investigation report. The person must also submit to DENR a certification that the notice of intent was properly distributed, information and comments received in response to the notice, and a description of how the remedial action plan was modified in response to the comments.

Review and Approval of Proposed Remedial Action Plans. - DENR must review each proposed remedial action plan and make a number of determinations prior to approving a plan, including whether the site-specific cleanup standards are appropriate for the site, that no unauthorized levels of contaminants will migrate from the site to adjacent properties, and that the plan is protective of public health, safety, and welfare and the environment. In its review and consideration of the proposed plan, DENR must consider information provided by the person who proposes the plan as well as information provided by the local governments and adjoining landowners.

Attainment of the Remediation Standard. - When DENR determines that an approved remedial action plan has been implemented and applicable cleanup standards have been attained, it will issue a determination that no further cleanup is required. Once a determination has been issued, DENR may only require additional cleanup under specific circumstances, such as a finding that subsequent monitoring indicates that cleanup standards were not achieved; an undocumented contaminant release is discovered; or one or more of the restrictions imposed on the site as part of the cleanup have been violated.

Fees. - The fee for participation in a risk-based cleanup is $4,500 for each acre or portion of an acre of contamination, with a cap of $125,000 regardless of the size of the site. The fees may be used by DENR only to pay for administrative and operating expenses necessary to implement the risk-based cleanup program and to establish and maintain a system for the tracking of land use restrictions recorded at sites that are remediated under the program.

Construction of the Act. - The Act may not be construed or implemented to jeopardize federal authorization under any of the federal statutes, programs, or requirements for the cleanup of contamination; limit the authority of DENR to require investigation, response, or cleanup of environmental contamination necessary to address an imminent threat to public health, safety, or welfare or the environment; or to affect or prevent the enforcement of any local government land-use or development regulation or ordinance.

Dry-cleaning Site Compliance with Land-use Restrictions. - S.L. 2011-186 provides that if a person responsible for a property subject to land-use restrictions under the Dry-Cleaning Solvent Cleanup Act fails to submit an annual certification that the land-use restrictions are properly recorded and followed, the Environmental Management Commission (EMC) must issue a notice of such failure to the person. The notice must inform the person of the actions needed to come into compliance and give the person at least 30 calendar days within which to

come into compliance. If the person fails to come into compliance during this time, the person will then be subject to enforcement procedures.

Study of Costs Associated with Inactive Hazardous Substance or Waste Disposal Sites. - S.L. 2011-186 directs the Environmental Review Commission (ERC), with the assistance of DENR, to study the cost of assessing and remediating inactive hazardous substance or waste disposal sites for which there is no financially-viable responsible party. The ERC will report its findings and recommendations, including any legislative proposals to the 2012 General Assembly, upon its convening.

This act became effective June 20, 2011.

Amend Solid Waste Financial Assurance Requirements

S.L. 2011-262 (HB 209) amends certain financial assurance requirements applicable to owners and operators of sanitary landfills to: (i) authorize the use of a corporate financial test or any other financial device allowed under federal law as a permissible mechanism to establish the financial assurance necessary for closure, post-closure maintenance and monitoring, and any corrective action that may be required at the facility; (ii) decrease the minimum amount of financial assurance that must be established to cover costs for potential assessment and corrective action at a facility from $3 million to $2 million; and (iii) authorize the use of a trust fund pay-in period as an allowable mechanism to establish the financial assurance necessary for potential assessment and corrective action at a facility permitted on or before August 1, 2009.

This act became effective June 23, 2011.

Parks and Public Spaces

Conservation Easements Stewardship Funds

S.L. 2011-209 (SB 309) allows soil and water conservation districts to establish a special revenue fund for the maintenance of conservation easements. Funding sources can include grant money, donations, direct appropriations from the State or any of its agencies, or any other unrestricted funds appropriated to a soil and water conservation district from any source.

This act became effective July 1, 2011.

Ecosystem Enhancement Program Changes

Federal and State law requires developers to avoid, minimize, or mitigate damage to wetlands. This applies to public developers, such as the State, the federal government, and local governments, as well as private developers. Developers can comply with these requirements by paying compensatory wetlands mitigation fees into public or private programs that offset the actions of the developers with projects that restore, create, enhance, or preserve wetlands similar to those that were lost. One such public program is operated by the Ecosystem Enhancement Program (EEP) in the Department of Environment and Natural Resources (DENR). Such private programs are referred to as private wetlands mitigation banks.

During the 2008 Regular Session, the General Assembly enacted legislation to provide that, under certain circumstances, certain applicants for compensatory wetlands mitigation must seek the compensatory wetlands mitigation from a private wetlands mitigation bank before seeking wetlands mitigation from EEP.

S.L. 2011-343 (SB 425) provides that this preference for private mitigation now applies to local governments. This provision, however, would not apply to a local government that was a party to a mitigation banking instrument executed on or before July 1, 2011. S.L. 2011-343 (SB 425) also establishes a new process by which the EEP would provide for compensatory

mitigation. This new process creates a priority system for different types of programs for the procurement of compensatory mitigation.

This act became effective June 27, 2011, and applies to all projects and contracts awarded on or after that date.

Zoning and Development

Permit Terminal Groins

S.L. 2011-387 (SB 110) defines "terminal groin" to mean a structure that is constructed on the side of an inlet at the terminus of an island generally perpendicular to the shoreline to limit or control sediment passage into the inlet channel. S.L. 2011-387 (SB 110) authorizes the Coastal Resources Commission (CRC) to permit terminal groins as follows:

Terminal Groin Permit Application. - An applicant for a permit to construct a terminal groin must supply information supporting the application to the CRC, including:

- Information to demonstrate that structures or infrastructure are imminently threatened by erosion and that nonstructural approaches to erosion control, including relocation of threatened structures, are impractical.
- An environmental impact statement.
- A plan for the construction and maintenance of the terminal groin and accompanying beach fill project.
- A plan for the management of the inlet and estuarine and ocean shorelines immediately adjacent to the inlet.
- Proof of financial assurance that is adequate to cover the cost of: long term maintenance and monitoring of the groin; implementation of mitigation measures; modification or removal of the terminal groin; and restoration of public, private, or public trust property if the groin has an adverse impact on the environment or property.

Terminal Groin Permit Issuance. - In order to issue a permit for the construction of a terminal groin, the CRC must make a number of findings, including findings that:

- The applicant has demonstrated that structures are imminently threatened by erosion and that nonstructural approaches to erosion control are impractical.
- The terminal groin will be accompanied by a concurrent beach fill project to prefill the groin.
- Construction and maintenance of the terminal groin will not result in significant adverse impacts to public or private property.
- The inlet management plan is adequate for monitoring impacts and mitigating any adverse impacts.

Limitations on Number and Funding. - The CRC may issue no more than four terminal groin permits and no permit may be issued where funds are generated from any of the following financing mechanisms:

- Special obligation bonds issued pursuant to Chapter 159I of the General Statutes.
- Nonvoted general obligation bonds issued pursuant to G.S. 159-48(b)(4).
- Financing contracts entered into under G.S. 160A-20 or G.S. 159-148.

Furthermore, no State funds may be spent for any activities related to a terminal groin and its accompanying beach fill project permitted pursuant to this act unless the General Assembly enacts legislation appropriating funds explicitly for such purpose. This prohibition does not apply to any beach fill or beach nourishment project initiated prior to the effective date of this act.

This act became effective June 28, 2011.

Water Quality/Quantity/Groundwater

Prohibit Boylston Creek Reclassification

The Environmental Management Commission's (EMC) Boylston Creek Reclassification Rule would have reclassified Boylston Creek from a Class C water to a Class C Trout water. Class C Trout waters are protected for the same uses as Class C water bodies with additional protections for natural trout propagation and the survival of stocked trout, such as additional buffer requirements. S.L. 2011-24 (HB 62) prohibits the Boylston Creek Reclassification Rule from becoming effective.

This act became effective July 1, 2011.

Exempt Small Agricultural Processing From Permit Requirements

S.L. 2011-41 (HB 162) provides that wastewater management systems for the treatment and disposal of wastewater from agricultural processing activities are not required to be permitted if all of the following conditions are met:

- The activities are carried out by the owner of the agricultural products.
- Involve no more than 1,000 gallons per day.
- Wastewater is not generated from an animal waste management system.
- Wastewater is disposed of by land application.
- No wastewater is discharged to surface waters.
- Disposal of the wastewater does not result in violation of surface or ground water standards.

This act became effective April 19, 2011.

Reclaimed Water Rules/Storm Debris Cleanup

Reclaimed Water Rules. - As directed by S.L. 2008-143, the Environmental Management Commission (EMC) began developing reclaimed water rules in 2008. The EMC adopted a suite of 32 reclaimed water rules on November 18, 2010. The rules were approved by the Rules Review Commission (RRC) on December 16, 2010. The RRC received a sufficient number of letters of objection to two of the reclaimed water rules, which subjected the two rules to review by the General Assembly during the 2011 Regular Session; the Permitting by Regulation Rule (15A NCAC 02U .0113) and the Reclaimed Water Utilization Rule (15A NCAC 02U .0501).

S.L. 2011-48 (HB 268) provides for alternative implementation of the Permitting by Regulation Rule (15A NCAC 02U .0113) by specifying that permitting by regulation for irrigation of agricultural crops that are supplied with reclaimed water includes irrigation of ornamental crops by field nurseries and above ground container nurseries. The act also provides for alternative implementation of the Reclaimed Water Utilization Rule (15A NCAC 02U .0501) by specifying that existing or proposed artificial lakes or ponds operated by customers of reclaimed water providers may be used for storage and irrigation of reclaimed water with limited requirements for setbacks and liners. Additionally, the act also provides that if a National Pollutant Discharge Elimination System permit is required for storage or irrigation of reclaimed water, the Division of Water Quality in the Department of Environment and Natural Resources must issue general permits for such activities to encourage the use of reclaimed water and to minimize the regulatory burden on users of reclaimed water.

Storm Debris Cleanup. - On April 16, 2011, a series of tornadoes caused extensive property damage throughout central and eastern North Carolina. The act provided that from

April 16, 2011, through June 1, 2011, the disposal, temporary storage, and burning of storm related debris was allowed, notwithstanding any permitting requirements for the handling or disposal of solid waste, or any prohibitions on open burning related to the protection of air quality provided under State law. This provision did not (i) allow the improper or unpermitted storage, disposal, or burning of hazardous waste; (ii) obviate the need for a burning permit for the protection of the public from the hazards of forest fires; (iii) allow any activity that would violate federal law; or (iv) allow any activity that causes an imminent threat to public health or safety.

This act became effective April 20, 2011.

Extend Pilot Program for Annual Inspections of Certain Animal Operations

S.L. 2011-145, Sec. 13.21 (HB 200, Sec. 13.21), as amended by S.L. 2011-391, Sec. 29 (HB 22, Sec. 29), extends the pilot program for the annual inspections of animal waste management systems to June, 30, 2013. In 1997, State law directed the Department of Environment and Natural Resources to develop and implement a pilot program regarding the annual inspections of animal operations.

This section became effective July 1, 2011.

End Division of Soil and Water Conservation Role Regarding Animal Waste Management Systems

In 1995, the General Assembly established a permitting program for animal waste management systems to protect water quality and promote innovative systems and practices.

S.L. 2011-145, Sec. 13.22 (HB 200, Sec. 13.22), as amended by S.L. 2011-391, Sec. 30 (HB 22, Sec. 30), provides that the Division of Water Quality of the Department of Environment and Natural Resources will provide inspections and enforcement to animal waste management systems and that an animal operation may request an operations review by DSWC.

This section became effective July 1, 2011.

Agricultural Water Resources Assistance Program/ Conforming Changes; Funds to Promote Water Supply Development

S.L. 2011-145, Sec. 13.23 (HB 200, Sec. 13.23), as amended by S.L. 2011-391, Sec. 31 (HB 22, Sec. 31) establishes the Agricultural Water Resources Assistance Program. The purpose of the Program is to assist farmers and landowners in doing the following:

- Identify opportunities to increase water use efficiency, availability, and storage.
- Implement best management practices to conserve and protect water resources.
- Increase water use efficiency.
- Increase water storage and availability for agricultural purposes.

The Program will be implemented by the Soil and Water Conservation Commission (SWCC) through the soil and water conservation districts in the same manner as the Agriculture Cost Share Program for Nonpoint Source Pollution Control. At least once each calendar year, the Director of the Division of Soil and Water Conservation (DSWC) of the Department of Agriculture and Consumer Services and the Commissioner of Agriculture must meet with stakeholders for the purpose of advising the SWCC on the development and administration of the Program, including the development of annual goals for the Program.

The Program must do the following:

- Within funds available for this Program, provide cost-share funds subject to certain requirements.
- Approve best management practices eligible for cost-share funds.
- Establish criteria to allocate funds to local soil and water conservation districts.
- Develop a process for soliciting and reviewing applications and for selecting farmers to participate in the Program.
- Investigate and pursue other funding sources to supplement State funds, including federal, local, and private funding sources.
- Provide technical assistance to participating persons to assist with the projects that are eligible for cost-share funds and to facilitate the timely transfer of technology among participating persons.
- Adopt temporary and permanent rules as necessary to implement this Program.

Of the funds available for water resource projects, the Department of Environment and Natural Resources must transfer the sum of $1 million to DSWC, for the 2011-2012 fiscal year to implement the Program. The SWCC may use up to 15% of these funds for the costs of the DSWC and the costs of the Soil and Water Conservation Districts to provide engineering assistance, to provide technical assistance, and to administer the Program. Any of these funds that are not expended or encumbered as of June 30, 2012, must not revert and must remain available for purposes set forth in this section until expended.

The DSWC must prepare a comprehensive report on the implementation of the program no later than January 31 of each year. The report must be submitted to the Environmental Review Commission and the first report must be submitted no later than January 31, 2013.

This section became effective July 1, 2011.

Reclaimed Water Cross-Connection Control

As directed by S.L. 2008-143, the Environmental Management Commission (EMC) began developing reclaimed water rules in 2008. The EMC adopted a suite of 32 reclaimed water rules on November 18, 2010. The rules were approved by the Rules Review Commission (RRC) on December 16, 2010. One of the reclaimed water rules, 15A NCAC 02U .0403 (Design Criteria for Distribution Lines), prohibited direct cross-connections between the reclaimed water and potable water systems.

S.L. 2011-218 (HB 388) allows the use of direct cross-connections between reclaimed water and potable water systems when such direct cross-connections have been previously approved by the Department of Environment and Natural Resources.

This act became effective June 23, 2011.

Stormwater/Isolated Population Growth in County

S.L. 2006-246 provides for the implementation of the federal Phase II stormwater management requirements. Among its many provisions, it specifically requires compliance with post construction stormwater management in a county that contains an urbanized area under the 1990 or 2000 census and that has an actual population growth rate that exceeded the State population growth rate for the period from 1994 through 2004.

S.L. 2011-220 (HB 492) provides that a county that contains an urbanized area and that has an actual population growth rate that exceeded the State population growth rate is not subject to post construction stormwater management for development in the unincorporated areas of the county when the population growth occurred in an area of the county containing less than 5% of the county's land area. Any rules adopted to implement S.L. 2006-246 are to be consistent with the provisions of this act and any designations of counties that would not have occurred under S.L. 2006-246, as amended by this act, are rescinded. Future designation of

counties as Phase II counties by the Environmental Management Commission under S.L. 2006-246 is not precluded.

This act became effective June 23, 2011 and applies to any development that occurs on or after that date.

Clarify Water and Well Rights/Private Property

S.L. 2011-255 (SB 676) amends the statute contained in the Well Construction Act that governs permitting, inspection, and testing of private wells to: (i) provide that no person can unduly delay or refuse to permit a well that is constructed, repaired, and operated in compliance with the requirements of the Well Construction Act and the associated rules; and, (ii) prohibit denial of a permit on the basis of a local government policy discouraging or prohibiting the drilling of new wells.

In addition, the act amends the statute which provides that any "water supply well" that is removed from service as a potable water supply source may be used for other purposes, including, but not limited to, irrigation, commercial use, or industrial use. The provision is modified to make it applicable to private wells (under the Well Construction Act, the term "water supply well" specifically excludes wells constructed by an individual on land which is owned or leased by the individual, appurtenant to a single-family dwelling, and intended for domestic use).

This act became effective June 23, 2011.

Associations-Stormwater Responsibility/Sanitary District & Septage Rules

S.L. 2011-256 (HB 750) requires the Department of Environment and Natural Resources to transfer a permit for a stormwater management system from a declarant of a condominium or planned community to an owners' association upon request of the permittee and submission of documentation that declarant control has terminated. In addition, the act:

- Provides that the rules of a sanitary district may not be more restrictive than or conflict with the requirements or ordinances of a county with jurisdiction over the area.
- Prohibits any person from contracting or subcontracting to rent or lease to another a portable toilet or manage or dispose of waste from a portable toilet unless that person is permitted to operate a septage management firm.

This act became effective June 23, 2011.

Functionally Equivalent Wastewater Systems

There are five classifications of onsite wastewater systems (septic tanks): experimental systems, controlled demonstration systems, innovative systems, accepted systems, and conventional systems. This classification system, which is based on the amount of testing and allowable uses of systems, ranges from the systems that have had the least amount of testing and the most restricted use (experimental systems) to the systems that have had the most testing and the least restricted use (accepted and conventional systems).

S.L. 2011-261 (HB 594) authorizes the Commission for Public Health to approve as an innovative wastewater system any wastewater trench system that is determined by the Commission to be functionally equivalent to an accepted wastewater trench system.

This act became effective June 23, 2011.

Exempt Central Coastal Plain Capacity Use Area from Interbasin Transfer Requirements

The Central Coastal Plain Capacity Use Area (CCPCUA) encompasses Beaufort, Carteret, Craven, Duplin, Edgecombe, Greene, Jones, Lenoir, Martin, Onslow, Pamlico, Pitt, Washington, Wayne, and Wilson Counties. The CCPCUA was established by the Environmental Management Commission to address overuse of the area's aquifers and declining aquifer recharge rates.

S.L. 2011-298 (HB 643) exempts interbasin transfers (IBTs) to supplement groundwater supplies in the CCPCUA from all interbasin transfer certification requirements. The exemption from all IBT certification requirements would expire if the cumulative volume of such transfers exceeds 8,000,000 gallons per day.

This act became effective June 24, 2011, and applies to any interbasin transfer to supplement groundwater in the CCPCUA initiated on or after August 31, 2007.

Promote Water Supply Development/Efficiency

S.L. 2011-374 (HB 609) would promote the development of water supply reservoirs and other water supply resources by:

- Directing the Department of Environment and Natural Resources (DENR) to cooperate with units of local government in the identification of water supply needs and appropriate water supply sources and water storage projects to meet those needs.
- Directing DENR to be the principal State agency to cooperate with other State agencies, the United States Army Corps of Engineers, and all other federal agencies in the planning and development of water supply sources and water storage projects for the State.
- Authorizing DENR to assist the local government in identifying the preferred water supply alternative that will provide for the long term water supply needs of the local government.
- Authorizing water systems to establish regional water supply planning organizations to plan for and coordinate water resource supply and demand.

In addition, the act expands the purposes that the Clean Water Management Trust Fund's revenues may be used for to include acquisition of interests in property in order to protect, conserve, enhance, or develop drinking water supplies, including the development of water supply reservoirs.

The act also improves the efficiency of use of North Carolina's water resources by:

- Requiring that local water supply plans include a plan for the reduction of long-term per capita demand for potable water.
- Providing that a local government or large community water system must demonstrate that its required consumer education program include information on measures for the reduction of water consumption in order to be eligible for State water infrastructure funds to extend waterlines or expand water treatment capacity.
- Adding whether a local government has prepared a required local water supply plan to the factors that the Local Government Commission must consider when determining whether to approve bonds for water facilities.
- Directing DENR to provide outreach and assistance regarding water efficiency, including the development of best management practices for community water efficiency and conservation.

The water efficiency provisions of this act became effective October 1, 2011. All other sections of this act became effective June 27, 2011.

Studies

Referrals to Existing Commissions/Committees

Study of Costs Associated with Inactive Hazardous Substance or Waste Disposal Sites

S.L. 2011-186, Sec. 7 (HB 45, Sec. 7) directs the Environmental Review Commission (ERC), with the assistance of the Department of Environment and Natural Resources, to study the cost of assessing and remediating inactive hazardous substance or waste disposal sites for which there is no financially viable responsible party. The ERC must also identify potential sources of funds to address the projected need for assessment and remediation. The ERC must report its findings and recommendations, including any legislative proposals, to the 2012 General Assembly upon its convening.

This section became effective June 20, 2011.

Review Water Supply Laws of the State

S.L. 2011-298, Sec. 3 (HB 643, Sec. 3) directs the Environmental Review Commission (ERC) to review the water supply laws of the State, including the interbasin transfer laws and the laws governing the establishment and implementation of capacity use areas. The ERC must specifically consider whether the policies underlying the interbasin transfer and capacity use area laws are consistent. The ERC may make recommendations as to how the State might better coordinate its policies on interbasin transfers, capacity use areas, and other water supply laws. The ERC must report its findings and recommendations, if any, to the 2012 Regular Session of the 2011 General Assembly.

This section became effective June 24, 2011.

Referrals to Departments, Agencies, Etc.

Study Exempting Motor Vehicles from Emissions Inspections

S.L. 2011-145, Sec. 28.24 (HB 200, Sec. 28.24) requires the Division of Motor Vehicles (DMV) of the Department of Transportation (DOT) to lead a study to examine exempting from the emissions inspection required for motor vehicles (i) the three newest model year vehicles and (ii) all vehicles. As part of this study, the Department of Environment and Natural Resources (DENR), Division of Air Quality (DAQ), in coordination with DMV must evaluate the potential impacts of exempting these motor vehicles on emissions levels and air quality.

No later than March 1, 2012, DOT and DENR must submit a joint report of the results of the study to the Joint Legislative Transportation Oversight Committee, the Environmental Review Commission, the Joint Legislative Commission on Governmental Operations, the House and Senate Appropriations Subcommittees on Natural and Economic Resources, the House Appropriations Subcommittee on Transportation, and the Senate Committee on Appropriations on Department of Transportation.

This section became effective July 1, 2011.

Development and Publication of the Interim Agronomic Rates

In 1995 the General Assembly established an Interagency Group consisting of two representatives from each of the following State agencies: the Division of Soil and Water Conservation, Department of Environment and Natural Resources, Department of Health and Human Services, the Department of Agriculture and Consumer Services, and the Cooperative Extension Service to work on issues related to animal waste management.

S.L. 2011-198, Sec. 1.(d) (SB 378, Sec. 1.(d)) directs the Interagency Group to submit an interim report no later than July 1, 2011 and a final report no later than December 1, 2014 on the development and publication of the interim agronomic rates for animal waste applications on certain energy crops to the Environmental Review Commission; the Commissioner of Agriculture; and the chairs of the Joint Regulatory Reform Committee, the House Agriculture Committee, the House Environment Committee, and the Senate Agriculture/Environment/Natural Resources Committee.

This section became effective June 23, 2011.

Oil and Gas Exploration Study

S.L. 2011-276, Sec. 4 (HB 242, Sec. 4) requires the Department of Environment and Natural Resources, the Department of Commerce, and the Consumer Protection Division of the Department of Justice to study various issues related to oil and gas exploration in the State and the use of directional and horizontal drilling and hydraulic fracturing for that purpose. The agencies must report their findings and recommendations, including specific legislative proposals, to the Environmental Review Commission no later than May 1, 2012.

This section became effective June 23, 2011.

#7

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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COMMISSION CLERKS

September 28, 2011

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on January 18, 2011. All reports are available online on the Commission website (**http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received**). If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or **mariahm@ncleg.net** for assistance.

A. The following report has been submitted by the Department of Environment and Natural Resources (DENR) and is being distributed in connection with today's agenda as follows:

Annual report on the progress of water supply planning. September 1, 2011. Statutory Authority: G.S. 143-355(n). ***Agenda Item #6***

B. The following reports have been submitted and may be distributed in conjunction with a presentation at a future meeting of the Commission.

1) Department of Agriculture

a. Report on the 2011 Agricultural Water Use Survey. July 1, 2011. Statutory Authority: G.S. 106-24(b).

b. Report on the development and publication of the interim agronomic rate. July 1, 2011. Authority: S.L. 2011-198, Sec. 1.(d).

2) Environmental Management Commission

a. Quarterly reports by the EMC as to its operations, activities, programs, and progress during the previous quarters. January 15, 2011, April 15, 2011, and July 15, 2011. Statutory Authority: G.S. 143B-282(b).

b. Annual report on the desirability of requiring and feasibility of obtaining reductions in emissions of NO_x and SO_2 beyond those required by the Clean Smokestacks Act. September 1, 2011. Authority: S.L. 2002-4, Sec. 11.

3) Utilities Commission

a. Annual report on the Implementation of the "Clean Smokestacks Act." June 1, 2011. Authority: S.L. 2002-4, Sec. 14.

b. Annual report on the implementation of the Swine Farm Methane Capture Pilot Program including a program evaluation, and legislative proposals. January 1, 2011. Authority: S.L. 2007-523, Sec. 4(g), repealed by S.L. 2011-394, Sec. 19.

4) North Carolina Water Quality Work Group (RiverNet)

Annual report on RiverNet's previous year's activities, findings, and recommendations. January 30, 2011. Statutory Authority: G.S. 143-215.8D.

5) Department of Environment and Natural Resources

a. Annual report on the cost of implementing the Mining Act of 1971. September 1, 2011. Statutory Authority: G.S. 74-54.1(c).

b. Annual solid waste management report. January 15, 2011. Statutory Authority: G.S. 130A-309.12(c), G.S. 130A-309.14, G.S. 130A-309.06(c)(6), G.S. 130A-309.06(c)(8), G.S. 130A-309.06(c)(9), G.S. 130A-309.06(c)(10), G.S. 130A-309.06(c)(11), G.S. 130A-309.06(c)(12), G.S. 130A-309.06(c)(14), G.S. 130A-309.63(e), G.S. 130A-309.85, G.S. 130A-309.140, G.S. 136-28.8(g).

c. Semiannual report on the pilot program for inspection of animal waste management systems including a comparison of the costs of conducting operations reviews and inspections under the pilot program with the costs of conducting operations and inspections. April 15, 2011. Statutory Authority: G.S. 143-215.10D and G.S. 143-215.10F.

d. Annual report on the effectiveness of projects funded under the Agriculture Cost-Share Program for Nonpoint Source Pollution Control. January 31, 2011. Statutory Authority: G.S. 143-215.74(e).

e. Annual report on the Community Conservation Assistance Program. January 31, 2011. Statutory Authority: G.S. 143-215.74M(e).

f. Annual report and recommendations on the One-Stop Permit Assistance Program and the express permit and certification review program. March 1, 2011. Statutory Authority: G.S. G.S. 143B-279.15.

g. Report of Superfund cost share fund expenditures for cleanup of sites on the National Priorities List. Within 30 days of expenditure (August 22, 2011). Authority: S.L. 1999-237, Sec. 15.6.(b).

h. Report on existing laws and regulations that pertain to offshore energy exploration and production in light of the explosion, sinking and subsequent discharge of oil from the British Petroleum Deepwater Horizon offshore drilling rig by the Coastal Resources Commission. April 1, 2011. Authority: S.L. 2010-179, Sec. 3 and 5.

from the studies bill (H773)

PART XX. DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES TO STUDY IMPLEMENTATION OF STATE AND FEDERAL RULES RELATED TO EMISSIONS OF TOXIC AIR POLLUTANTS (McElraft)

SECTION 20.1. The Department of Environment and Natural Resources shall study implementation of State and federal rules related to emissions of toxic air pollutants. The study shall include:

(1) Identification of the permitted sources in North Carolina that emit toxic air pollutants as identified in rules adopted by the Environmental Management Commission and the permitted sources that emit hazardous air pollutants regulated under federal rules set out in 40 C.F.R. Parts 61 and 63 as amended.

(2) An explanation of the scope of the federal program regulating hazardous air pollutants as compared to the State air toxics program, including any differences in the sources and pollutants regulated under each program.

(3) A comparison of how the State and federal programs take public health impacts into consideration.

(4) An analysis of any co-benefits of installing pollution control equipment required to comply with federal rules in reducing emissions of toxic air pollutants regulated under the state air toxics program.

(5) A description of the additional pollution controls, operating conditions, modeling, or other measures required as a result of applying State air toxics rules to a source regulated under 40 C.F.R. Parts 61 and 63 as amended, including the incremental costs and benefits of those additional controls, measures, or modeling.

(6) Any other information relevant to an evaluation of the State air toxics program as applied to sources regulated under 40 C.F.R. Parts 61 and 63 as amended.

SECTION 20.2. In conducting the study, the Department shall request input from industries and utilities that have permitted sources of air pollutants regulated under 40 C.F.R. Parts 61 and 63 as amended or under State air toxics rules; local government; and individuals or agencies with expertise in the environmental and public health effects of those pollutants. The Department shall report the results of its study, including any recommendations for legislation, to the Environmental Review Commission of the General Assembly no later than May 1, 2012.

Control of Toxic Air Pollutants in North Carolina

DENR, Division of Air Quality
ERC Meeting - September 28, 2011

1

Topics Covered

- History of the NC Air Toxics program and the federal program
- Importance of the state program
- Differences between the state and federal programs
- Examples of how sources have complied with the state program
- Comparison of NC, SC and VA's state air toxics programs
- Remaining issues

2

Acronyms

- HAPS - hazardous air pollutants as defined by the federal program
- TAPS - toxic air pollutants as defined by the state program
- MACT - Maximum Achievable Control Technology
- GACT - Generally Available Control Technology
- AAL - Acceptable Ambient Level defined by the state program

3

NC Air Toxics Program

- Purpose:
  - Air toxics program is risk-based approach to protect NC citizens from adverse health effects resulting from exposure to toxic air pollutants
- Authority:
  - 1989 - *Executive Order*: Ambient Air Standards for Toxic Pollutants; S.L. 1989-168
- History:
  - Mid-1980's - increasing public environmental awareness
  - 1986 - NC Academy of Sciences Study
  - 1990 - NC Administrative Code Title 15A
  - 1993 - Applicability trigger changed to "last MACT"
  - 1995 - Industry questions efficacy of toxics program
  - 1996-97 - Working group formed to study toxics program issues

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History of Federal Program

- Pre-1990 - risk only approach on a pollutant basis. In 20 years, EPA regulated only 7 pollutants.
- 1990 Clean Air Act Amendments (CAAA)
  - Technology First, Then Risk
  - Required EPA to develop regulations with Maximum Achievable Control Technology (MACT) emission standards for industrial categories
  - Residual Risk assessment to follow 8 years after initial MACT standards were finalized.
  - EPA has issued 114 MACT standards since the 1990 CAAA, and proposed 4 more

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Why Does NC Regulate Toxic Air Pollutants?

- Toxic air pollutants are harmful to human health
- 38 million pounds of toxic air pollutants emitted annually
- Intent of state toxic program is to protect communities near facilities from exposure to levels of toxic air pollutants that can cause adverse health effects
- 75 % of toxic air pollution is regulated by NC under the state and federal rules

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What are the advantages?

- Benefits businesses by helping to counter allegations of adverse health impacts
- Doesn't prescribe emission source controls -- facility has flexibility to choose
- Manages emissions to levels having low risk to human health without under- or over-controlling
- Helps the state address local and individual complaints
- Provides program for safe combustion of non-hazardous used/recycled oils

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Fast Facts

North Carolina is:

- #2 chemical producer in the Southeast based on 2007 data†[1]
- #4 chemical producer in the US based on 2007 data[1]
- #3 in the Southeast reporting hazardous *air* pollutant releases to Toxics Release Inventory (TRI)[2]
- #4 in US reporting hazardous *air* pollutant releases to TRI[2]
- 6,000 facilities submitted TRI reports for 12,000 hazardous chemicals[2]

Sources:
[1] http://factfinder.census.gov/servlet/IQRTable?_bm=y&-ds_name=EC0200A1&-NAICS2002=325&-_lang=en Accessed May 2011
[2] http://scorecard.goodguide.com/ranking/rank-states.tcl?type=mass&category-total_env&modifier=na&how_many=100 Accessed May 2011

†Southeastern states - Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Tennessee and West Virginia.

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What are the economic benefits?

- **Health** –
  - Studies performed by the National Institute of Environmental Health Science and American Cancer Society show that a reduction in toxic pollutant exposure contributes to a reduction in health problems, thereby reducing the number of visits to a doctor and/or to an emergency room.
- **Property** –
  - Reduction in corrosive toxic air pollution decreases property deterioration
- **Environment** –
  - Fewer crops are contaminated or ruined by toxic air pollutants
  - Fewer people are exposed to contaminated food, which reduces people having adverse health effects
  - Fewer vistas and natural areas are irreparably damaged
  - Fewer buildings and monuments are degraded

9

Basic Differences between State and Federal Programs

- State program
  - Evaluation of pollutant concentration leaving the facility and potentially impacting nearby community
  - Evaluation required when
    - The final federal rule impacting the facility has been issued
    - Modification at a facility causes net increase in emissions of a toxic air pollutant
- Federal Program
  - Primarily technology driven
  - Required to meet technology limit if have a process unit in operation at a facility covered by a federal rule

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NC Air Toxics Program vs. Federal Air Toxics Programs

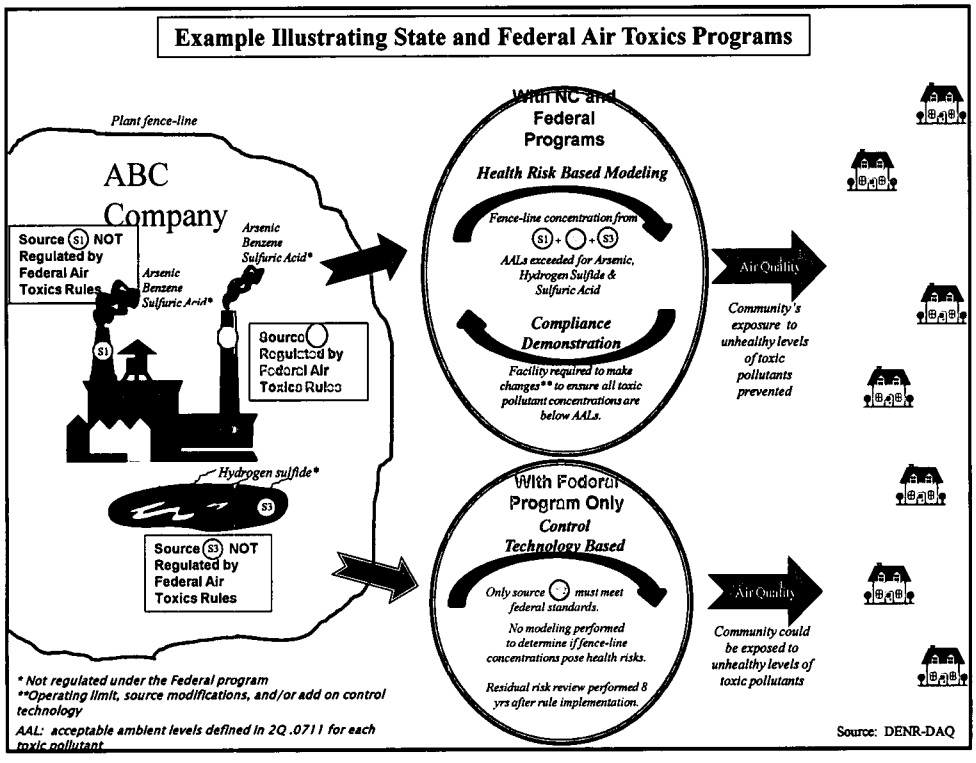
NC Air Toxics Program	Federal Air Toxics Programs
97 Toxic Air Pollutants (TAPs) – 21 TAPs are not HAPs	187 Listed Hazardous Air Pollutants (HAPs)[1]
Based on preventing exposures at a facility's property boundary to toxic air pollutants.	Primarily based on reducing emissions by source category to the lowest levels observed nationally.
Based on facility-wide emissions - pollutant by pollutant.	Focuses on specific categories of emission sources (e.g., pharmaceuticals, pulp and paper, chromium electroplating, etc.). Some emission sources at a facility may not be covered.

[1] Hazardous air pollutants regulated under Section 112 of the CAA

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NC Air Toxics Program	Federal Air Toxics Programs
Trigger – Last MACT or modification that resulted in increase of a given toxic air pollutant.	Trigger – If a process unit is covered by a MACT, the facility must show compliance within 3 years of final federal standard.
Offers flexible solutions for compliance . Facilities may choose which emission sources to address, what compliance measures are needed.	Specific control equipment or techniques may be dictated for all affected sources. Compliance alternatives may be few, expensive.
Designed to supplement and complement the federal programs. If federal rules provide sufficient protection from exposures, no further state controls are required. If federal rules fall short, state rules provide a backstop.	Federal programs not intended to comprehensively address all air toxics emissions. Were designed in anticipation that state and local air toxics programs would address local issues and federal program limitations.

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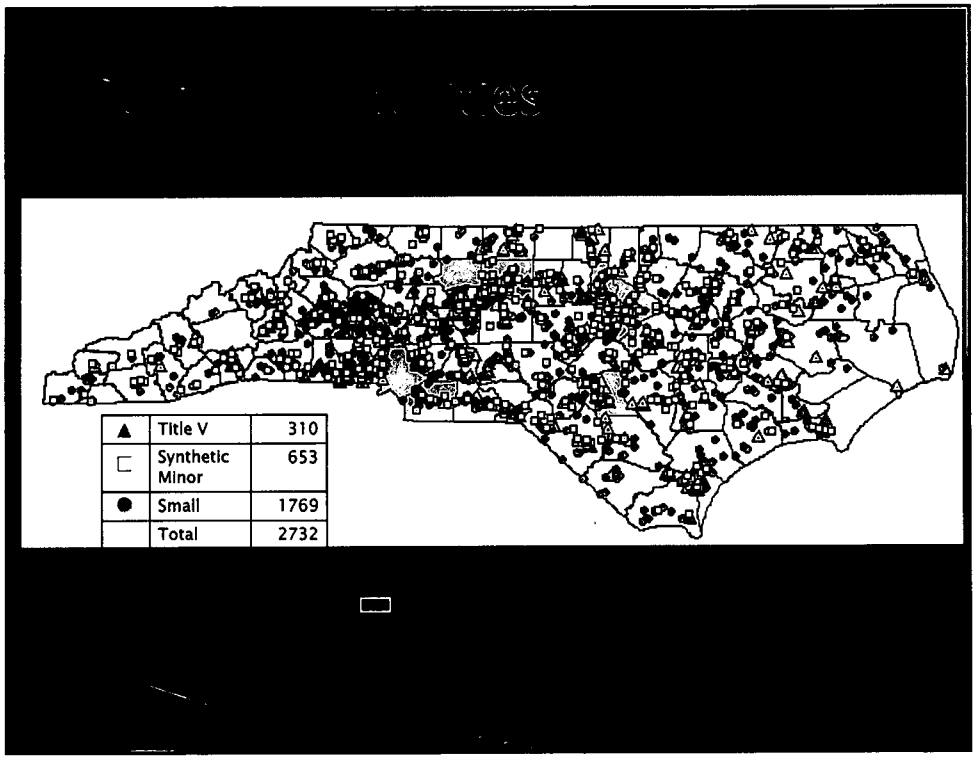


Federal and State Statistics

There are over 2,700 permitted facilities subject to federal and/or state air rules.

- 10% are subject to federal toxic air pollutant rules
- 30% are subject to state toxic air pollutant rules
- 10% are subject to both state and federal toxic air pollutant rules
- 50% of facilities are not subject to federal or state *toxic air pollutant* rules

Class	Number of Facilities	Number of Facilities Subject to State Toxic Air Rules	Number of Facilities Subject to State and Federal Toxic Rules
Title V	310	79	117
Synthetic Minor	653	270	55
Small	1769	435	85
Total	2732	784	257



What have facilities done to meet the state air toxics rules?

- Many control decisions at a facility are not solely focused on air toxics
- Some examples of what sources have done to comply include:
  - Switch Fuels
  - Increase stack height
  - Take a permit limit to restrict emissions
  - Install a control device to capture emissions
  - Reformulate solvent to lower TAP option

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2007-2010
Treatment of Combustion Sources

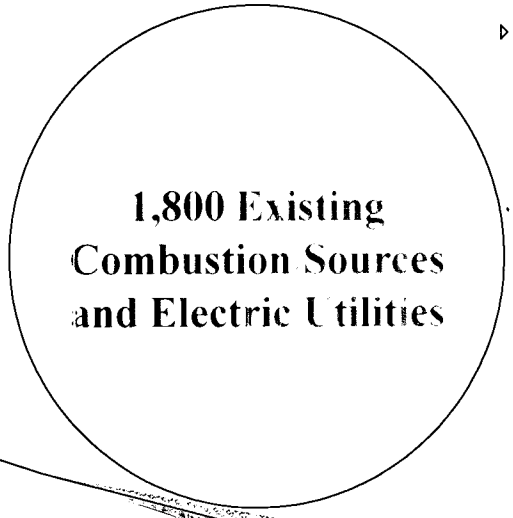
- Sept. 2004 - Original Boiler MACT promulgated
- July 2007 - US District Court of Appeals mandated the vacatur and remand of the Industrial Boiler MACT Rule
- Sept 2007 - The Air Quality Committee (AQC) of the Environmental Management Commission (EMC) requested a "menu of options" for addressing toxic air emissions from combustion sources
- Oct 2008 - Public hearings on toxics changes
- May 2009 - The EMC approves changes to the combustion source exemption in the NC air toxics rules
- July 2010 - The combustion source exemption changes became effective

Background

- **Combustion Source TAP Exemption**
  - 15A NCAC 2Q .0701(b) - Within one year of promulgation of the Boiler MACT, NCDAQ will determine whether additional measures are necessary to control state-regulated TAP emissions from combustion sources.
- **Boiler MACT**
  - Promulgated: 69 FR 55217 (Sept. 13, 2004)
  - Vacated: *NRDC v. EPA,* 489 F.3d 1250 (July 8, 2007)

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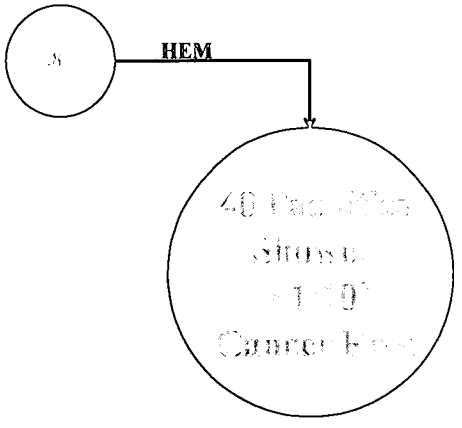
Risk-Based Approach to Address Existing Boilers



- NCDAQ Toxics Branch assessed inhalation risks from existing combustion sources and electric utilities using US EPA's Human Exposure Model (HEM-3) and actual 2004 emissions data.

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Risk-Based Approach to Address Existing Boilers



- ~40 facilities presented a greater than 1 in a million cancer risk.
  - These 40 facilities were asked to submit AERMOD dispersion modeling showing potential ambient impacts of TAP emissions.

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Risk-Based Approach to Address Existing Boilers



- 18 facilities showed ambient impacts exceeding an Acceptable Ambient Level (AAL).
  - These facilities were subject to the Director's Call. Notification letters sent out between Apr.-Sept. 2009.
  - Each facility given 180 days to submit a permit application requesting operational limits or emissions controls necessary to reduce impacts below the AALs.

*** What was the most common pollutants of concern?** Arsenic, and to a lesser degree, ldehyde.

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What Result?

- Limit/Remove Fuels from Permit
- Limit TAP Emissions from Non-Combustion Sources
- Increase Stack Heights
- Remove Generators or Boilers
- Limit Hours of Operation for Generators
- Fuel Analysis to Develop Site-Specific Emission Factors
- Three companies given additional time due to SAB Evaluation of Arsenic AAL

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Comparison of NC Air Toxics Program to SC and VA

	Pollutants Covered	Form of Standards	Applicability Trigger	Compliance Demonstration Options	Exemptions	Ability to Address Issues
NC	97	1-hr, 24-hr & annual	Last MACT[1]	Modeling, inhabitability, new toxicity information, site specific risk assessment, economic hardship, technical infeasibility	28 general exemptions, including existing combustion sources	Unacceptable health risk
SC	250	24-hr	All facilities in 1991	Modeling	HAPs covered by a federal rule	Case-by-case
VA	187	1 hr or annual[2]	All sources that emit one or more toxic air pollutants	Existing Sources: modeling New / Modified sources: case-by-case Best Available Control Technology for toxics and modeling	All sources regulated or exempted under federal rules; Pollutants without TLV, Boilers[3]	Case-by-case

[1] Exemption for new and modified combustion sources removed through rule change effective July 10, 2010
[2] Based on occupational health standards Threshold Limit Value (TLV)
[3] Boiler or generator that burns only natural gas, #2 fuel oil, #4 fuel oil, #6 fuel oil, propane, or kerosene

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Positive Programmatic Example

- USA Today Article – "The smokestack effect – Toxic air and America's schools", 12/8/08
  - Screening level modeling based on 2005 emission data from more than 20,000 industrial facilities
  - relative ranking 127,800 schools nationwide
  - lists seven North Carolina schools in areas of highest modeled levels of toxic chemicals
  - Monitoring at 95 schools nationwide which showed elevated levels of toxics at 64 schools (***ZERO*** in NC)
- EPA initiated the Schools Monitoring Initiative
  - Selected schools for monitoring using a number of factors
    - computer modeling analysis,
    - USA Today article
    - ***Consultation*** with state and Local air agencies
  - ***ZERO NC Schools were recommended for additional monitoring***
    - Internal review indicated that the nearby toxic air pollution emissions posed no unacceptable health risk to school population
    - State air toxic pollutant regulations were protecting school population from adverse health effects resulting from exposure to toxic air pollutants

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Outstanding Issues/Questions

- Whether the state program duplicates federal program
- Need to understand issue of frequency of toxics modeling requirements
- What are the costs to industry to comply with the NC Air Toxics program and what are public health benefits from the program
- Completion of air toxics study as outlined in Study Bill would be beneficial to get a full understanding of all issues

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Contact Information

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- NCDENR, Division of Air Quality
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- (919) 715-0971
- www.ncair.org

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Water Supply / Water Resources Update 2011

Environmental Review Commission

September 28, 2011

1

Division of Water Resources

- Water Resource Management Section
  - Strategic statewide water resource planning
  - Interbasin transfers / Drought management
- Public Water Supply Section
  - Ensures safe drinking water for citizens & visitors of NC
  - Technical assistance & oversight to 6300 public water systems
- Water Projects – State sponsor for:
  - Dredging / beach nourishment projects
  - Statewide local grant program for water-related projects

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Overview

- Hydrologic Model Status
- Ecological Flows Science Advisory Board
- Implementation of HB 609 (SL 2011-374)
- Pending Interbasin Transfers (IBTs)
- Update on CCPCUA
- Drought Response
- Incorporation of Public Water Supply into DWR

3

Hydrologic Model Status

- SL 2010-143 mandates the development of hydrologic water models for all 17 river basins
- Cape Fear & Neuse already completed
- Tar-Pam and Broad to be completed in 2011
- Roanoke, Hiwassee, and Little Tennessee scheduled for commencement in 2012
- No additional funding needed to complete all models
- Most robust hydrologic modeling program in SE
- Comprehensive stakeholder process during model development, including training for local govts.

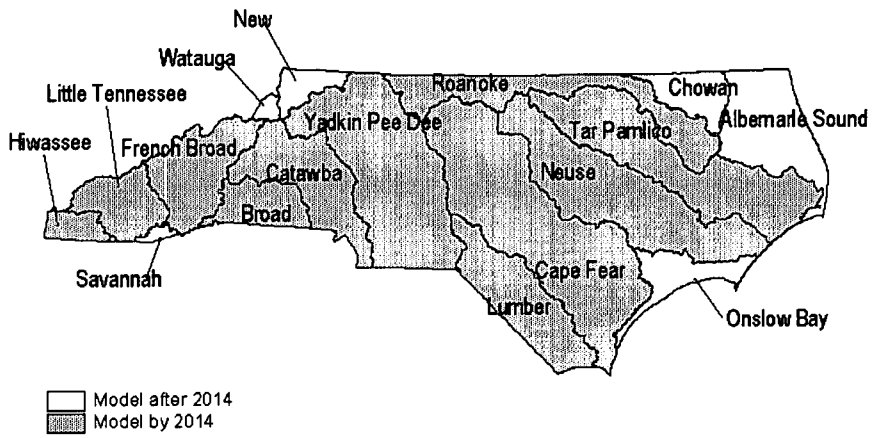
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Hydrologic Model Schedule

Year Completed	River Basin Model
2011	Tar-Pamlico & Broad
2012	Roanoke, Update for Cape Fear & Neuse
2013	Hiwassee & Little Tennessee
2014	French Broad & Lumber
2015	New & Watauga
2016	Catawba & Savannah
2018	Albemarle Sound, Chowan, & Onslow Bay
2019	Yadkin-Pee Dee

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2014 Model Completion



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Ecological Flows Science Advisory Board (SAB)

- Establishment mandated under SL 2010-143
- Tasked to develop methodology to determine eco-flows for inclusion in hydrologic models for planning purposes
- Ecological flow: Water to maintain ecological integrity
- Highly complex issue
- SAB composed of reps from wide range of stakeholders
- Now meeting monthly / Has met seven times to date
- Good progress being made / Meetings on internet
- Potential completion date: Late 2012 - 2013 (more likely)
- SAB is science body – not policy making

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Implementation of SL 2011-374 (HB 609)

- Development of Future Water Supplies
- Improve Water Efficiency

8

Development of Water Supplies

- Dept. tasked to assist local govts in the analysis and assessment of options to meet future water needs
- Fact sheet developed
  - Sent to local govts via NCLM & NCACC
- Temporary staff hired to implement requirements
- Process & operating procedures being developed
- Local government interest:
  - Raleigh, Cleveland County, New Hanover County

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Improve Water Efficiency

- Dept. developing water efficiency BMP manual
- Will be composed of local govt. success stories
- Local govts. surveyed about water efficiency measures
  - Response has been very positive
- Statewide outreach and technical assistance:
  - Webinars via the internet
  - Statewide assistance meetings

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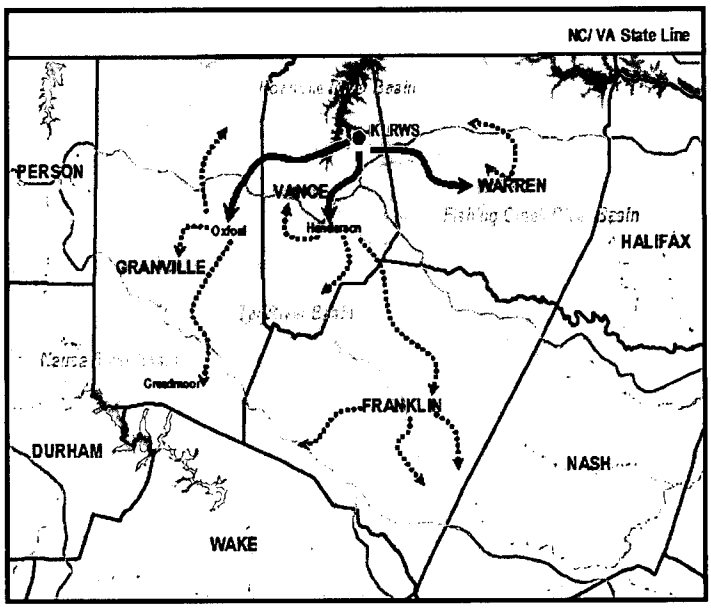
Pending Interbasin Transfers

- Kerr Lake Regional Water System
- Request to transfer approx. 26 million gallons/day out of Roanoke River Basin (Kerr Lake)
- EIS out for public review & comment in 2012

- Potential for uranium mining in VA portion of Roanoke River Basin

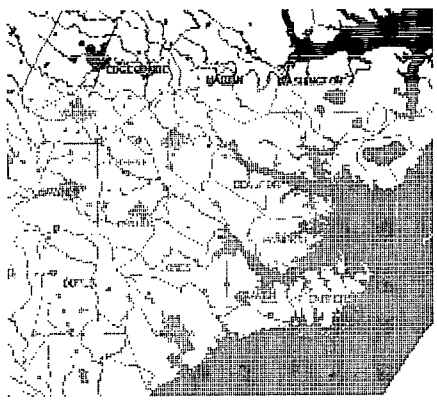
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Proposed Kerr Lake Regional Water System IBT



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Central Coastal Plain Capacity Use Area (CCPCUA)



- 15 county region in the coastal plain
- Permitting of ground water withdrawals required above 100,000 gallons per day
- Registration of all withdrawals above 10,000 gallons per day (surface or ground water)
- Reductions in withdrawals required for certain aquifers

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Aquifer Problems in the Central Coastal Plain

- Significant problems with yields from wells in late 1990's
- Black Creek aquifer exhibited evidence of "dewatering"
- Salt water encroachment on major pumping centers
- Alarming drop in Black Creek/Upper Cape Fear Aquifers
- Water withdrawn at a rate that exceeded recharge
- Potential irreparable damage to aquifers
- CCPCUA Rules effective on August 1, 2002

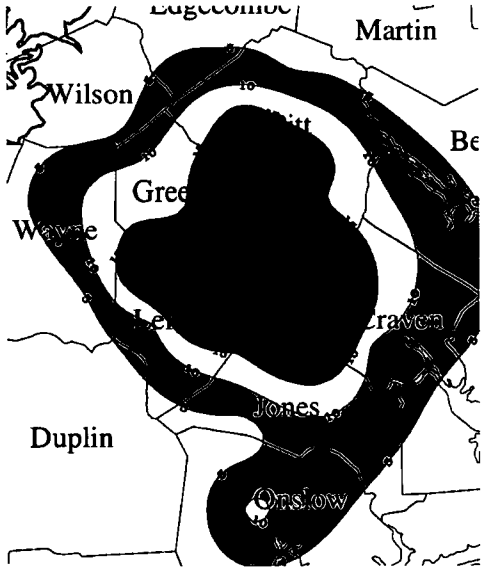
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CCPCUA Update

- Aquifers continue to recover
- Some conflict over Castle Hayne aquifer between Jacksonville - Camp Lejeune
  - Camp Lejeune dependent upon Castle Hayne aquifer
  - Increased Jax use of Castle Hayne possibly affected Camp Lejeune's well field
  - Initiated steps to limit Jax impact on Castle Hayne
  - Continue monitoring of the situation

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Upper Cape Fear Aquifer Recovery



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Black Creek Aquifer Recovery



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Greenville Aquifer Storage & Recovery System (ASR)

- Greenville testing system to store treated surface water in aquifer for retrieval and use at a later date
- Injection testing commenced in 2011
- By June, 76 million gallons had been injected in aquifer
- 7 million gallons were successfully withdrawn
- Testing expected to continue for several more months

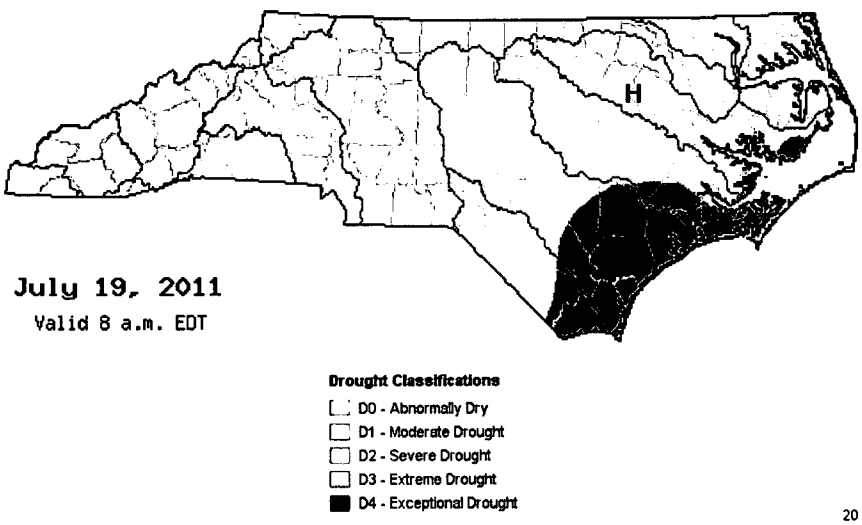
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Drought Response

- Water Shortage Response Plans (WSRP)
  - Mandated in SL 2008-143
  - 533 of 551 completed and approved by Dept.
  - Remaining 18 pending local govt. approval
  - 321 of the 551 drafted, developed, and composed by DWR Staff for local governments

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2011 Drought



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Incorporation of Public Water Supply into Div. of Water Resources

- On July 1 Public Water Supply moved from Div. of Env. Health to Div. of Water Resources
- Potential for future efficiencies & economies of scale
- Removal of duplicative reporting
- Assistance from PWS Regional Office Staff to regulated community:
  - Developed and posted approximately 1600 notices in lieu of taking enforcement action
  - Use of digital camera to troubleshoot well problems for non-profit organizations

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Summary

- Hydrologic Model Status
  - Most of NC completed by 2014/no new funding required
- Ecological Flows Science Advisory Board
  - Meeting monthly/progress underway
- Implementation of HB 609 (SL 2011-374)
  - Fact sheet/preparation of operating & contract procedures
- Pending Interbasin Transfers (IBTs)
- Update on CCPCUA
  - Aquifers continue to recover/Camp Lejeune-Jax issue
- Drought Response
- Incorporation of Public Water Supply into DWR

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Contact Information

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Department of Environment and Natural Resources

Division of Water Resources

STATUS REPORT TO THE GENERAL ASSEMBLY
ON
WATER SUPPLY PLANNING
AUGUST, 1 2010 THROUGH JULY 31, 2011

Executive Summary

Assuring a sustainable water supply for the citizens of North Carolina is the primary mission of the N.C. Division of Water Resources (DWR). To carry out this responsibility, the division administers several monitoring, planning and regulatory programs.

In partnership with the United States Geological Survey (USGS), the division monitors the availability of water across the state through a network of monitoring wells and stream gages. DWR monitors water withdrawals using data reported under mandatory registration and reporting programs. Additional information is received from annual water use reporting by withdrawers required to register their withdrawals and water systems required to submit a local water supply plan, as well as special data requests during drought conditions. Beginning in 2009, DWR also began receiving summaries of an annual survey of agricultural water users conducted by the N.C. Department of Agriculture and Consumer Services (DA&CS).

The division administers the local water supply planning program, which was established after serious droughts in the 1980s disrupted local water supplies. DWR provides assistance to community water systems with the preparation of their local water supply plans. The information contained in these local plans, combined with data from other sources, provides the water use information that is critical for the development of hydrologic models. Basin-specific hydrologic models simulate surface water volumes as water moves downstream. The models support the development of river basin water resources plans. The division is preparing long-term water resource plans for each of the state's 17 major river basins in partnership with local governments, water users and other stakeholders. The long-term water resources plans will provide valuable information for local and state decision makers for the preparation of drought response plans and the management of sustainable water supplies to support economic development while maintaining environmental quality.

The division also monitors and regulates water withdrawals associated with the transfer of surface water between designated river basins and water use in designated capacity use areas. As staff to the Environmental Management Commission, DWR processes applications from water users that wish to transfer more than 2 million gallons per day of surface water between designated river basins and makes recommendations to the commission. DWR conducts evaluations of resource conditions, oversees rule development and issues water withdrawal permits in designated capacity use areas. In addition, DWR chairs the Drought Management Advisory Council, manages drought response activities and is the lead agency for the Department of Environment and Natural Resources for the relicensing of hydroelectric projects. All of these activities affect and are affected by water supply planning issues.

Overview

The Division of Water Resources is required to report, by Sept. 1 of each year, to the Environmental Review Commission and the Joint Legislative Commission on Governmental Operations on the development of the state water supply plan by G.S. 143-355(n). The state water supply plan compiles the information and water use projections contained in the local water supply plans submitted under G.S. 143-355(l). It identifies potential problems in meeting expected water demands in order to assure the availability of adequate supplies of water to protect the public health and support economic growth. These issues are addressed

from a river basin perspective with potential conflicts and shortages identified using hydrologic models that simulate surface water availability within each basin

This report provides a summary of division activities that support water resources planning and the maintenance of sustainable water supplies for the citizens of the state.

Highlights

During the period covered by this report, DWR:

- Added 17 wells and eight stations to the groundwater monitoring network,
- Managed 237 active groundwater withdrawal permits and registrations of 49 other water withdrawers in the Central Coastal Plain Capacity Use Area, which facilitated the continued recovery of the water level in these critical aquifers,
- Established the Ecological Flow Science Advisory Board and held five meetings of the board,
- Revised the computer-based local water supply plan submission program to address requirements added by recent legislation,
- Coordinated the issuance of a interbasin transfer certificate by the Environmental Management Commission to transfer surface water out of the Tar River basin to Greenville, Farmville, Winterville and Greene County, collectively,
- Is approaching the completion of river basin hydrologic models for the Broad and Tar River basins,
- Is updating existing river basin hydrologic models for the Cape Fear, Neuse and Roanoke River basins,
- Collected data on water usage for 2010 from 518 water systems required to prepare a local plan and on 1,159 other registered water withdrawers,
- Assisted 530 local water systems in preparing a water shortage response plan that meets the minimum criteria set by legislation,
- Characterized water supply issues and threats related to climate variability as part of the department's climate change initiative,
- Commenced the implementation of Session Law 2011-374 (House Bill 609), which authorizes the division to partner with local governments in the development of water supply reservoirs and other water supply sources.

Monitoring Water Resources

The division maintains groundwater and surface water monitoring networks directly and in partnership with federal agencies. The data from these networks provide essential information on the conditions of water resources throughout the state. North Carolina cooperates with the USGS to maintain stream gage sites with near-real time data collection capabilities. The division also maintains an extensive network of ground water monitoring wells. More than two-thirds of these wells have data recorders that collect daily water level information that is collected and processed quarterly. Much of the ground water monitoring and data collection focuses on improving the understanding of the complex aquifer structures in the Coastal Plain.

The ongoing support of the General Assembly has allowed the division to continue improving the data on aquifer conditions in the Coastal Plain by expanding the monitoring well network.

Since 1998, DWR has added 166 wells at 47 monitoring stations in the Coastal Plain, bringing the total number of active wells to 307 at 78 monitoring stations in the 15 counties in the Central Coastal Plain Capacity Use Area. The monitoring well network provides vital data for evaluating aquifer conditions and the success of the Central Coastal Plain Capacity Use Area rules. The division will continue to expand the monitoring well network statewide, as funds permit, to improve data for groundwater management. Data on groundwater conditions are available on the division's website.

The division has joined with the State Climate Office at N.C. State University, the U.S. Army Corps of Engineers, the U.S. Geological Survey and other data collection agencies to develop a uniform database to store and disseminate water resources data. Water resource data are available on the division's website at www.ncwater.org .

Monitoring Water Use

For almost two decades, North Carolina has required registration of large surface water and groundwater withdrawals. Owners of agricultural operations must register their water use if the sum of withdrawals for their facilities is 1 million gallons, or more, on any day. Currently there are approximately 73 owners that have registered agricultural water use. Owners of non-agricultural operations must register their water use if the sum of withdrawals is 100,000 gallons, or more, on any day. Currently there are approximately 921 owners that have registered non-agricultural water use. Registrations must be updated at least every five years. The 550 local government water systems and community water systems that regularly serve 1,000 or more service connections, or 3,000 or more individuals, meet the registration requirement by submitting a local water supply plan.

Rules governing water use during droughts, which became effective in 2007, require anyone who must register a water withdrawal to annually report water use data. Of the registered users not required to prepare a local water supply plan, DWR collected data on water usage in 2010 for 1,159 facilities. Water use data submitted directly to DWR are supplemented by survey data submitted to the DA&CS, which summarizes data by county and river basin for unregistered agricultural operations that withdraw 10,000 gallons of water, or more, per day. DA&CS's 2010 data summary is based on information submitted by 1,420 agricultural operations.

Local Water Supply Planning

After the serious droughts in the 1980s, the General Assembly enacted legislation to require water supply planning at the state and local level. The intent of the action was to assure the availability of adequate supplies of good quality water to protect public health and to support economic growth. Units of local government that supply, or plan to supply, water to the public and other large community water systems are required by G.S. 143-355(l) to develop local water supply plans. These local plans describe current water use and future water needs and identify the water system's expected future sources of water. The plans provide valuable information about how much water communities are using and how much they anticipate needing in the future. Information contained in the local plans supports local, regional and

statewide water supply planning and is available on the division's website at www.ncwater.org.

Local water supply plans are reviewed for internal consistency and consistency between interdependent water systems. Completed plans are to be adopted by the water system's local governing board and must be updated at least every five years. Passage of Session Law 2008-143 expanded DWR's plan review responsibility to include plan approval and also established approval criteria. The first set of plan updates to face approval review will be the 2012 plans to be submitted in 2013. The department has developed approval criteria for these plans in consultation with representatives of local government water systems.

Session Law 2010-150 added a requirement that a local plan must be revised when a water system's foreseeable future water needs reaches 80 percent of its available supply, or when its seasonal demand exceeds 90 percent. A methodology to identify systems that meet these criteria has been added to the online submission program and guidelines to assist water systems in complying with these requirements have been prepared.

The number of water systems that are required to prepare a local plan changes over time as existing water systems merge and new ones are formed. Since the first round of local plans describing conditions in 1992, DWR has received submissions from 664 planned and operating water systems. In 2010, 550 water systems met the criteria requiring them to develop a local water supply plan. Of these, 518 systems submitted annual water use figures for 2010.

North Carolina Water Supply Planning

The General Assembly mandated development of a North Carolina Water Supply Plan, or state plan, at the same time that it acted to require preparation of local water supply plans. The local water supply plans were intended in part to provide information necessary for an evaluation of potential water supply conflicts in the state plan. As mandated by law, the state plan summarizes information contained in the local water supply plans. The first version of the state plan was based on information from local plans submitted in the 1992, 1997 and 1999 water withdrawal registrations. It summarized water use by major river basin and identified areas of concern where water availability, or conflicts between users, could limit the ability to meet water demands. The analysis of potential limitations on the ability of water systems to satisfy expected demand was based primarily on the staff's understanding of expected population growth and general water availability. The N.C. Water Supply Plan is available on the division's website.

In the process of developing the state plan, the division's staff identified a need for more specific water availability information to inform the analysis. To this end, the division began work on computer-based hydrologic models that could simulate historical water resource conditions and characterize natural variations in water availability. The ability to identify when and where water demand may exceed available water resources provides valuable information to support sustainable water supply planning and effective drought response planning. Currently, the division uses computer models that simulate surface water availability in combination with water withdrawal data to provide a more reliable analysis of

potential water supply conflicts in each river basin. The river basin summary sections of the N.C. Water Supply Plan will be updated as the river basin models and analyses are completed.

The current models still lack a major component that must be included in any comprehensive river basin model. To date, there is insufficient data and analysis to identify the volumes and patterns of water flows needed to protect the ecological integrity of aquatic resources. Session Law 2010-143, passed in July 2010, supports the division's approach by mandating development of river basin hydrologic models. It also recognized the importance of addressing ecological flow needs in the models and established a Science Advisory Board to recommend methodologies to use. A summary of the board's work to date and information related to identification of ecological flows is available on the division's website.

Planning for Future Water Needs

To further the goal of assuring the availability of adequate supplies of water in the future, the Division of Water Resources is developing a river basin water resources plan for each of the major river basins in the state. These plans will support the management of the state's river basins and provide reliable, quantitative tools to plan for sustainable water use and support objective management and regulatory decisions.

Data submitted to the division through the water supply planning program, the water withdrawal registration program, capacity use area reporting requirements and annual water use reporting provide critical information for the river basin planning program.

River basin water resources plans provide a basin analysis of estimated future water supply withdrawals using a computer-based hydrologic model that simulates water flow in a basin. The hydrologic model provides a tool to analyze the effects of future water withdrawals and wastewater discharges over the range of river flow variability that occurred in the historical record. By analyzing the water needs expected in 2050, and evaluating these future demands with respect to known flow variability, DWR is able to identify areas where supplies may not be adequate to meet projected demands, as well as when and where water use conflicts may develop. The river basin water resources plans and associated hydrologic models will provide the division, local governments and other water users a reliable, quantitative framework within which to plan for sustainable and cost-effective water sources to meet future needs.

The first of these plans was the Cape Fear River Basin Water Supply Plan, developed in 2002 as a tool for the analysis of allocations of water supply storage in B. Everett Jordan Reservoir. The prototype hydrologic model was updated with the technical and financial support of water users in the basin that recognized the value of the model as a water supply planning tool. A draft of an updated Cape Fear River Basin Water Supply Plan based on the updated model and water demand projections was developed. A summary of the modeling results is available on the division's website. Before the updated plan was finalized, the division received a request to initiate a new review of allocations and options for water supply storage in Jordan Lake reservoir from a group of Triangle communities. To support this effort, the Cape Fear and Neuse River hydrologic models are being updated to expedite the analysis of regional water supply management options.

In July 2010, the division released the Neuse River Basin Water Resources Plan showcasing a revised format intended to be the prototype for future basin plans. Water demand projections for 20 years and 40 years in the future were analyzed using the newly developed Neuse River Basin Hydrologic Model. The model includes a 76-year record of hydrologic conditions that includes high-flow and low-flow conditions including several significant droughts, and the drought of record for the basin.

As noted in previous reports, models were constructed for the Catawba and Yadkin River basins in conjunction with the relicensing of the hydropower projects on these rivers. The division worked closely with the utility companies and other interested parties in these basins to estimate long-term water supply needs that were then included in the modeling of proposed management options for the future. These analyses formed the basis of settlement agreements included with the hydropower license applications submitted to the Federal Energy Regulatory Commission (FERC). The Catawba River Basin Water Supply Plan was based on this relicensing work. The water supply components of the modeling will be reviewed when FERC issues new licenses for the hydropower projects and finalizes the management schemes that will apply for the next several decades. The models developed for these basins will be reviewed and, if they can be revised to meet the criteria established by Session Law 2010-143, they will become the basis of future water resource planning by the department.

The Division of Water Resources, and the Division of Water Quality (DWQ), are working together to coordinate basin planning efforts. DWQ has been developing basinwide water quality plans since the early 1990s. These plans provide valuable information on current water quality conditions and the areas that require additional management efforts to protect the water quality of the state's surface water resources. DWR's river basin water resources plans evaluate quantity-related aspects of surface water resources. They identify possible changes to stream flows as the population grows and water withdrawals increase in the future. Staff members of both divisions are exploring ways to combine the information from both sets of plans to improve overall water resource management. A coordinated document, discussing the relationships of the findings in the Neuse River Basinwide Water Quality Plan and the Neuse River Basin Water Resources Plan, will be available later this year.

Planning for Water Shortages

After the 1998-2002 drought, the General Assembly enacted new requirements for water shortage response planning. Session Law 2002-167 added requirements for water systems to describe in their local water supply plan how the water system will respond to drought and other water shortage emergencies and continue to meet essential public water supply needs during the emergency. In 2007, the Environmental Management Commission adopted rules providing guidance on what information should be included in these water shortage response plans. Session Law 2008-143 strengthened the requirement for water shortage response plans and gave the department authority to approve or disapprove the plans. If a plan fails to include the required elements and is disapproved, the submitting water system is required to implement default water conservation measures set out in 15A NCAC 02E .0600 during extreme and exceptional drought conditions.

DWR developed protocols for the review of water shortage response plans in consultation with representatives of local governments and water utilities. The division has notified 530 systems that their plans meet the minimum criteria established.

Water resources in the state are evaluated weekly by the N.C. Drought Management Advisory Council. The technical committee of the council regularly monitors water resource conditions and consults weekly with the authors of the U.S. Drought Monitor to ensure that the weekly drought status accurately portrays conditions in North Carolina. The results of these evaluations can be seen at the N.C. Drought Management Advisory Council's website.

Hydropower Facility Relicensing

The Federal Energy Regulatory Commission (FERC) licenses non-federal hydroelectric generation projects on navigable waterways. Several existing hydroelectric projects in North Carolina have license applications currently pending before the commission: Duke Energy's Catawba-Wateree Hydro Project and Nantahala Area Projects; Alcoa Power Generating Inc.'s Yadkin Project; and Progress Energy Carolinas Inc.'s Yadkin-Pee Dee River Project. The FERC has not issued new licenses for these projects and the applications remain under review. In some cases, the final decision on relicensing has been affected by legal challenges. Since the old licenses have expired, these projects are operating under annual licenses that extend the operating rules in the old licenses on a year-to-year basis. When and if the new licenses are issued, the ecological flows and recreational opportunities included in the negotiated settlement agreements will be implemented.

Regulation

Central Coastal Plain Capacity Use Area (CCPCUA)

The Water Use Act of 1967 provides a mechanism for regulating water withdrawals in areas where water use must be coordinated to protect its availability. The law allows the Environmental Management Commission to designate a capacity use area if water use has grown to the extent that competing uses must be managed, or the ability of the water resource to replenish itself is threatened.

The CCPCUA is the only designated capacity use area in the state. The rules governing its management became effective on Aug. 1, 2002. The rules, which were designed to gradually reduce groundwater withdrawals from the endangered Black Creek and Upper Cape Fear aquifers, apply in 15 designated counties in the central Coastal Plain. The rules encourage development of alternative sustainable sources of water and regulate groundwater withdrawals through a permitting system. Anyone withdrawing more than 100,000 gallons a day of ground water must apply for and receive a permit from the Division of Water Resources. Currently, 237 active permits for groundwater withdrawals exist in the CCPCUA. In addition, 49 registered water withdrawers do not need a permit, but withdraw between 10,000 and 100,000 gallons in a day. The division continually monitors conditions in the affected aquifers and regularly updates the Environmental Management Commission. Public water supply systems in the central Coastal Plain have made significant progress toward meeting reduction goals through development of regional water authorities and other water-

sharing arrangements. Steps taken to reduce withdrawals from the depleted aquifers have already shown measurable benefits.

In Sept. 2008, the Neuse Regional Water and Sewer Authority began providing water to member communities from a new surface water treatment plant on the Neuse River. The new facility made it possible for several communities that had previously relied on ground water to switch to a surface water source. Start-up of the new facility has produced demonstrable improvements in regional groundwater levels. DWR monitoring indicates that ground water levels have already risen by up to 40 feet in some areas. These improvements reinforce the premise of the capacity use area rules that by reducing ground water withdrawals, aquifers are allowed to recover. Water level recoveries are also occurring near the cities of Jacksonville and New Bern, where well fields in the Castle Hayne aquifer and treatment plants came on-line in 2010. Additional information on the CCPCUA and the associated rules are available on the division's website at www.ncwater.org.

Interbasin Transfer of Surface Water

Many communities in North Carolina are located on or near the high ground that creates the boundaries between river basins. Other communities are located in the headwaters of river basins where the limited water supply has proven to be inadequate as the economy and population of the state has grown. In these situations, municipal water systems may need to move water between river basins. Carefully regulated interbasin transfers can be the most practical, economical and environmentally sound way to provide water and sewer service to the residents of some communities and to support economic growth.

In 2007, the General Assembly made significant changes to the laws regulating surface water transfers. Session Law 2007-518 expanded public notice requirements for proposed interbasin transfers and specified additional criteria to be considered by the Environmental Management Commission in deciding whether to grant an interbasin transfer certificate. The changes became effective on Aug. 31, 2007.

Session Law 2010-155 again changed the effective date of the 2007 requirements for some applicants. For proposed interbasin transfers intended to supplement ground water supplies in the CCPCUA, the effective date was moved to Jan. 1, 2013. The 2010 legislation also created a new classification of an isolated river basin and made the 2007 requirements effective on July 1, 2020, for proposed transfers of surface water into those basins. Session Law 2011-298 provides an exemption to the requirement to obtain permission from the Environmental Management Commission for up to 8 million gallons per day of surface water transferred to supplement ground water sources in the CCPCUA.

For purposes of the interbasin transfer laws, the 38 river basin boundaries are defined in G.S. 143-215.22G and delineated on an associated map. Session Law 2008-198 extended the basin lines for interstate river basins into neighboring states for the purposes of implementing the notice requirements set out in G.S. 143-215.22L. Details of the Interbasin Transfer Program and the statutory requirements are available on the division's website.

While many communities move water between river basins most do not exceed the 2 million gallons per day threshold, or the transfers were grandfathered in the legislation. Only five interbasin transfer certificates have been issued under G.S. 143-215.22I and the precursor legislation. Charlotte Mecklenburg Utilities has a certificate to transfer up to 33 million gallons per day from the Catawba River to the Rocky River basin. Cary, Apex, Morrisville and Wake County jointly hold a certificate to transfer up to 24 million gallons per day from the Haw River basin to the Neuse River basin. The Piedmont Triad Regional Water Authority has permission to transfer up to 30.5 million gallons per day from the Deep River to the Haw River and Yadkin River basins. The cities of Concord and Kannapolis received permission to transfer up to 10 million gallons per day from the Catawba River basin and 10 million gallons per day from the Yadkin River basin into the Rocky River basin. In November 2010, the Environmental Management Commission granted a certificate allowing transfers for Greenville, Farmville, Winterville and Greene County. The certificate, granted with conditions, allows transfers of up to 8.3 million gallons per day from the Tar River to the Contentnea Creek basin and 4 million gallons a day from the Tar River to the Neuse River basin.

The completion of the Neuse Regional Water and Sewer Authority's surface water treatment facilities on the Neuse River allowed member communities to reduce ground water pumping within the CCPCUA. This change in water supplies would have required the Authority to obtain an interbasin transfer certificate if they had not been granted relief by the General Assembly. Session Law 2011-298 declared that an interbasin transfer certificate is not required for a transfer of water from one river basin to another river basin to supplement ground water supplies in the 15 counties designated as the Central Coastal Plain Capacity Use Area. The exemption expires once the cumulative amount of water transferred for this purpose exceeds 8 million gallons per day and additional transfers beyond that will require a certificate.

Pending Interbasin Transfer Requests

The Kerr Lake Regional Water System has indicated it intends to submit a petition requesting an increase in its existing 10 million gallons per day interbasin transfer. The regional water system will request an increase to 24 million gallons per day. The system proposes to transfer water withdrawn from Kerr Lake on the Roanoke River to public water systems in the Tar, Neuse and Fishing Creek river basins. DWR expects to receive a draft Environmental Impact Statement for this proposed transfer increase by the end of 2011.

Brunswick County has submitted a notice of intent to apply for an expansion of its grandfathered interbasin transfer. The county currently receives surface water from the Cape Fear River through the Lower Cape Fear Water and Sewer Authority and provides treated water to customers in the Cape Fear, Waccamaw and Shallotte river basins. Preliminary discussions indicate they would likely be requesting an increase from the grandfathered transfer amount of 10.44 million gallons per day to 19.29 million gallons per day. A draft Environmental Impact Statement is expected sometime in 2012.

Implementation of Session Law 2011-374

Session Law 2011-374 expanded the responsibilities of the department with regards to identifying water supply needs and appropriate sources to meet those needs. It mandates that the department cooperate with units of local government on these projects based upon the execution of a formal agreement between the parties. In addition, it designates the department as the primary state agency to cooperate with other state and federal agencies in the planning and development of water supply sources and water storage projects in the state.

Local governments may request departmental assistance and enter into a negotiated agreement with the department. The department will then coordinate the work necessary to identify the preferred water supply alternatives adequate to meet the long term needs documented in the local government's local water supply plan. The selected alternative sources must meet criteria specified in the legislation as well as requirements specified in the North Carolina Environmental Policy Act (NCEPA). If the suite of options from which a preferred alternative will be chosen includes projects that will require federal approvals, then the alternatives analysis will have to satisfy the appropriate federal decision-making criteria.

A preferred alternative selected by the department will be binding on all state agencies and will be recognized by the Department of Administration as satisfying the requirements of the NCEPA and any other state permits requiring assessments of alternatives. The department may also assist the local government in the pursuit of the federal permits necessary to implement the preferred alternative. If the local government entity is a regional water system it will also have the option to request that the department become a co-applicant for all required federal approvals necessary to implement the preferred alternative.

The Division of Water Resources is developing a protocol to implement the provisions of this legislation. Local governments will be notified in August 2011 of this new option available to assist them in developing sustainable water sources to meet their long-term water supply needs.

North Carolina General Assembly
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September 6, 2011

COMMITTEES:
AGRICULTURE/ENVIRONMENT/NATURAL RESOURCES
APPROPRIATIONS-BASE BUDGET
APPROPRIATIONS-HEALTH & HUMAN SERVICES
FINANCE (CO-CHAIR)
JUDICIARY II
MENTAL HEALTH & YOUTH SERVICES (CHAIR)
PROGRAM EVALUATION (VICE-CHAIR)
RULES & OPERATIONS OF THE SENATE
STATE & LOCAL GOVERNMENT

BY HAND DELIVERY

The Honorable Roy Cooper
Attorney General of North Carolina
North Carolina Department of Justice
114 West Edenton Street
Raleigh, North Carolina 27603

Re: Ownership of the Submerged Bed of the Yadkin River at the Site of the Yadkin Hydroelectric Project

Dear Mr. Attorney General:

I have been following the State of Montana's lawsuit against a Montana public utility over the ownership of submerged riverbed lands lying under the flowing waters of a federally licensed hydropower project in that State. As you probably know, the State of Montana prevailed in this case at trial and was awarded a judgment declaring it to be the owner of the submerged riverbed property. The trial court also awarded the State a judgment for over $40 million in back rents from the utility company defendant that had built dams on the State's riverbed property some years prior to the lawsuit.

Following an appeal of the trial court's decision by the utility company defendant, the Montana Supreme Court affirmed the trial court's decision. The case is now before the United States Supreme Court, which recently issued a writ of certiorari in the case.

I would not favor this type of legal challenge to the ownership of riverbed property in this State where the federally licensed hydropower operator is a North Carolina public utility because

utilities are statutorily charged with operating in the public interest and are heavily regulated by the Utilities Commission. In fact, I am considering introducing legislation that would grant an easement to North Carolina public utilities that are federally licensed hydropower operators, so that they could operate their hydropower projects without fear that the State might ever assert a claim against them based on their use of riverbed lands that do or might belong to the State.

That said, I note that Alcoa Power Generating, Inc. ("APGI"), the federally licensed operator of the Yadkin Hydroelectric Project, is not a public utility of this or any other State and that it is not regulated by the North Carolina Utilities Commission. Indeed, insofar as I can determine, APGI is not regulated in any meaningful way by any State agency and it appears to sell the electricity that it generates from its use of the Yadkin River largely on the open market outside this State, and it apparently remits the bulk of the profits it makes from its use of the Yadkin River to its parent corporation, Alcoa Corporation, in Pittsburg, Pennsylvania.

In short, I and others do not see how APGI's or Alcoa Corporation's use of the State's second largest river system results in any meaningful benefit to the State or its people.

With this backdrop in mind, I would like to know the opinion of the Attorney General of the State on the following issues:

1. Under the Public Trust Doctrine as enunciated by the North Carolina Supreme Court and any applicable federal law relating to the definition of "navigable waters," does the State of North Carolina own the bed beneath the 'navigable waters' in the state?

2. Does the state own the riverbed underneath the 38-mile stretch of the Yadkin River that makes up the Yadkin Hydroelectric Project?

3. If so, has the State ever effectively conveyed this riverbed property to APGI, Alcoa Corporation or anyone else?

4. Does the federal doctrine of preemption or any other federal doctrine or law prevent the State from being able to successfully sue APGI and/or Alcoa Corporation for a declaratory judgment holding that the State is the legal owner of the bed of the Yadkin River along the 38-mile stretch of that river that makes up the Yadkin Hydroelectric Project?

The answers to these questions will be most helpful to me and other members of the General Assembly in our deliberations over whether to introduce proposed legislation concerning the bed of the Yadkin River in the area of the Yadkin Hydroelectric Project.

Should you or any member of your staff have any questions concerning this letter or the questions set forth above, please do not hesitate to let me know.

Thank you for your assistance in this matter.

Sincerely yours,

Fletcher L. Hartsell, Jr.
Senator, 36th Senatorial District

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
September 28, 2011

The Environmental Review Commission (ERC or Commission) met on Wednesday September 28, 2011 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Gillespie presided.

The following members were present: Senators David Rouzer, Chair, Rep. Mitch Gillespie Co-Chair, Representative Ruth Samuelson, Co-Chair, Senator Stan Bingham, Senator Dan Clodfelter, Senator Don East, Senator Fletcher Hartsell, Senator Brent Jackson, Senator Bill Rabon, Representative William Brisson, Representative Joe Hackney, Representative Pat McElraft, and Representative Chuck McGrady. Mr. Jeff Hudson, Ms. Jennifer McGinnis, and Ms. Susan Iddings, Commission Counsels; Ms. Jennifer Mundt, Commission Analyst; Ms. Mariah Matheson, Research Assistant; and Ms. Cindy Hobbs, Commission Clerk, Sargent-at-Arms Bill Bass, Garland Shepheard, Jessie Hayes, Ernie Sherrill, Dedrick Anders and Steve Wilson. Attachment #1 and #2.

On September 19, 2011, notice was sent to members and interested parties via e-mail. A copy of the notice is included in the attachments to these minutes as Attachment #3. Copies of the agenda for the meeting and visitor registration sheets are included in the attachments to these minutes as Attachment #4 and Attachment #5, respectively.

Call to order and introductory remarks

Representative Gillespie called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized his Co-Chairs, Senator Rouzer and Representative Samuelson, for introductory remarks. Senator Rouzer and Representative Samuelson also welcomed members, staff, and visitors in attendance. Representative Gillespie asked the members of the Commission and staff of the Commission to introduce themselves. He also introduced the Sergeant-at-Arms, Bill Bass, Garland Shepherd, Jessie Hayes, Ernie Sherrill, Dedrick Anders, and Steve Wilson, and the Commission Clerks, Susan Phillips, Sarah Neunzig, and Cindy Hobbs. Representative Gillespie recognized Mr. Jeff Hudson, Commission Counsel, to provide an overview of the meeting agenda. Mr. Hudson reviewed the agenda and brought to the members' attention the following handouts: Summaries of Substantive Environmental and Natural Resources Ratified Legislation: 2011 Regular Session, 2011 General Assembly and the September 28, 2011 memorandum of reports received by the Commission. Copies of these handouts are included in the attachments to these minutes as Attachment #6 and Attachment #7, respectively. Representative Gillespie brought to the members' attention a handout that he had provided; the handout contains language from H773, the Studies Bill (not enacted), that would have directed the Department of Environment and Natural Resources to study implementation of the State and federal rules related to emissions of toxic air pollutants. A copy of this handout is included in the attachments to these minutes as Attachment #8.

Report on the State Air Toxics Program

Representative Gillespie recognized Ms. Sheila C. Holman, Director, Division of Air Quality (DAQ), Department of Environment and Natural Resources (DENR) to provide a report on the State Air Toxics Program. Ms. Holman provided information on the history of the State and federal programs for regulating toxic air pollutants, the amount of toxic air pollutants emitted by sources in North Carolina annually, the differences between the State and federal programs, examples of how sources of toxic air pollutants have complied with State regulations, and a comparison of the North Carolina air toxics program with the South Carolina and Virginia programs. A copy of Ms. Holman's PowerPoint

presentation is included in the attachments to these minutes as Attachment #9. Ms. Holman received a number of questions and requests for further information about the State air toxics program. These questions and requests included the following:

Senator Bingham

- Provide a list of regulated toxins, quantities emitted, and areas in which they're emitted. Specifically, the 25% that are not regulated or the small quantity toxins that don't meet the threshold.
- What is the worldwide tonnage? For example: mobile sources, coal-fired power plants, China's emissions, etc.

Senator East

- How do we know that DAQ is being effective?
- How much reduction have we seen as a result of the toxics program?
- Total cost to the State for administering the program?
    - Representative Gillespie directed staff of the Fiscal Research Division to provide this information.
- Are auto manufacturers and tire re-cappers heavy polluters?

Representative Gillespie

- Expense of modeling and frequency? Is the modeling cost a disadvantage?
- Field trip: Facility walk-through on the process of testing.
- Provide public health statistics in comparison with other states.
- Examples of small facilities?
    - Sushma Musemore with DAQ responded that asphalt plants, concrete plants, and furniture manufacturing facilities are typical examples of small facilities in North Carolina.
- What is the trigger point for the small facilities?
- List of the applicable federal rules and State rules.
- Is measurement of toxins emitted from the property line or fence line? Does the measurement trigger disadvantage sources with smaller parcels of property? What about measuring from the source itself?

Representative Hackney

- Asked whether the Commission could receive information on the science behind and health benefits of the State program.

Senator Hartsell

- Provide list of 21 substances that are covered by the State program, but not the federal program.

Senator Jackson

- What toxins come specifically from agricultural activities?
- Provide a breakdown between emissions from agricultural activities or facilities, such as grain elevators and agricultural sources of soil dust and sulfur dioxide, and traditional industry.
- Provide a breakdown between toxic and non-toxic pollutants from agricultural sources.

Representative McElraft

- How does 38 million pounds compare to other states, not just the Southeast?

- How is that calculation made and who makes it? Per Ms. Holman, it comes from estimates provided by the sources themselves.
- What co-benefits in reductions have we received with maximum achievable control technology (MACT)?
- Doesn't the EPA take public health into consideration when doing the MACTs? Where is NC's expertise?

Senator Rabon

- What are some disadvantages to the State program?

Senator Rouzer

- How do neighboring states handle the 21 toxins?
- What was the emissions figure 20 years ago?
- What percentage do wildfires (for instance recent fire in Great Dismal Swamp) and mobile sources contribute?

Representative Samuelson

- What triggers the State program?
- Are there some facilities subject to the federal government and the State? How can someone be subject to the federal program and not the State?
- Does the industry have to model too often?

Report on the State Water Supply Plan

Representative Gillespie recognized Mr. Thomas A. Reeder, Director, Division of Water Resources (DWR), DENR to provide the annual report on the State Water Supply Plan and other information related to water resources in the State. Mr. Reeder provided information on DWR, the State Water Supply Plan, the status of hydrologic modeling in the State, the development of water supplies in the State, efforts to improve water use efficiency, interbasin transfers (IBTs), the Central Coastal Plain Capacity Use Area (CCPCUA), and drought conditions. Copies of Mr. Reeder's PowerPoint presentation and the State Water Supply Plan are included in the attachments to these minutes as Attachment #10. and Attachment #11, respectively. Mr. Reeder received a number of questions and requests for further information about water supply. These questions and requests included the following:

Representative Gillespie

- Is there liability to the State on being a co-applicant for a water resource project, as authorized under the legislation enacted earlier this year? Do we need language to limit NC's co-applicant liability?
    - Mr. Reeder responded that there is liability, at least in terms of non-compliance, so modifications to the legislation may be needed to address the issue. Representative Gillespie asked for a recommendation from DENR on this issue.
- Provide a presentation on the Randleman Dam litigation at a subsequent meeting.
- Provide notification to the General Assembly of IBT requests.

Senator Hartsell

- Has the Department intervened in the Randleman Dam lawsuit?
- Provide information on water rights in the State at a subsequent meeting?

Commission discussion and announcements

Senator Hartsell informed the Commission that he had submitted a letter to Attorney General Roy Cooper concerning the ownership of the submerged bed of the Yadkin River at the site of the Yadkin Hydroelectric Project. A copy of the letter is included in the attachments to these minutes as Attachment #12.

Representative Gillespie recognized Mr. Hudson for comments on the next meeting of the Commission. Mr. Hudson informed the Commission that the following topics would likely be on the agenda for the next meeting of the Commission: follow-up on the State air toxics program, a presentation on the science behind and health benefits of the air toxics program, a presentation from entities regulated under the air toxics program, an update on the DENR study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State, and a report on the State Leaking Underground Storage Tank Program.

Representative Gillespie thanked the members and staff, announced the next meeting to be held would be October 12, 2011 at 9:00AM.

Adjournment: The meeting was adjourned at 12:10PM.

Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Attest:

Cindy Hobbs, Committee Clerk

Attachments: #12

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/28/11

Member: Rep. Mitch Gillespie

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip) on File
# of round trips

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) 0

Car Mileage claimed for other meeting Yes ☐ No ☑

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/28/11

Member: Rep. Chuck McGrady

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip) 540

# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☒

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/28/11

Member: Rep. Ruth Samuelson

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip) 350

# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/28/11

Member: Rep. William Brisson

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip)
# of round trips 180

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) 0

Car Mileage claimed for other meeting Yes ☐ No ☒

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/28/11

Member: Rep. Joe Hackney

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip) 60
# of round trips

Joe Hackney
(Member's Signature)

Rules Tally
(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/26/11

Member: Rep. Pat McElraft

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip)
# of round trips On record

Pat McElraft
(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) 0

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☒

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/28/11

Member: Sen. Stan Bingham

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip) 198

# of round trips 1

Stan Bingham
(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) 0

Car Mileage claimed for other meeting Yes ☐ No ☑

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/26/11

Member: Sen. Fletcher Hartsell

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip) 282

# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) _____

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/28/11

Member: Sen. Don East

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip) 270

# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

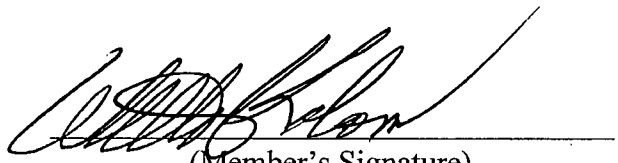
Date(s) of Meeting: 9/28/11

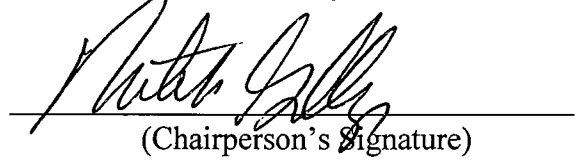
Member: Sen. Bill Rabon

Number of days subsistence claimed

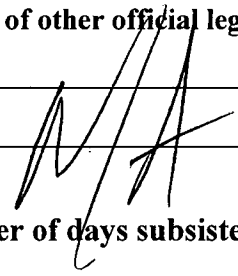
(If you come the night before and spend the night, you are entitled to an extra day.) _____

Car Mileage (Round Trip) 314 ?
# of round trips 1


(Member's Signature)


(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:



Number of days subsistence claimed for other meeting(s) _____

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/28/11

Member: Sen. Brent Jackson

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips 140

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☑

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: 9/28/11

Member: Sen. David Rouzer

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip) 52 miles

# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) _____

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☒

2011-2012

ENVIRONMENTAL REVIEW COMMISSION

MINUTES

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
October 12, 2011

The Environmental Review Commission (ERC or Commission) met on Wednesday, October 12, 2011 at 9:00 a.m. in Room 544 of the Legislative Office Building. Senator Rouzer presided.

The following members were present: Senator David Rouzer, Co-Chair, Representative Mitch Gillespie, Co-Chair, Representative Ruth Samuelson, Co-Chair, Senator Stan Bingham, Senator Don East, Senator Fletcher Hartsell, Senator Brent Jackson, Representative William Brisson, Representative Carolyn Justice, and Representative Chuck McGrady. Mr. Jeff Hudson and Ms. Jennifer McGinnis, Commission Counsels; Ms. Mariah Matheson, Research Assistant; Ms. Sarah Neunzig, Commission Clerk, Sergeants-at-Arms Dedrick Anders, Ernie Sherrell, Martha Gadison, Martha Parrish, and Bill Bass. Attachments #1 and #2.

On October 5, 2011, notice was sent to members and interested parties via e-mail. A copy of the notice is included in the attachments to these minutes as Attachment #3. Copies of the agenda for the meeting and visitor registration sheets are included in the attachments to these minutes as Attachment #4 and Attachment #5, respectively.

Call to order and introductory remarks

Senator Rouzer called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized his Co-Chairs, Representative Gillespie and Representative Samuelson, for introductory remarks. Senator Rouzer recognized Mr. Jeff Hudson, Commission Counsel, to provide an overview of the meeting agenda. Mr. Hudson explained that the agenda consisted of (i) a continuation of the discussion of the State Air Toxics Program (State Program) from the September 28, 2011 meeting, including follow-up information from the Department of Environment and Natural Resources (DENR), a presentation on the science and health benefits of the State Program, and, at Representative Gillespie's request, comments from the regulated community regarding the impacts of the State Program on them; (ii) an update from DENR on the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State; and (iii) a report from the Chair of the Environmental Management Commission (EMC) on the EMC's activities for the last year.

Follow-up and discussion of the State Air Toxics Program

Response to request for additional information on the State Air Toxics Program

Senator Rouzer recognized Ms. Sheila C. Holman, Director, Division of Air Quality (DAQ), DENR and Robin Smith, Assistant Secretary for Environment, DENR, to provide a follow-up report on the State Air Toxics Program. Ms. Smith provided a basic overview of the State Program and explained the differences between the State and federal programs. A copy of the presentation is included in the attachments to these minutes as Attachment #6.

Representative Samuelson asked if there were multiple sources at a facility would emissions from sources covered by the federal program be included in calculating emissions from the entire facility. Ms. Smith responded that they would. Under the State Program, emissions from sources covered by the federal program are still considered when determining if emissions from the facility as a whole meet the State's health-based air toxics standards.

Senator Bingham asked about the measurement of the levels of air toxics emitted from a facility. Ms. Smith explained that under the State Program levels of air toxics are measured at the property line of a facility in order to determine what levels of air toxics could be affecting nearby people and businesses. Senator Bingham asked why there are 21 air toxics that are included in the State Program that are not included in the federal program. Ms. Smith explained that the federal program covers air toxics that present problems at the national level. Some air toxics that aren't a problem at the national level can be problematic at the State level. An example of an air toxic that is problematic at the State but not national level and that is included by the State Program but not the federal program is ammonia. Such air toxics make up the 21 air toxics that are covered by the State Program but not the federal program.

Ms. Holman and Ms. Smith then provided information in response to questions that were asked about the State Program at the September 28, 2011 meeting. This information is included as Attachment #7.

Senator East asked about how agricultural dust is treated under the State Program. Ms. Smith explained that generally, agricultural activities are exempted from the State Program and the federal program. This would not be true if an agricultural operation had some type of industrial type source of emissions such as a combustion source. This type of source could potentially be covered by the State Program and federal program. Senator East asked about air quality monitors near agricultural facilities. Ms. Smith explained that these monitors are not monitoring for toxic air pollutants.

Senator Rouzer asked how many monitors there are in the State. Ms. Holman answered that there are approximately 65 monitoring stations. Senator Rouzer asked about how their location is determined. Ms. Holman explained that the location is based on guidance from the United States Environmental Protection Agency (EPA). Senator Rouzer asked if the monitors are located on both public and private property. Ms. Holman responded that the monitors tend to be located on public property, such as a school or county or city property.

Representative Justice asked about emissions from a facility with sources that aren't subject to the federal program. Ms. Smith responded that such facilities could be subject to the State Program and could be subject to modeling requirements to determine if the levels of air toxics at the property boundary exceed the State's health-based standards. Representative Justice asked how DENR responds to the assertion that the State Program is duplicative of the federal program and therefore unnecessary. Ms. Smith responded that the State Program looks at the cumulative effect of air toxics emitted from a facility and that some of those emissions may not be covered by the federal program. The State Program can also look at the actual levels of air toxics leaving a facility and determine if they are affecting neighboring persons or properties. Ms. Smith also noted the federal program has been behind in establishing standards for some air toxics that it has identified as problematic.

Representative Samuelson asked if other states have programs like ours and, if so, how is ours similar or dissimilar to the other programs? Ms. Smith referred to the follow-up information contained in Attachment #7, which shows the lists of air toxics covered by our State Program, the federal program, and South Carolina's air toxics program. She noted that the federal program covers 187 air toxics, that our State Program covers an additional 21 air toxics, the South Carolina program covers an additional 59 air toxics, and the Virginia air toxics program covers the same 187 air toxics as the federal program. Representative Samuelson asked if most other states have programs that include air toxics not covered by the federal program. Ms. Smith responded that several States do and that they could provide additional information on this. Representative Samuelson noted that our State Program looks at potential impacts to people at neighboring properties and asked about neighboring properties that aren't inhabited. Ms. Holman responded that there is an inhabitability provision in the State Program that takes this into

account. Ms. Smith noted that just because a property is currently uninhabited doesn't mean that it will remain so. Representative Samuelson asked several questions about the list of emissions of air toxics by facility contained in Attachment #7. Ms. Smith explained that the list includes all facilities required to report emissions of air toxics and that the facilities are listed in order from greatest to least emissions.

Senator Bingham noted that paper manufacturing facilities and electric power generation facilities produced the majority of emissions of air toxics and asked what types of air toxics these facilities emit. Ms. Holman explained that most of the emissions from electric power generation facilities are from the combustion of coal. She also directed the Commission's attention to page 53 of Attachment #7, which shows emissions from select industry sectors, including paper mills and electric power generation facilities. Senator Bingham referenced the Clean Smokestacks Act (S.L. 2002-4) and its reduction of certain air pollutants. He then asked about air toxics originating in neighboring states. Ms. Smith noted that most air toxics tend to be more local in effect and that the State doesn't have very good data on air toxics coming from other states. Senator Bingham asked about pollutants emitted from the Tennessee Valley Authority's (TVA) coal-fired power plants. Ms. Smith explained that the Clean Smokestacks Act required emissions reduction technology to be applied to a number of coal-fired power plants in North Carolina. It also required the State to examine air pollution generated by neighboring states. Based on this, the State filed a lawsuit against TVA seeking reductions in emissions of air pollution. The lawsuit was ultimately settled with TVA agreeing to implement significant reductions. Senator Bingham asked about international sources of air pollution, like China. Ms. Smith responded that the State does not have good information on this because China doesn't require sources and facilities to report their emissions as is required in the United States. She reiterated that air toxics have mostly localized impacts, so although China is a source for other types of air pollution that affect the United States, its air toxics emissions probably have little to no impact on air quality in the United States. Senator Bingham asked about the contribution of automobiles to air pollution in North Carolina. Ms. Smith directed the Commission's attention to the information provided under Question #5 on page 1 of Attachment #7. Based on EPA estimates, mobile sources (automobiles) emitted over 89 million pounds to air toxics in North Carolina in 2008, which represents 65% of total air toxics emissions in the State for that year.

Senator East asked Ms. Smith about the history, implementation, and cost of the State Air Toxics Program. Ms. Smith explained that the State Program had its origins in 1989 based on an Executive Order from then Governor Jim Martin. The Executive Order to establish the State Program was issued because the EPA was making little progress in regulating air toxics at the federal level. A number of other states also established air toxics programs. Ms. Smith further explained that the federal program covers air toxics that present problems at the national level. Some air toxics that aren't a problem at the national level can be problematic at the State level. This is why the State Program regulates air toxics that are not regulated at the federal level. Ms. Lanier McRee, Fiscal Analyst with the Fiscal Research Division, provided information on the costs of the State Program. She explained that the Division of Air Quality (DAQ), including the State Toxics Program, is entirely receipt supported and receives no funding from the General Fund. The annual budget for DAQ in its entirety is about $29.1 million, and the total annual cost to operate the State Program is $645,574. Senator East asked about fees under the State Program. Ms. Smith explained that the fees are annual, that they are paid by permitted facilities, and that they are based on EPA estimates for operating the State Program. She noted that for 2010, permit fees accounted for $17 million of DAQ's budget while the rest of the budget came from a portion of the motor fuels tax, federal funds, and other sources. Senator East asked if the fees were based on the amount of air toxics emitted at a facility. Ms. Smith explained that the fee amount is based on the type of facility. Ms. Holman added that the fees are based on the tonnage of emissions of air toxics from each facility in a given year.

Senator Jackson asked which facilities have to get permits and how often facilities are inspected. Ms. Smith responded that permit requirements are based on the amount of air toxic emissions and that the Department tries to inspect larger facilities annually and smaller facilities once every 2 years. Senator Jackson asked how a new facility determines if it needs a permit. Ms. Smith responded the facility should contact the Department and the Department can determine if the facility meets the threshold for needing a permit.

Representative Justice asked whether cumulative effects are considered under the State Program and whether emissions from existing facilities could determine the amount of emissions allowed at a new facility. Ms. Smith explained that under the State Program the cumulative effects from all sources at a particular facility are considered. Ms. Holman explained that the under the State Program only the cumulative effects from a single facility are considered; the cumulative effects from multiple facilities are not considered under the State Program. She further explained that this is not the case for other types of air pollutants under other programs where regional or even national cumulative impacts may be considered.

Senator Rouzer asked about the information in Attachment #7 regarding estimates of sources and amounts of air toxics. Ms. Holman responded that the information is based on EPA estimates that are produced every 3 years.

Information on the science behind and health benefits of the State Air Toxics Program

Senator Rouzer recognized Dr. George Lucier, Past Chair of the State Air Toxics Program's Scientific Advisory Board and Former Associate Director of the National Toxicology Program to speak on the science behind and health benefits of the State Program. Dr. Lucier's credentials and presentation are included in the minutes as Attachments #8 and #9 respectively.

Representative Samuelson asked about the reasonable estimate of risk and if the goal of the State Program is to allow no increase in risk. Dr. Lucier explained that acceptable levels of risk are allowed. For example, with a known human carcinogen, the acceptable risk is considered to be 1 in one million additional incidences of cancer. Dr. Lucier also noted that there are a number of factors that go into calculating acceptable levels of risk.

Senator East asked if air toxics are such a problem, why are people living longer. Dr. Lucier responded that because of various environmental programs, including the State Program, levels of many pollutants have decreased as has people's exposure to them. He also noted that various improvements in medical care and public health have contributed to longer lifespans.

Representative Gillespie asked how the health-based standards of our State Program compare with the standards of other states. Dr. Lucier explained that in some cases our standards are stricter, but in other cases they are less strict.

Senator Bingham asked whether the State Program or the federal program consider the economic impact of compliance. Ms. Holman explained that the State Program considers technical and economic feasibility. Senator Bingham asked how levels of risk are determined for different air toxics and specifically asked about mercury. Dr. Lucier explained how and to what extent mercury is transported. He further explained mercury is very biologically and ecologically persistent, which is one of the reasons that it is so toxic. Senator Bingham asked if PCBs (Polychlorinated biphenyls) bioaccumulate in fish like mercury does. Dr. Lucier responded that it does and added that the bioaccumulation of both mercury and PCBs in fish is one of the reasons it is difficult to assess the risks of eating fish.

Senator Hartsell asked about arsenic, fluoride and cyanide. Dr. Lucier answered that these substances are like PCBs because they are or form multiple compounds. Some of these substances are not persistent in the environment while others are.

Comments from the regulated community on the State Air Toxics Program

Senator Rouzer recognized Preston Howard, President of the Manufacturers and Chemical Industry Council of North Carolina. Mr. Howard introduced himself and his organization and spoke about how the State Air Toxics Program impacts his members. His presentation is included in the minutes as Attachment #10.

Senator Hartsell asked about the relationship between State and federal air quality programs. Mr. Howard responded that the federal Title V Program has been delegated to the State and that the State implements and enforces the program.

Representative Samuelson asked if the same people are administering the State Air Toxics Program as well as federally delegated air quality programs. Mr. Howard responded yes, that one agency, the Division of Air Quality in DENR, implements all of the air quality programs. Representative Samuelson asked about when changes to a facility require new modeling to be performed. Mr. Howard responded that new modeling would be required if the modification resulted in an increase in emissions.

Representative McGrady asked about what changes to the State Program Mr. Howard was suggesting. Mr. Howard responded that he thinks the State Program should be amended so that a source that must comply with the requirements of the federal program would not be covered by the State Program. He also said that modeling requirements should be consolidated so that facilities don't have to perform multiple modeling exercises. He said the "Director's call" provision of the State Program would still allow DENR to address situations where a facility was demonstrably impacting the health of adjacent neighbors.

Senator East asked about the recent decision by a tire manufacturing company not to locate in North Carolina and whether that decision was based on incentives or on the stringency of North Carolina's environmental rules. Mr. Howard responded that he didn't know the basis of this decision. He added that companies do look at regulatory environment when deciding where to locate and that some smaller companies are choosing other states because they believe they can begin operating their facilities more quickly. He also added that it is his understanding that another manufacturing facility chose to locate in South Carolina instead of North Carolina, in part, because of the stringency of our State Air Toxics Program.

Senator Bingham asked Mr. Howard to provide recommendations to make North Carolina more competitive with other southeastern states. Representative Gillespie responded that he intended to get Mr. Howard to do this.

Senator Hartsell asked why companies choose to locate in South Carolina when South Carolina regulates more air toxics than North Carolina. Mr. Howard noted that there are a number of states that regulate more air toxics than North Carolina, but that many of those states, such as South Carolina, exempt sources that are regulated under the federal program.

Senator Rouzer recognized Lew Ebert, President and Chief Executive Officer of the North Carolina Chamber for his comments. Mr. Ebert introduced himself and explained the importance of regulatory efficiency, consistency, and predictability to the business community in North Carolina. His presentation is included in the minutes as Attachment #11.

Quarterly reports by the Environmental Management Commission (EMC) as to its operations, activities, programs, and progress for the period from October 2010 through September 2011 (G.S. 143B-282(b))

Senator Rouzer recognized Stephen Smith, Chair of the Environmental Management Commission (EMC). Mr. Smith gave a brief overview of the EMC's quarterly reports from October 2010 through September 2011. A cover memo and the four quarterly reports are included in the minutes as Attachments #12, #13, #14, #15 and #16, respectively.

Representative Samuelson asked Mr. Smith to explain the background and rationale for the repeal of the combustion source exemption under the State Air Toxics Program. Mr. Smith stated the original exemption was based upon the expectation that EPA was going to issue an emissions control standard for combustion sources and that a State standard wouldn't be necessary. After 13 years of waiting, the EMC decided it couldn't wait any longer and eliminated the exemption for new and expanding facilities. For existing facilities, the "Director's call" provision of the State Air Toxics Rules was used to review those sources and only those that exceed certain thresholds were required to implement measures to control emissions. Representative Samuelson asked if a source would lose its grandfather status if it was modified. Ms. Holman responded that it would if the modification caused an increase in emissions beyond certain thresholds.

Mr. Smith asked if Ms. Holman could explain the use of the "Director's call" provision in the case of combustion sources. Ms. Holman explained that under the "Director's call" the Division of Air Quality in DENR reviewed 1,800 combustion sources at approximately 450 facilities. The Division did a further review of 40 of those facilities where there was evidence that there could be some adverse health effects at the property line. Upon further review and modeling, it was determined that 18 of the facilities were actually creating adverse health impacts at the property line.

Senator East asked Mr. Smith to explain the last entry on the EMC Quarterly Report for the period April 1, 2011 through June 30, 2011 (Attachment #14). Mr. Smith explained the item designated as "*Denied the petition for rulemaking to amend the Underground Storage Tanks Secondary Containment Rules*" concerned a petition for rulemaking filed by the Steel Tank Institute Plate Fabricators Association requesting an amendment to the rule governing underground storage tank (UST) secondary containment standards. At the time of the petition, the rule required that tanks must be protected from external corrosion by specific means in accordance with the Code of Federal Regulations, but did not allow the use of cathodically protected steel tanks for that purpose. The petition requested that use of cathodically protected tanks be allowed for that purpose. The EMC denied the petition.

Senator Rouzer stated that he believed the General Assembly had enacted legislation on this issue, and asked Ms. Jennifer McGinnis, Commission Counsel, for information in that regard. Ms. McGinnis confirmed that a provision had been enacted during the 2011 Session in House Bill 119 (Amend Environmental Laws) to allow use of cathodically protected steel tanks for corrosion protection purposes, thereby overriding the EMC's decision on the issue.

Update on DENR's study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State

Senator Rouzer recognized Robin Smith, Assistant Secretary for Environment, DENR, to provide an update on DENR's study of the use of directional and horizontal drilling and hydraulic fracturing or

"fracking" for the purpose of oil and gas exploration in the State. Her presentation is included in the minutes as Attachment #17

Commission discussion and announcements

Senator Hartsell informed the Commission that he had submitted a letter to Attorney General Roy Cooper concerning the ownership of the submerged bed of the Yadkin River at the site of the Yadkin Hydroelectric Project during the last meeting. He stated today, he has not received a response from the Attorney General and would like to submit the motion to intervene submitted by the Attorney General on behalf of DENR in the Yadkin Hydroelectric Project reauthorization. The basis for intervention stated in the motion is that the State retains title to navigable waters and that the navigable waters themselves are a public resource. The motion is included in the minutes as Attachment #18.

Senator Rouzer thanked the members and staff, and announced the next meetings to be held would be Wednesday, November 9, 2011, at 9:00 a.m. and Wednesday, December 14, 2011, at 9:00 a.m. The dates and times are subject to change and notice will be given if they do change.

Adjournment

The meeting was adjourned at 12:20 p.m.

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Attest:

Sarah Neunzig, Committee Clerk

ATTENDANCE

Environmental Review Commission

DATES	10-12-11														
Sen. David Rouzer (Chair)	✓														
Rep. Mitch Gillespie (Co-Chair)	✓														
Rep. Ruth Samuelson (Co-Chair)	✓														
Sen. Stan Bingham	✓														
Sen. Dan Clodfelter															
Sen. Don East	✓														
Sen. Fletcher Hartsell	✓														
Sen. Brent Jackson	✓														
Sen. Bill Rabon															
Sen. Michael Walters															
Rep. William Brisson	✓														
Rep. Joe Hackney															
Rep. Carolyn Justice	✓														
Rep. Pat McElraft															
Rep. Chuck McGrady	✓														
Rep. Roger West															
Staff:															
Jeff Hudson	✓														
Susan Iddings															
Jennifer McGinnis	✓														
Jennifer Mundt															
Mariah Matheson	✓														

Senate Sgt At Arms

Dedrick Anders

Ernie Sherell

House Sgt At Arms

Martha Gadson

Martha Parrish

Bill Bass

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: _____

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) _____

Car Mileage (Round Trip) _____
# of round trips _____

_____
(Member's Signature)

_____
(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

_____

_____

Number of days subsistence claimed for other meeting(s) _____

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☐

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
SENATOR STAN BINGHAM
SENATOR DANIEL G. CLODFELTER
SENATOR DON EAST
SENATOR FLETCHER L. HARTSELL, Jr.
SENATOR BRENT JACKSON
SENATOR BILL RABON
SENATOR MICHAEL P. WALTERS

REPRESENTATIVE WILLIAM D. BRISSON
REPRESENTATIVE JOE HACKNEY
REPRESENTATIVE CAROLYN H. JUSTICE
REPRESENTATIVE PAT MCELRAFT
REPRESENTATIVE CHUCK MCGRADY
REPRESENTATIVE ROGER WEST

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COMMISSION COUNSEL

JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

October 5, 2011

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Sarah Neunzig, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at 9:00 a.m. on Wednesday, October 12, 2011, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. The agenda for the meeting is expected to include follow-up and discussion of the State Air Toxics Program, a report on the activities of the Environmental Management Commission, and an update on the Department of Environment and Natural Resources's study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Sarah Neunzig, Commission Clerk, at (919) 733-5748

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

9:00 a.m. Wednesday, October 12, 2011
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Senator Rouzer, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Follow-up and discussion of the State Air Toxics Program *(1 hour, 30 minutes)*

   Response to requests for additional information on the State Air Toxics Program
   Robin Smith, Assistant Secretary for Environment
   Department of Environment and Natural Resources (DENR)

   Sheila C. Holman, Director
   Division of Air Quality, DENR

   Information on the science behind and health benefits of the State Air Toxics Program
   Dr. George Lucier, Past Chair
   Scientific Advisory Board, State Air Toxics Program and
   Former Associate Director of the National Toxicology Program

Comments from the regulated community on the State Air Toxics Program
Preston Howard, President
Manufacturers and Chemical Industry Council of North Carolina

Lew Ebert
President and CEO
North Carolina Chamber

6. Update on DENR's study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State *(10 minutes)*
Robin Smith, Assistant Secretary for Environment
DENR

7. Quarterly reports by the Environmental Management Commission (EMC) as to its operations, activities, programs, and progress for the period from October 2010 through September 2011 (G.S. 143B-282(b)) *(30 minutes)*
Stephen T. Smith, Chairman
Environmental Management Commission

8. Commission discussion and announcements

9. Adjourn

FUTURE MEETINGS:

The Environmental Review Commission will meet on the following dates at 9:00 a.m. in Room 544 of the Legislative Office Building, Raleigh, North Carolina. **This schedule is tentative and subject to adjustment.** For planning purposes, however, please reserve these dates.

Wednesday, November 9, 2011
Wednesday, December 14, 2011

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

VISITOR REGISTRATION SHEET

Environmental Review Commission

October 12, 2011

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Patrick Baffi	MCAEC
Dean Plunkett	PS
Thomas Allen	Allen
Jim Kuszaj	MCIC
Beth Warren	Atty. General's Office
Heather Barnett	WM
Sandy Sando	WM
Chris Anderson	
Jennifer Lewis	AG's office
Gary Kreiser	DWQ
David Knight	DENR
Trina Ozer	DENR
KENNETH TAYLOR	DENR
Diana Kees	DENR
Tara Allen	
Mary Maclean Asbill	SELC
Dan Conrad	NCCN
Tom Bean	EDF, NCWF

09-21-201

VISITOR REGISTRATION SHEET

Environmental Review Commission

October 12, 2011

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Kari Barsness	DENR
Mike Abraczinskas	DENR-DAQ
Sushma Masemore	DENR-DAQ
Tom Cors	TNC
John Shaw	CAPITAL GROUP SIERRA CLUB
Jake Cashion	NCC
Lew Ebert	NC Chamber
J Goodman	NC CHAMBER
Elizabeth Robinson	NCRMA
Rick Zechini	Progress Energy
Preston Howard	MCIC
Kathy Hawkins	Duke Energy
Jessi Hayes	NC HBA
Phil Carter	Waste Industries
Keith Richardson	City of Charlotte
Fred Baker	Baker Assoc.
Ken Melton	K.M.A.

09-21-201

Control of Toxic Air Pollutants in North Carolina

DENR, Division of Air Quality
ERC Meeting - October 12, 2011

Recap from 09/28/11 Presentation

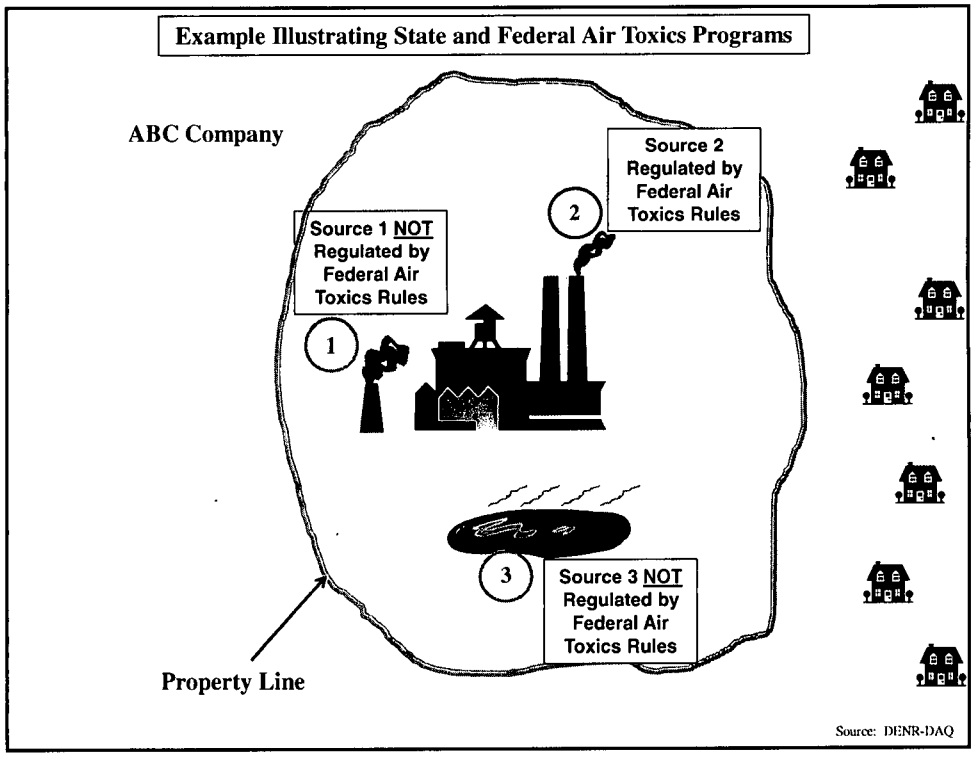
- Toxic air pollutants - known to cause cancer or other serious health effects
- Federal Approach
  - Identified source categories (e.g., wood furniture-surface coating, boilers, etc.) for which technology standards would be developed
  - Did rulemaking to set technology based emission standards
  - Facilities comply with technology standards
  - EPA is required to evaluate whether any residual risk remains 8 years after technology standard was established, and, if necessary, revise the standards to address such risk

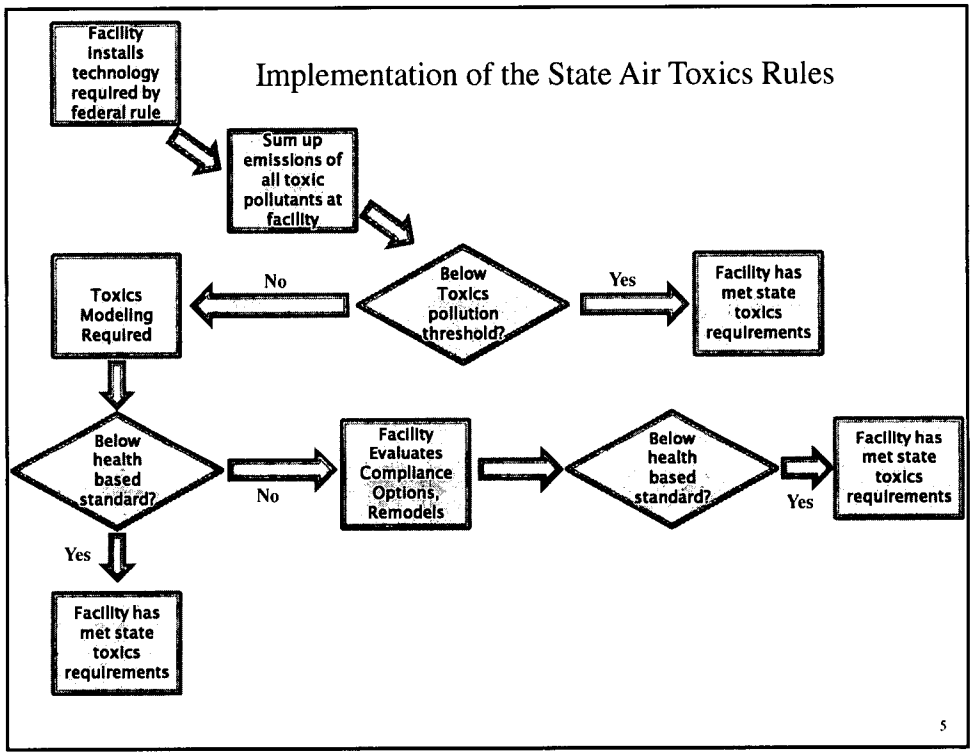
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Recap from 9/28/11 Presentation

- State Approach
  - Identified the toxic air pollutants of concern in NC
  - Secretary's Science Advisory Board on Toxic Air Pollutants study exposure data and make recommendation as to the health based standard for a given toxic pollutant
  - Environmental Management Commission adopts health based standards via rulemaking
  - Permitted sources evaluate whether health based standards are being met at the property boundary

3





Federal and State Statistics

	Number of Permitted Facilities	Number of Facilities Subject to State Toxic Air Rules	Number of Facilities Subject to State and Federal Toxic Rules	Number of Facilities Subject to Federal Toxic Rules
Total	2732	784	257	265
Percent		~30%	~10%	~10%

50% of facilities are not subject to federal or state *toxic air pollutant* rules

6

Key Points

- Federal program looks at effective technology first, which results in lower air toxic emissions, and health risk second, focusing on remaining risk at a national level.
- Federal program requires no evaluation to understand all emissions of a given toxic air pollutant that leaves the property boundary
- NC's air toxics rules require a facility wide evaluation of a given pollutant and the resulting concentration at the property boundary

7

NCDENR
Division of Air Quality
October 12, 2011

TOXIC AIR POLLUTANTS – QUESTIONS AND ANSWERS

1. Question: What toxic air pollutants are emitted in North Carolina, where and in what amounts?

   Answer: Attachment 1 lists the North Carolina sources required to report their toxic air emissions and the amount emitted each year in order from the largest to the smallest. Toxic air emissions reported by the companies in 2009 total approximately 38 million pounds per year. Attachment 2 lists the pollutants emitted that are regulated under both the state and federal programs and the amount emitted in order from largest to the smallest for 2009. Attachment 3 is a chart showing the relative contribution to total toxic air emissions by industry sector. Attachment 4 shows the toxic air pollutants emitted by four different industrial sectors. Both charts are based on 2009 data.

2. Question: How are these numbers calculated and who makes the calculations?

   Answer: The numbers come from the companies and are based on either actual monitoring of emissions or a calculation based on type of fuel, combustion process, total solvent used, etc.

3. Question: How does the 38 million pounds per year of toxic air pollution in North Carolina compare to other states?

   Answer: Based on emissions reported to EPA in 2009, North Carolina has the tenth highest level of toxic air pollution emissions in the United States. Note: Information in the September 28, 2011 DAQ presentation should be clarified to state that N.C. has the 4th highest level of toxic air emissions from chemical industry sources.

4. Question: What are the global emissions of toxic air pollutants?

   Answer: We don't have access to actual numbers, particularly for sources in countries like China that do not make pollution information publicly available. It is important to remember that toxic air pollution is basically a local problem with local impacts. Ammonia from sources in China, for example, does not affect North Carolina communities.

5. Question: What percentage of toxic air pollutants come from wildfires (such as the Great Dismal Swamp fire) or from automobiles?

   Answer: Based on EPA estimates for mobile sources, over 89 million pounds of toxic air pollutants were released from cars and trucks on North Carolina roads in 2008. This amount represents 65 percent of the total toxic air emissions. Forest fires and other nonpoint categories (such as farms) accounted for over 9 million pounds of toxic air emissions, or 7 percent of the

total toxic air emissions that same year. The industrial sector accounted for the remaining 28 percent of toxic air emissions in North Carolina in 2008.

6. Questions: What are some examples of small sources of toxic air pollutants?

   Answer: Asphalt plants, concrete batch plants, small furniture manufacturing plants, small wood products companies, wastewater treatment plants.

7. Are automobile manufacturers and tire recappers heavy polluters?

   Answer: DAQ looked at EPA air pollution data for the BMW plant in Greenville, South Carolina and found that the company emitted 76,951 pounds of toxic air emissions in 2008. When the plant was originally permitted by S.C. in the early 1990's, the company had to demonstrate compliance with South Carolina air toxics standards at the property line. Note: South Carolina excludes from state review any individual pollution source subject to a federal technology standard, but only with respect to the toxic air pollutants actually addressed by the federal standard. Since South Carolina regulates 79 toxic air pollutants that are not covered by the federal program, it still reviews even those individual sources for compliance with state standards for state-regulated pollutants.

   There are six tire retread facilities operating in North Carolina. Collectively, the six facilities emitted approximately 22,517 pounds of toxic air pollutants in 2009. Two facilities have never modified and therefore have not been required to perform an air toxics assessment. Each of the other four facilities has assessed air toxics emissions; only one facility needed to do modeling and then take measures to reduce emissions at the property boundary.

8. Question: What air toxics come specifically from agriculture?

   Answer: Agricultural operations can be sources of toxic air pollutants, but agriculture generally is not regulated under the Clean Air Act or under North Carolina's air quality program. An agricultural activity would only be regulated if it had an emissions source similar to a source found at an industrial facility. A traditional agricultural activity– such as a large poultry farm– does not require an air quality permit even though the farm produces a large amount of a toxic air pollutant (ammonia) regulated under the state program.

9. Question: Which toxic air pollutants are regulated by the North Carolina program, but not the federal program?

   Answer: Attachment 5 lists all of the toxic air pollutants regulated by the North Carolina program, the South Carolina program and the federal program. The 21 toxic air pollutants regulated under the North Carolina program, but not the federal program have been highlighted in yellow. Note that S.C. actually regulates 79 toxic air pollutants that are not regulated under the federal program; Virginia only regulates the toxic air pollutants that are covered by the federal program.

10. Question: Doesn't EPA take public health into consideration in adopting the federal standards?

    Answer: When EPA adopts a standard for toxic air emissions from a particular type of source, the standard is based on the kind of air pollution control technology that is most effective in removing the pollutants of concern at that kind of source. Under the federal program, the emissions limit is based on how much pollution the technology can remove – not a public health standard. Technology drives the initial federal standard; the Clean Air Act then requires EPA to review how well the technology is protecting public health within eight years after the standard is set.

11. Question: What are public health conditions in North Carolina as compared to other states?

    Answer: In terms of air toxics, the impacts would be more local than statewide. To do a true comparison, it would be necessary to compare areas in North Carolina that have facilities regulated only by the state program as compared to areas with similar facilities in other states that do not go beyond federal air toxics requirements.

12. Question: How do we know that the North Carolina program is effective? How much reduction in toxic air emissions has the state seen as a result of the program? What were the emissions figures twenty years ago?

    Answer: Attachment 6 shows the reduction in reported toxic air emissions in North Carolina since 1998. There has been a steady decline; emissions reported in 2009 were about 1/3 the levels reported in 1998. Note: After a steady decline in toxic air emissions from 1990 to 1998, the numbers bumped up when federal rules changed to require emissions reporting by several categories of sources that had not been required to report before. The new categories included: electrical utilities that combust coal and/or oil, hazardous waste treatment and disposal facilities, chemical wholesale distributors, solvent recovery services, petroleum bulk stations and terminals, and metal and coal mining. In 1990 (when the State program went into effect), N.C. sources reported emissions of toxic air pollutants totaling approximately 95 million pounds. As a result of the expanded reporting requirement, the number reached a high of approximately 132 million pounds per year in 2000 before again beginning a steady decline to the 2009 level of 38 million pounds per year.

13. Question: Do air pollution controls installed for other purposes also reduce emissions of toxic air pollutants?

    Answer: Some pollution controls installed to meet other requirements of the Clean Air Act also reduce emissions of one or more toxic air pollutants. For example, the combination of a selective catalytic reduction control device to reduce nitrogen oxide emissions and a scrubber to control SO2 emissions installed on a coal-fired power plant can also reduce mercury emissions. If a pollution control installed for other reasons also reduces toxic air emissions enough to meet

the health-based standard at the property line, the facility does not need to do anything else to comply with state air toxics rules.

14. Question: Does the state program regulate the level of air toxics at the property line or at the fence line?

    Answer: Emissions of air toxics must meet the state health-based standard at the property line.

15. Question: Does the requirement to meet an air quality standard at the property line disadvantage facilities located on smaller properties?

    Answer: It really depends on the type of facility and how it operates. The need to control toxic air emissions can certainly be greater, since a facility on a small property may be located much closer to other businesses and even residences where people will be exposed to the emissions.

16. Question: How expensive is it to do the air quality modeling required by the state program?

    Answer: Modeling costs depend on the type of modeling needed for a given facility. A simple source screening model costs in the range of $1500-$2500. Refined modeling for a simple source can cost in the range of $3000 to $6000. Refined modeling for a complex source can cost in the range of $10,000 to $20,000.

17. Question: What are the disadvantages of the state program?

    Answer: Industry has expressed concern about the potential need to do modeling for a facility modification that increases emissions of toxic air pollutants. (Modeling would be required if the increase exceeded a threshold level set in state rules.) There is also concern about the Environmental Management Commission's decision to amend the state air toxics rules to remove an exemption for new or modified combustion sources (such as boilers). With the exemption removed, these new or modified sources must comply with the state program in the same way other regulated sources of toxic air emissions do. A related concern is that large combustion sources (those emitting more than 10 tons per year of one federally-regulated toxic air pollutant or more than 25 tons per year of a combination of those pollutants), may need to meet state air toxics standards before EPA finalizes the federal technology standard for those industrial boilers. Note: The Environmental Management Commission removed the previous exemption for boilers largely because the federal standards had been repeatedly delayed -- leaving these sources unregulated under either the state or federal air toxics program. The proposed federal standard for large industrial boilers is still stayed and it is unclear when that standard will become final.

    We may need more information from industry to have a complete understanding of the concerns about North Carolina's air toxics program.

18. Question: Why is a facility regulated under the state program and federal program?

    Answer: The federal standard may not address all of the sources of toxic air pollutants located at the facility or all of the toxic air pollutants produced at the facility. Unlike the federal program, the state program looks at the cumulative toxic air emissions from all sources at the facility. The state and federal programs also approach protection of public health differently. The federal program is built on the idea of picking a pollution control technology that is most effective at removing a particular pollutant and then assessing any remaining public health risk several years later. Since the federal program is technology-based, it does not take into consideration other operating or design changes that could further reduce toxic air emissions. The state program evaluates actual toxic air emissions at the property boundary –where those emissions affect other businesses and residences. Sometimes installing the technology required under the federal rule allows the facility to meet the health-based standard at the property boundary, the state program does not require any further action. Other times those levels exceed the public health standard at the property boundary even after the facility has installed technology required under the federal rule; in those cases, the state program works with the industry to identify other measures that can lower the level of toxic air pollutants.

19. Question: How is the state program implemented and federal program implemented?

    Answer: The state program requires an air quality permit if a facility's total emissions of state-regulated toxic air pollutants exceed a certain threshold level. Then, the facility is required to determine whether those emissions will meet the state health-based standards at the property line. If one or more federal standards for toxic air emissions apply to the facility, the state does not require that evaluation until after the facility has complied with all federal requirements.

    EPA has implemented the federal program by identifying the toxic air pollutants of greatest concern and then adopting a technology standard for the largest industry sources of those pollutants on a national basis. Although EPA has listed 187 toxic air pollutants in the federal rules, the federal program does not regulate all sources of those pollutants – only the sources that represent the highest priority nationally. As a result, a number of the federal rules related to toxic air pollutants establish standards for facilities that do not exist in North Carolina (such as oil refineries). On the other hand, the rules do not address facilities that are of local or regional concern but have not risen to the level of being a national priority.

Additional Information provided in the packet:

- State Air Toxics Rules: Attachment 7
- Federal Air Toxics Rules that Apply to Facilities in North Carolina: Attachment 8
- Executive Order for the State Air Toxics Program: Attachment 9

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ATTACHMENT 1: NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
PCS Phosphate Company Inc. - Aurora	Beaufort	2009	4,198,114.06
Duke Energy Carolinas, LLC - Cliffside Steam Station	Rutherford	2009	3,521,313.91
Carolina Power and Light Company d/b/a Progress Energy Caro	New Hanover	2009	2,078,097.41
Progress Energy - H.F. Lee Plant	Wayne	2009	1,688,846.10
DAK Americas LLC	Brunswick	2009	1,628,254.32
Duke Power Company, LLC - Allen Steam Station	Gaston	2009	1,434,697.25
Progress Energy Carolinas - Cape Fear Plant	Chatham	2009	1,379,422.22
Blue Ridge Paper Products - Canton Mill	Haywood	2009	1,268,161.54
International Paper - Riegelwood Mill	Columbus	2009	1,029,042.74
Progress Energy - Mayo Facility	Person	2009	1,003,113.02
Duke Energy Carolinas, LLC - Belews Creek Steam Station	Stokes	2009	886,454.33
Cargill Inc - Fayetteville	Cumberland	2009	795,645.51
Duke Energy Carolinas, LLC - Marshall Steam Station	Catawba	2009	765,984.33
Domtar Paper Company, LLC	Martin	2009	730,718.22
Cargill Inc - Raleigh	Wake	2009	703,788.74
Uniboard USA LLC	Chatham	2009	647,406.45
KapStone Kraft Paper Corporation	Halifax	2009	643,298.97
Avoca Incorporated	Bertie	2009	568,725.45
Duke Energy Carolinas, LLC - Riverbend Steam Station	Gaston	2009	549,639.24
Duke Power Company, LLC - Buck Steam Station	Rowan	2009	499,738.52
Pilkington North America, Inc.	Scotland	2009	453,499.98
Weyerhaeuser Company - Vanceboro Pulp And Paper	Craven	2009	373,002.10
Railroad Friction Products Corp	Scotland	2009	372,542.63
Transcontinental Gas Pipeline Company, LLC	Iredell	2009	341,812.89
Shurtape Technologies - Hickory/Highland Plt	Catawba	2009	332,747.83
Progress Energy Carolinas, Inc., W.H. Weatherspoon Plant	Robeson	2009	317,593.07
Progress Energy - Roxboro Plant	Person	2009	316,009.98
PPG Industries Fiber Glass Products, Inc.	Davidson	2009	296,306.53
Technical Coating International, Inc.	Brunswick	2009	249,406.20
Duke Energy Carolinas, LLC - Dan River Steam Station	Rockingham	2009	220,644.28

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Transcontinental Gas Pipe Line Company, LLC - Station 160	Rockingham	2009	216,689.39
3M Sanford - Plant 13	Lee	2009	170,677.34
Louisiana-Pacific Corporation - Roaring River	Wilkes	2009	168,268.11
Pine Hall Brick Co., Inc.	Rockingham	2009	159,111.27
Corning Incorporated	New Hanover	2009	143,856.00
CPI USA North Carolina - Southport Plant	Brunswick	2009	124,836.08
CertainTeed Corporation	Granville	2009	119,217.09
Carolina Classic Mfg Inc	Wilson	2009	115,119.18
Cunningham Brick Company, Inc.	Cleveland	2009	114,221.40
Shurtape Technologies, Inc. - Plant No. 24	Caldwell	2009	109,452.30
Hanson Brick East, LLC - Pleasant Garden Plant #1	Guilford	2006	106,698.69
Stanley Furniture Company, Inc.	Graham	2009	93,432.58
Weyerhaeuser NR Company - Elkin Facility	Surry	2009	92,975.14
Marine Corps Air Station	Craven	2009	91,440.15
Ajinomoto AminoScience, LLC	Wake	2009	91,246.62
UPM Raflatac, Inc	Henderson	2009	89,275.81
National Spinning Co., Inc. - Alamance Co. Dyeing Operation	Alamance	2005	86,233.12
Invista, S.a.r.l.	New Hanover	2009	79,687.89
Daimler Trucks North America - Cleveland Plant	Rowan	2009	78,023.82
Structural Coatings Inc.	Johnston	2009	75,592.00
Lee Brick and Tile Company	Lee	2009	75,487.50
Unilin Flooring N.V.	Montgomery	2009	73,546.86
Georgia-Pacific Chemicals, LLC - Conway	Northampton	2009	70,232.81
Camp Lejeune Marine Corp Base	Onslow	2009	64,577.78
Saint-Gobain Containers	Vance	2009	64,410.12
MillerCoors LLC	Rockingham	2009	61,573.69
Progress Energy Carolinas Inc. - Richmond Cty Comb Turbine	Richmond	2009	58,183.24
Sonoco Products Company - Forest City Plant	Rutherford	2006	57,799.62
House of Raeford Farms - Killing Plt	Hoke	2004	56,528.13
The Goodyear Tire & Rubber Company	Cumberland	2009	56,438.43
Canplast USA, Inc.	Guilford	2005	54,664.00
S & D Coffee, Inc.	Cabarrus	2009	53,816.07
Fleet Readiness Center East	Craven	2009	52,161.39

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
T.D. Custom Coatings, Inc.	Randolph	2005	50,971.37
Marsh Furniture Company	Guilford	2009	45,614.97
Statesville Brick Company	Iredell	2009	44,452.28
Universal Leaf North America, Inc.	Nash	2005	43,644.76
El du Pont - Kinston Plant	Lenoir	2009	42,265.64
Indopco, Inc. dba Henkel,	Rowan	2008	41,019.36
OMNOVA Solutions, Inc.	Union	2009	39,990.78
Carolina Cast Stone Co., Inc.	Guilford	2009	39,657.97
Edgecombe Genco, LLC	Edgecombe	2009	39,298.40
Exopack - Thomasville, LLC	Davidson	2009	39,180.12
Transcontinental Gas Pipeline Company, LLC - Station 155	Davidson	2009	38,697.26
Momentive Specialty Chemicals, Inc. - Fayetteville Facility	Cumberland	2009	37,577.94
XMC Films, Inc.	Robeson	2007	37,249.15
Akzo Nobel Surface Chemistry LLC.	Rowan	2009	37,168.99
Nash Brick Company Inc	Halifax	2006	36,701.53
Grady - White Boats Inc	Pitt	2009	36,135.54
Smithfield Packing Company Inc - Tar Heel	Bladen	2009	36,073.72
Patch Rubber Company	Halifax	2004	35,858.07
Thomasville Furniture Industries, Inc. - Lenoir Plant	Caldwell	2009	34,244.03
Unilin Flooring NC, LLC - Thomasville Facility	Davidson	2009	33,705.29
General Shale Brick, Inc. Moncure Facility	Chatham	2009	32,795.99
Plastic Packaging Inc	Catawba	2009	32,602.47
Wilsonart International, Inc.	Henderson	2009	31,672.23
Georgia - Pacific Plywood/OSB/CNS - Dudley	Wayne	2009	31,477.09
New Hanover County WASTEC	New Hanover	2009	31,407.48
HQ XVIII ABN Corps & Fort Bragg	Cumberland	2009	31,307.47
Southern States Cooperative, Inc., Statesville Fertilizer	Iredell	2006	31,289.70
Colonial Pipeline Company	Guilford	2009	30,964.20
West Fraser, Inc. - Armour Lumber Mill	Columbus	2009	30,449.04
Coastal Carolina Clean Power LLC	Duplin	2009	29,576.65
Carolina Custom Finishing, LLC	Randolph	2006	29,472.62
PPG Industries Fiber Glass Products Inc	Cleveland	2009	29,281.24
NEPTCO, Inc.	Caldwell	2009	29,084.00
Eudy's Cabinet Shop, Inc.	Stanley	2007	28,334.88
Mallinckrodt Inc	Wake	2005	28,096.36

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
The Sherwin - Williams Company - Stagecoach Trail	Guilford	2009	28,045.00
JPS Composite Materials Corporation - Statesville Plant	Iredell	2007	27,527.84
Sampson County Disposal LLC	Sampson	2009	27,324.80
BFI Waste Systems of North America, CMS Landfill V	Cabarrus	2009	27,258.25
Louisiana-Pacific Corp - Roxboro	Person	2009	26,938.35
Roanoke Valley Energy Facility	Halifax	2009	26,851.60
Bridgestone/Firestone Inc	Wilson	2009	26,523.50
MBCI - MasterBrand Cabinets Inc	Lenoir	2009	25,929.19
Column & Post Inc.	Wake	2009	25,877.59
Southern States Chemical	New Hanover	2009	25,846.00
Taylor Clay Products, Inc.	Rowan	2006	25,812.22
Raven NC, LLC	Johnston	2009	24,380.21
The Sherwin - Williams Co, Consumer Group	Guilford	2009	24,153.00
3A Composites USA Inc.	Iredell	2009	24,009.42
West Fraser - Seaboard Lumber Mill	Northampton	2009	23,613.27
Alliance One International - Farmville	Pitt	2007	23,517.64
Perdue Farms Inc - Lewiston	Bertie	2009	23,308.73
H W Culp Lumber Co, Inc	Stanley	2009	22,931.02
Plant Rowan County	Rowan	2009	22,852.60
Cormetech Inc	Durham	2005	22,637.27
Loparex LLC	Rockingham	2009	22,377.20
Regulator Marine Inc	Chowan	2009	22,374.00
JELD-WEN, Inc.	Macon	2009	22,238.00
Kordsa, Inc.	Scotland	2006	22,201.55
Majestic Marble and Glass Company - Youngsville	Franklin	2009	22,166.36
Alliance One International - Stantonsburg Road facility	Wilson	2004	22,106.31
Troy Lumber Co	Montgomery	2009	21,557.83
CNA Holdings, Inc.; Ticona Polymers Shelby Plant	Cleveland	2009	21,499.23
University of North Carolina at Chapel Hill	Orange	2009	21,446.84
Jordan Lumber & Supply Co	Montgomery	2009	20,646.38
Hanes Dye and Finishing Co.	Granville	2007	20,608.63
Baxter Healthcare Corporation	Macon	2009	20,564.82
Performance Fibers Operations, Inc. - Salisbury Plant	Rowan	2009	20,557.45
Firestone Fibers and Textiles Company, Kings Mountain Plant	Gaston	2006	20,320.30
Ramsey's Finishing, Inc.	Catawba	2008	20,272.94

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
CPI USA North Carolina - Roxboro Plant	Person	2009	19,648.56
RPM Wood Finishes Group, Inc.	Caldwell	2007	19,492.08
Matlab, Inc. - Plants 1-4, 5, 7, 8 and 11	Randolph	2007	18,959.98
Saint-Gobain Containers	Wilson	2009	18,487.84
Columbia Plywood Corporation - Columbia Carolina Division	Macon	2005	18,370.17
Classic Leather, Inc.	Catawba	2006	18,259.78
Ball Metal Beverage Container Corp	Rockingham	2009	18,240.15
Conestoga Wood Specialties - Kenly	Johnston	2006	17,592.90
Piedmont Fiberglass, Inc.	Alexander	2009	17,526.10
Montana Tractors, LLC - Tarboro Facility	Edgecombe	2005	17,277.17
Braxton Culler, Incorporated	Randolph	2009	17,268.52
Century Furniture Industries Plant #1	Catawba	2009	17,173.30
K-Flex USA, LLC	Franklin	2008	17,130.72
Bridgestone-Bandag, LLC	Granville	2009	17,065.89
DuPont Company - Fayetteville Works	Bladen	2009	16,940.11
Commscope, Inc. - Catawba Plant	Catawba	2006	16,703.60
ASMO North Carolina, Inc.	Iredell	2006	16,438.48
Fairfield Chair Plant No. 2	Caldwell	2009	16,437.18
TEREX Cranes Wilmington, Inc.	New Hanover	2007	16,349.54
Akzo Nobel Coatings, Inc.	Guilford	2009	16,295.21
Jackson Paper Manufacturing Company	Jackson	2009	15,897.12
Jones Brothers Marine Manufacturing, Inc.	Carteret	2006	15,840.00
PBM Graphics - A Consolidated Graphics Company	Durham	2005	15,700.00
Allen Industries, Inc.	Guilford	2008	15,676.78
B & H Panel Company	Randolph	2009	15,500.93
Acme-McCrary Corporation - Siler City Plant	Chatham	2008	15,427.66
Athena Marble Inc.	Rowan	2005	15,345.80
Molded Fiberglass Co/North Carolina	Burke	2009	14,556.22
Lorillard Tobacco Company	Guilford	2009	14,446.14
Concept Plastics, Inc.	Guilford	2006	14,428.55
Textile Piece Dyeing Co., Inc.	Lincoln	2009	14,341.78
Johnston County MSW Landfill	Johnston	2008	14,136.40
Nina Plastics	Union	2006	14,013.00
Philip Morris USA Inc., Cabarrus Manufacturing Facility	Cabarrus	2009	14,001.05
Starpet, Inc.	Randolph	2008	13,915.13

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
FMC Corporation - Lithium Division	Gaston	2009	13,881.26
Ingersoll - Rand Tool and Hoist Division	Moore	2006	13,761.01
Kurz Transfer Products, LP	Davidson	2009	13,757.09
Lampe and Malphrus Lumber Company	Johnston	2008	13,668.20
Kincaid Furniture Company, Inc. - Plant No. 1	Caldwell	2009	13,665.53
Oliver Rubber Company	Randolph	2009	13,550.32
Printpack, Inc.	Henderson	2009	13,449.23
Vaughan-Bassett Furn Co - Elkin Furniture	Surry	2009	13,399.57
Firestone Fibers & Textiles Company, LLC	Gaston	2009	13,256.15
Parker Marine Enterprises Inc	Carteret	2009	13,062.76
Pentair Water Pool and Spa, Inc.	Lee	2006	12,992.28
Halcore Group, Inc. d/b/a American Emergency Vehicles, Inc.	Ashe	2007	12,986.35
Prodelin Catawba Molding Facility	Catawba	2006	12,958.20
Magna Composites, LLC - Lenoir	Caldwell	2009	12,799.81
Fortron Industries LLC	New Hanover	2009	12,782.50
Windsor Fiberglass, Inc.	Pender	2005	12,680.20
LIAT, LLC - Jasper Library Furniture - Plant 1	Iredell	2005	12,575.64
Sandoz	Wilson	2005	12,517.09
Affinia Group, Inc., Wix Filtration Corp. - Allen Plant	Gaston	2009	12,243.50
Commercial Fabricators, Inc.	Catawba	2008	12,085.93
Commscope Inc. - Claremont Operations	Catawba	2007	12,017.20
Uchiyama America Inc	Wayne	2007	11,997.24
Charlotte Pipe and Foundry Company - Plastics Division	Union	2006	11,964.47
Viking Pools, LLC - Rocky Mount	Edgecombe	2009	11,902.30
Victaulic Company	Brunswick	2007	11,900.02
Trelleborg Coated Systems US, Inc - Grace Advanced Materials	Rutherford	2009	11,887.16
Apex Tool Group, LLC - Apex NC Operation	Wake	2009	11,830.99
Fiber Dynamics, Inc.	Guilford	2007	11,821.10
New South Lumber Company, Inc. - Graham Plant	Alamance	2009	11,738.26
Magna Composites LLC - Salisbury Operations	Rowan	2009	11,499.21
Norcraft Companies, LP, dba UltraCraft Cabinetry	Randolph	2009	11,429.93
Parton Lumber Company, Inc.	Rutherford	2008	11,270.93
Boral Bricks Inc - Salisbury Plant	Rowan	2009	11,222.41
Carolina Steel Group LLC - Colfax	Guilford	2009	11,185.50

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Rose Brothers Paving Co Inc. - Windsor	Bertie	2006	11,183.32
LNS Turbo, Inc. - Kings Mountain	Gaston	2006	11,053.20
Drexel Heritage Furniture Industries, Inc. Plt. 60	Burke	2008	10,860.14
Moncure Plywood, LLC	Chatham	2009	10,859.18
Carolina Counters Corporation	Cabarrus	2008	10,767.01
Hatteras Yachts	Craven	2009	10,711.20
Grede II - Biscoe, LLC	Montgomery	2005	10,658.02
Thomas Built Buses - Fairfield Road	Guilford	2009	10,623.58
HBD Industries Inc.	Rowan	2009	10,546.43
Hickory Chair Company	Catawba	2009	10,430.43
Fountain Power Boats	Beaufort	2009	10,413.30
HC Composites LLC	Edgecombe	2009	10,342.00
GE Lighting Solutions, LLC	Henderson	2005	10,175.89
Purolator Filters NA, LLC	Cumberland	2009	10,149.59
Mack Molding Company	Iredell	2006	10,096.80
CTI of NC Inc	New Hanover	2009	10,096.21
DAK Americas, LLC	Cumberland	2009	10,067.67
The Goodyear Tire & Rubber Company	Randolph	2005	9,839.76
Copland Industries, Inc.	Alamance	2007	9,763.89
Crane Co., Crane Resistoflex	Macon	2006	9,750.67
Elementis Chromium	New Hanover	2009	9,730.81
Coats American - Sevier Plant	Macon	2009	9,721.62
Gatza Marble Products	Gaston	2005	9,633.00
Mohican Mills, Inc.	Lincoln	2005	9,512.04
New Hanover County Secure Landfill	New Hanover	2009	9,490.80
Cardinal Fg Flat Glass Plant	Iredell	2009	9,475.18
Chemetall Foote Corporation Kings Mountain	Cleveland	2009	9,295.40
Olympic Steel - PS&W	Chatham	2005	9,281.80
Henniges Automotive North Carolina, Inc.	Rockingham	2008	9,274.86
Bernhardt Furniture Company - Plants 3 & 7	Caldwell	2009	9,190.99
Smithfield - Clinton Plant	Sampson	2006	9,112.70
Upper Piedmont Regional Landfill	Person	2009	9,085.74
Burlington Industries LLC - Raeford Plant	Hoke	2009	9,068.50
Bolection Door, A Division of Marshfield DoorSystems, Inc.	Guilford	2005	9,024.24
Onslow County Landfill	Onslow	2009	8,971.46

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Momentive Specialty Chemicals, Inc. - Acme Operations	Columbus	2009	8,893.24
Curtiss-Wright Controls, Inc.	Cleveland	2005	8,891.87
Nucor Steel	Hertford	2009	8,800.02
Craven County Wood Energy	Craven	2009	8,725.12
International Resistive Company, Inc.	Watauga	2006	8,707.02
Freightliner LLC--Mount Holly Truck Manufacturing Plant	Gaston	2009	8,703.08
Whitley Handle, Inc.	Cabarrus	2007	8,683.00
Engineered Polymer Solutions, Inc. dba Valspar Coatings	Guilford	2007	8,662.13
Tyson Foods, Inc. Harmony	Iredell	2009	8,619.37
Highland Tank of North Carolina, Inc.	Guilford	2005	8,603.00
Cooper-Standard - Fedelon Trail	Wayne	2009	8,585.05
Kohler Co., DBA Baker Furniture	Burke	2009	8,470.30
W.C. Richards Company of Carolina, Inc.	Moore	2009	8,448.00
Weyerhaeuser NR Company - New Bern Lumber Facility	Craven	2009	8,429.70
Mint Hill Cabinet Shop, Inc.	Union	2006	8,425.20
Colfax Pump Group, IMO Pump Division	Union	2008	8,385.30
Pfizer	Lee	2008	8,311.17
Guilford Mills, Inc. - Friendship Facility	Guilford	2005	8,274.54
Mickey Truck Bodies Inc	Guilford	2009	8,179.07
Bakers Waste Equipment, Inc.	Burke	2006	8,096.00
Kivetts Incorporated	Sampson	2006	8,007.00
Iredell Transmission, LLC	Iredell	2009	7,951.70
Armstrong Hardwood Flooring Company - Statesville Plant	Iredell	2009	7,866.39
Corning Cable Systems, LLC - Hickory Cable Facility	Catawba	2007	7,862.19
Leggett & Platt Office Components, LLC	Randolph	2006	7,807.09
Carolina CAT	Iredell	2008	7,795.72
Linwood Furniture, Inc.	Davidson	2009	7,736.00
Gastonia Components & Logistics, LLC	Gaston	2008	7,708.54
Davis Furniture Industries, Inc.	Guilford	2008	7,666.84
Old Carolina Brick Company	Rowan	2009	7,650.06
Veneer Technologies, Inc.	Carteret	2006	7,600.00
Draka Communications Americas, Inc.	Catawba	2009	7,591.05
Bassett Upholstery Division	Catawba	2005	7,525.14
Ethan Allen Operations, Inc. - Pine Valley Division	Macon	2009	7,326.03
Cumberland Co - Ann Street Landfill	Cumberland	2009	7,292.95

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Marathon Petroleum Company LP - Selma	Johnston	2005	7,262.90
RF Micro Devices, Inc. - FAB1, FAB3 and Packaging	Guilford	2009	7,149.97
Uwharrie Regional Landfill	Montgomery	2009	7,143.58
Toney Lumber Company Inc	Franklin	2005	7,032.00
Keener Lumber Company Inc	Johnston	2008	7,025.48
Laneventure	Catawba	2008	7,001.57
IAC Albemarle, LLC.	Stanley	2009	6,941.00
Frit Car, Inc.	Craven	2009	6,929.00
NGK Ceramics USA, Inc.	Iredell	2006	6,924.04
Stanly Fixtures Acquisition, LLC, dba Stanly Fixtures	Stanley	2005	6,910.01
DAR/RAN Furniture Industries, Inc.	Randolph	2006	6,807.96
City of Greensboro - Thomas Z. Osborne POTW	Guilford	2007	6,790.08
Lubrizol Advanced Materials, Inc.	Gaston	2005	6,762.54
Councill Company, LLC - Plant #1	Davidson	2007	6,741.91
J & P Finishing, Inc.	Randolph	2007	6,710.54
Taylor Mfg	Bladen	2004	6,690.00
Carolina Pole Leland, Inc.	Brunswick	2007	6,671.91
Interstate Brands - Merita	Nash	2009	6,670.19
Univar USA, Inc. - 108 Oakdale Road, Jamestown, NC	Guilford	2007	6,627.72
Gould & Goodrich Leather Inc	Harnett	2006	6,537.91
Brenntag Southeast, Inc.	Durham	2006	6,485.39
Hancock & Moore - Plant 1	Alexander	2006	6,482.20
McCreary Modern Inc - Upholstery Plant	Caldwell	2006	6,431.75
Thomasville Furniture Industries, Inc. - Plant C/M/W/SB	Davidson	2009	6,320.09
USCG Base Support Unit Elizabeth City	Pasquotank	2005	6,297.15
G & G Lumber Company, Inc.	Iredell	2009	6,283.54
HWS Company Inc. dba Hickory White	Catawba	2009	6,211.58
Consolidated Diesel Company	Nash	2009	6,156.02
GlaxoSmithKline	Durham	2009	6,140.23
J.H. Craver and Son, Inc.	Yadkin	2006	6,122.00
Becton Dickinson Labware	Durham	2008	6,101.50
Kaylow Furniture Company	Burke	2008	6,073.82
Thomas Built Buses - Courtesy Road	Guilford	2009	6,070.31
Franklin Baking Company - Goldsboro	Wayne	2009	6,064.76
American Greetings Corporation, Inc.	Rutherford	2005	6,046.69

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Citgo Petroleum Corporation	Johnston	2005	6,036.59
Cabinet Makers, Inc.	Iredell	2005	5,883.69
Carolina Solvents, Inc.	Catawba	2007	5,877.91
Lumberton Energy, LLC	Robeson	2009	5,862.81
Elizabethtown Energy, LLC	Bladen	2009	5,818.71
Electra-Finish, Inc.	Randolph	2009	5,818.50
Kimberly Clark Corporation	Davidson	2009	5,815.67
Georgia - Pacific Whiteville Plant	Columbus	2009	5,806.36
TIMCO Aviation Services, Inc.	Guilford	2009	5,773.86
J W Jones Lumber Co Inc	Pasquotank	2009	5,731.57
Eastern Carolina Regional Solid Waste Landfill	Bertie	2009	5,607.56
May-Craft Fiberglass Products Inc	Johnston	2009	5,591.10
BRP US, Inc. - Spruce Pine	Mitchell	2009	5,545.47
Sherrill Furniture Company, Inc.	Catawba	2006	5,538.87
Lexington Furniture Inc., Plant 5	Davidson	2008	5,496.62
ROWMARK, LLC dba Color Path Technologies	Jones	2008	5,406.00
Seymour Johnson Air Force Base	Wayne	2009	5,405.56
Triangle Brick Co - Wadesboro	Anson	2009	5,404.87
Berenfield Containers SE Ltd	Cabarrus	2009	5,327.00
Eaton Aeroquip Incorporated	Nash	2009	5,319.90
Kellex Corporation, Inc. - Valdese Manufacturing	Burke	2005	5,246.49
Granite Hardwoods, Inc.	Caldwell	2005	5,181.06
Georgia - Pacific Roxboro	Person	2009	5,178.67
Mestek Inc	Pitt	2005	5,099.00
Weyerhaeuser Company - Grifton	Pitt	2009	5,095.83
Zickgraf Hardwood Flooring Company, LLC - Plant Z1	Madison	2008	5,083.63
Hackney & Sons Inc	Beaufort	2009	5,072.00
Funder America, Inc.	Davie	2007	5,062.10
Kayser-Roth Hosiery Inc	Robeson	2009	5,053.01
Kinder Morgan Southeast Terminals, LLC - Greensboro Terminal	Guilford	2005	5,051.36
Triangle Brick Company - Merry Oaks	Chatham	2009	4,929.27
Cree Inc - Silicon Dr	Durham	2005	4,923.22
Lenoir Mirror Company, Plants 1 & 3	Caldwell	2009	4,918.29
Associated Hardwood Products, Inc.	Caldwell	2005	4,911.29
Duke University	Durham	2009	4,900.12

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Kinder Morgan Southeast Terminals LLC - Selma #1	Johnston	2005	4,898.90
TransMontaigne Operating Company, L.P.	Guilford	2007	4,888.50
Baldor Electric Company	Cleveland	2006	4,853.56
World Wood Company	Craven	2009	4,820.74
SpartaCraft Inc	Burke	2006	4,760.55
V & E Components, Incorporated	Guilford	2009	4,757.50
Container Products Corporation	New Hanover	2005	4,756.00
Freudenberg Nonwovens Group	Durham	2008	4,733.23
Owens-Brockway Glass Container Plt 6	Davidson	2009	4,728.31
Troutman Chair Company	Iredell	2008	4,727.17
Franklin Veneers Inc	Franklin	2005	4,656.11
Gilbert Hardwood Centers, Inc.	Randolph	2006	4,628.25
D&F Consolidated, Inc. dba Car-Mel Products, Inc.	Iredell	2009	4,595.23
Performance Fibers, Inc.	Chatham	2009	4,585.05
McRae Industries, Inc.	Montgomery	2006	4,575.00
McDowell County Millwork, LLC	Macon	2007	4,547.25
Wilderness N.C., Inc.	Davidson	2009	4,530.07
SGL Carbon LLC	Burke	2009	4,485.65
Hess Corporation - Wilmington Terminal	New Hanover	2009	4,441.09
Vanguard Furniture Company, Inc., Plant No. 2	Catawba	2005	4,435.98
Tuscarora Long-Term Regional Landfill	Craven	2009	4,413.04
Diazit Company Inc	Franklin	2005	4,375.00
Atlantic Veneer Corporation	Carteret	2005	4,279.85
Rusco Fixture Company, Inc.	Stanley	2006	4,254.40
Carolina Finishing, Inc.	Davie	2006	4,242.22
T R Vernal Paving, Inc.	Wake	2007	4,116.23
Elk Creek International, Inc.	Ashe	2007	4,113.81
MeadWestvaco Consumer Packaging Group LLC	Orange	2008	4,094.33
Altec Industries, Inc. - Creedmoor Facility	Granville	2007	4,022.10
Onslow Grading & Paving, Inc.	Onslow	2007	3,975.55
Whitewood Industries, Inc.	Davidson	2009	3,975.00
APAC-Atlantic, Inc. - Plant #11	Guilford	2007	3,970.78
Galvan Industries, Inc.	Cabarrus	2006	3,958.00
Baja Products Ltd.	Rowan	2005	3,877.00
Coffing Hoists	Anson	2007	3,874.98

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
High Point Fibers, Inc.	Guilford	2006	3,854.43
GA Enterprises of Rosman, Inc. d/b/a Vitalie Manufacturing	Transylvania	2007	3,848.00
Cooper Crouse-Hinds, Cooper Interconnect - LaGrange	Lenoir	2006	3,818.53
Dopaco	Lenoir	2003	3,795.01
United Tool & Stamping Company of North Carolina, Inc.	Cumberland	2005	3,792.00
Chemical Specialties, Inc.	Cabarrus	2007	3,781.68
Tower Components, Inc.	Randolph	2007	3,756.00
Jerry G Williams and Sons Inc	Johnston	2005	3,752.60
Maysteel LLC	Granville	2008	3,710.75
Carolina Finishing of North Carolina LLC - Elmira Street	Alamance	2004	3,706.38
Freeman Metal Products Inc	Hertford	2007	3,689.00
The Procter & Gamble Manufacturing Company - Brown Summit	Guilford	2004	3,676.63
DSM Pharmaceuticals, Inc.	Pitt	2009	3,669.08
OBI Linings Inc	Beaufort	2009	3,659.15
Century Furniture Industries, Inc., Plant #3	Catawba	2009	3,634.24
PGI Nonwovens DBA Chicopee Inc	Johnston	2009	3,621.31
Energizer Battery Manufacturing, Inc.	Randolph	2009	3,600.42
Clean Harbors Reidsville, LLC	Rockingham	2006	3,555.80
Slane Hosiery Mills Inc	Guilford	2009	3,538.83
Bernhardt Furniture Company - Plants 2 & 5	Caldwell	2008	3,515.13
Morrisette Paper Company, Inc.	Rockingham	2005	3,512.00
Banner's Cabinets, Inc.	Avery	2005	3,449.10
Alliance One Speciality Products, LLC	Wilson	2009	3,442.87
Carolina Stalite Company	Stanley	2009	3,421.58
Grand Manor Furniture, Inc.	Caldwell	2005	3,407.44
J C Steele & Sons, Inc.	Iredell	2006	3,397.16
The Timken Company, Lincolnton Bearing Plant	Lincoln	2007	3,333.86
Selee Corporation	Henderson	2005	3,297.46
The Woodsmiths Company	Caldwell	2007	3,282.46
DAC Products, Inc.	Yadkin	2006	3,274.00
Gibraltar Packaging Group, Inc.	Montgomery	2009	3,271.74
Lodging by Liberty, Inc.	Randolph	2005	3,268.49
True Elkin, Inc.	Surry	2009	3,254.00
Wesley Hall Incorporated	Catawba	2008	3,251.44
Cox Manufacturing Co Inc	Burke	2006	3,237.73

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
CVG Acquisition, LLC - Kings Mountain Plant	Cleveland	2006	3,210.63
The Loxcreen Company Inc	Person	2006	3,202.60
JELD-WEN, Inc. d/b/a JELD-WEN	Davidson	2006	3,195.52
Pneu-Mech Systems Manufacturing, Inc.	Iredell	2007	3,136.14
Sherrill Furniture Company, Inc., CTH-Sherrill Occasional	Catawba	2008	3,128.86
City of Greensboro - White Street Landfill	Guilford	2009	3,125.27
Pine Mountain Finishing, Inc.	Caldwell	2006	3,105.00
S. T. Wooten Asphalt Mixing Services LLC	Wilson	2005	3,097.00
Corning Incorporated	Cabarrus	2009	3,084.45
NACCO Materials Handling Group Inc	Pitt	2007	3,066.90
HNI Corporation	Catawba	2005	3,036.90
Carolina Business Furniture, LLC	Randolph	2008	3,005.82
J & M Woodworking Plant 2	Caldwell	2007	2,999.06
The Southern Finishing Company, Incorporated - Plant 6	Rockingham	2005	2,989.00
Allen Industries, Inc. - Architectural Signage Division	Guilford	2007	2,979.00
RR Donnelley / Wilson	Wilson	2009	2,976.78
Thomasville Furniture Industries, Inc. - County Line	Davidson	2005	2,943.95
LIAT, LLC - Jasper Library Furniture - Plant 2	Alexander	2009	2,940.70
Radcliffe Marine Sales & Service	Beaufort	2006	2,927.10
United States Gypsum Company	Mitchell	2009	2,923.82
Woodgrain Millwork Inc. - Lenoir	Caldwell	2007	2,919.44
Capital Marble Creations, Inc.	Harnett	2005	2,916.00
E J Victor Inc	Burke	2008	2,885.53
Mayland Court, Inc.	Mitchell	2008	2,878.00
Custom Drum Services, Inc.	Guilford	2009	2,858.01
Austin Quality Foods, Inc.	Wake	2009	2,855.80
Urethane Innovators Inc	Craven	2007	2,850.97
CMH Manufacturing Inc. d/b/a Schult Homes - Plant 957	Rowan	2009	2,846.00
Carolina Stalite Company	Rowan	2009	2,829.88
The Emerson Group, Inc.	Iredell	2007	2,829.00
Unimin Corporation, Crystal Quartz Operation	Mitchell	2006	2,827.76
V and E Components, Inc. dba North Davidson Furniture Co Inc	Davidson	2005	2,802.02
Hardwood Furniture, Inc.	Catawba	2006	2,795.07
North Wake County Landfill Facility	Wake	2009	2,775.98
Certainteed Vinyl Operations	Catawba	2008	2,714.77

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Apex Oil Company, Inc.	New Hanover	2005	2,711.30
National Fruit Product Company, Inc.	Lincoln	2005	2,688.00
Bill Hanks Lumber Company	Stokes	2007	2,673.90
Edwards Wood Products, Inc.	Union	2007	2,665.68
Klingspor Abrasives, Inc.	Catawba	2006	2,661.96
Eastern Minerals, Inc.	Vance	2006	2,659.08
Shamrock Corporation - Chimney Rock Printing	Guilford	2006	2,646.03
Rock-Tenn Company Conover Folding	Catawba	2006	2,636.81
HOF Textiles, Inc.	Lincoln	2007	2,632.84
Michael Thomas Furniture, Inc.	Randolph	2006	2,608.42
Robert Abbey, Inc.	Catawba	2005	2,605.30
Tobacco Rag Processors, Inc.	Wilson	2005	2,603.60
Harris House Furniture Industries Inc	Randolph	2009	2,597.64
Rock-Tenn Company - Claremont Folding	Catawba	2009	2,589.83
Liggett Group LLC	Alamance	2009	2,583.10
INGENCO Wholesale Power, LLC	Craven	2009	2,578.74
Wood Products of Conover	Catawba	2008	2,575.07
Coastal Lumber Weldon Plt	Halifax	2008	2,553.73
International Cushioning Company, LLC Hickory	Catawba	2009	2,544.66
Dow Corning Corporation	Guilford	2003	2,542.95
Carolina House Furniture, Inc.	Catawba	2006	2,520.80
Church & Church Lumber, LLC - Select Hardwoods	Wilkes	2009	2,495.30
Caterpillar Inc., BCP Sanford	Lee	2006	2,477.90
Wayne County Municipal Solid Waste Landfill	Wayne	2009	2,476.70
Carolina Steel Group LLC - Nashville	Nash	2007	2,468.00
Quaker Furniture, Incorporated dba Studio Q Furniture	Catawba	2006	2,466.69
Danaher Sensors & Controls	Bladen	2005	2,463.64
Gulistan Carpet, Inc. - Aberdeen	Moore	2009	2,449.99
Interior Wood Specialties Inc	Bladen	2004	2,441.20
Eaton Aeroquip, Inc.	Rutherford	2005	2,414.26
Mohawk Industries, Inc. - Karastan Eden Rug Mill	Rockingham	2006	2,413.34
BKC Industries Inc	Granville	2007	2,385.80
Ingersoll - Rand Company	Davie	2009	2,362.70
Geo Specialty Chemicals Inc	Martin	2007	2,360.00
Commonwealth Brands, Inc	Rockingham	2007	2,358.25

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Burlington Industries LLC - Richmond Plant	Richmond	2007	2,356.11
Weyerhaeuser NR Company	Martin	2009	2,351.38
Safelite Glass Corporation	Halifax	2005	2,334.29
Blythe Brothers Asphalt Co., LLC - Concord Plant	Cabarrus	2007	2,333.08
Meghan Blake Industries, Inc. dba Hickory Leather Co.	Catawba	2006	2,308.00
Parker Southern, Inc.	Catawba	2006	2,292.37
Mitchell Gold	Alexander	2008	2,286.58
L. Gordon Iron & Metal Company	Iredell	2009	2,281.71
The Interflex Group - Carolina Plant	Wilkes	2009	2,264.60
Conover Chair Acquisition Company, Inc	Catawba	2004	2,247.64
Barnhill Contracting - Fayetteville Plant	Cumberland	2006	2,219.22
Sampson County Landfill	Sampson	2009	2,210.40
Graphic Packaging International Inc.	Robeson	2007	2,174.54
Nomaco Inc - Tarboro	Edgecombe	2009	2,173.31
NCSU Central Heat Plant	Wake	2009	2,168.70
Outdoor Colors, LLC	Rutherford	2008	2,165.69
Hearthstone Enterprises, Inc. dba Charleston Forge Plant V	Alleghany	2009	2,157.17
Avery Dennison Corporation - Lenoir	Caldwell	2007	2,154.00
Krueger International, Inc. dba AGI Industries, Inc.	Guilford	2006	2,134.89
Leviton Manufacturing Company, Inc.	Ashe	2006	2,132.68
Darnel, Inc.	Union	2009	2,124.32
Turlington Lumber Co Inc	Sampson	2005	2,113.18
EGA Products, Inc.	Iredell	2008	2,111.00
Hanson Pipe and Precast - Dunn	Harnett	2006	2,106.32
Strickland Industries Inc	Nash	2006	2,106.00
Williams Steel Company	Guilford	2009	2,098.60
T & S Hardwoods, Inc.	Jackson	2006	2,072.88
Paddy Mountain Lumber, Inc. - M & N Wood Products	Ashe	2009	2,061.34
Conn-Selmer Ludwig Facility Plant 2	Union	2007	2,058.00
Plantation Pipe Line Company	Guilford	2009	2,052.87
B P Products North America, Selma Terminal	Johnston	2009	2,039.71
Apex Tool Group (Gastonia Operations)	Gaston	2006	2,032.82
TransMontaigne Operating Company, LP - Selma Terminal	Johnston	2009	2,023.65
Archer Daniels Midland Company	Brunswick	2009	2,017.69
Unimin Corporation Red Hill Iota Plant	Mitchell	2005	2,009.52

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Magellan Terminals Holdings, L.P. - Greensboro I Terminal	Guilford	2009	1,995.14
Barnhill Contracting Company	Edgecombe	2009	1,994.38
US Flue Cured Tobacco Growers, Inc.	Person	2005	1,992.15
Resco Products, Inc.	Guilford	2005	1,988.28
Novozymes North America, Inc.	Franklin	2009	1,981.26
Marshall's Finishing Company, Inc.	Guilford	2006	1,971.57
Watauga Wood Products, Inc.	Watauga	2007	1,966.57
Bradington-Young LLC, Cherryville Plant	Gaston	2007	1,964.70
Albemarle Sportfishing Boats	Chowan	2009	1,959.79
Carolina Classic Boats Inc	Chowan	2009	1,959.70
Caledonian Alloys, Inc.	Union	2007	1,957.00
Magellan Terminals Holdings, L.P.	Johnston	2005	1,956.52
Louisiana-Pacific Corporation	New Hanover	2008	1,948.20
Stanadyne Corporation	Beaufort	2010	1,941.32
Moen, Inc.	Lee	2005	1,940.80
Jason Incorporated - Janesville Acoustics - Plant 80	Macon	2007	1,934.91
Flanders Filters, Inc.	Beaufort	2009	1,931.68
Campbell Soup Supply Company	Robeson	2009	1,929.51
Heritage Moulding Corporation	Montgomery	2007	1,929.08
Swaim, Inc.	Guilford	2007	1,918.15
Kencraft Manufacturing Inc	Wilson	2009	1,917.80
NC DOC-Enterprise Woodworking Plant	Alexander	2008	1,914.69
Brayton International, Inc.	Guilford	2006	1,894.91
Redbud, LLC	Guilford	2006	1,892.45
Beta Fluid Systems, Inc.	Rockingham	2006	1,890.00
The Gates Corporation	Ashe	2008	1,886.18
APV North America, Inc.	Wayne	2005	1,876.00
Deep River Dyeing Company, Inc.	Randolph	2005	1,875.73
A. M. Haire Body Company, Inc.	Davidson	2008	1,875.44
W A Brown and Son Inc - Plant 2	Rowan	2007	1,856.78
Alamac American Knits, LLC	Robeson	2009	1,831.03
Ran's Finishing, Inc.	Burke	2008	1,828.65
Silgan Can Company	Robeson	2009	1,828.58
Blachford RP Corporation/Kings Mountain Plant	Cleveland	2006	1,818.31
Shinycars Inc.	Guilford	2007	1,808.20

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Southern Furniture Company of Conover #1	Catawba	2005	1,807.95
Metallix, Inc.	Pitt	2006	1,797.25
Norandal USA Inc	Rowan	2009	1,791.66
Blue Ridge Metals Corporation	Henderson	2008	1,779.39
Burns Wood Products, Inc.	Caldwell	2006	1,764.76
Tegrant Diversified Brands, Inc.	Granville	2009	1,764.10
Culp, Inc. - Ticking	Guilford	2005	1,752.25
Cathedral Church Interiors	Sampson	2006	1,748.43
APAC-Atlantic, Inc. - Plant #8	Alamance	2006	1,746.08
Dorothea Dix Campus	Wake	2005	1,741.02
Magellan Terminals Holdings, L.P.	Guilford	2008	1,736.14
Carolina Wood Enterprises, Inc.	Chatham	2008	1,704.34
General Electric Company	Orange	2005	1,688.18
International Paper - Statesville Container	Iredell	2006	1,680.27
Mat NuWood LLC	Caldwell	2009	1,667.03
Ferrellgas, LP d.b.a. Blue Rhino of N.C.- Hamptonville Plant	Yadkin	2008	1,659.00
Kayser-Roth Corporation - Mens Finishing	Alamance	2005	1,649.48
Adams Wood Turning, Inc.	Guilford	2009	1,635.73
Liberty Lumber Company	Randolph	2008	1,624.74
NovaFlex Hose Inc.	Alamance	2008	1,603.12
Perma-flex Roller Technology - Salisbury, LLC	Rowan	2006	1,601.62
Ideal Fastener Corporation	Granville	2006	1,599.20
Superior Wood Products, Inc.	Davidson	2006	1,586.76
Keener Lumber Company	Sampson	2007	1,584.75
United Finishers, Incorporated	Guilford	2009	1,577.94
G & G Refinishing, Inc.	Davidson	2009	1,569.00
Elberta Crate and Box Company	Warren	2009	1,563.27
Millender Furniture Company	Alamance	2005	1,560.00
Mannington Mills, Inc. dba Mannington Laminate Floors	Guilford	2008	1,544.00
Clyde Pearson Company, A Div. of Henredon Furn. Ind., Inc.	Guilford	2006	1,538.57
Lexington Furniture Industries - Plant No. 10	Burke	2007	1,536.02
Glen Raven Technical Fabrics, LLC	Alamance	2009	1,520.50
Gardner Glass Products Inc	Wilkes	2009	1,517.95
NCEMC - Anson Plant	Anson	2009	1,515.19

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Alexander Fabrics, LLLP	Alamance	2008	1,508.80
Evonik Stockhausen, Inc.	Guilford	2004	1,508.57
Clayton Homes Inc	Granville	2005	1,505.00
Performance Fibers Operations, Inc. - Shelby	Cleveland	2006	1,502.27
Conn-Selmer Ludwig Facility, Plant 3	Union	2008	1,497.47
APAC-Atlantic, Inc. - Plant #10	Guilford	2008	1,481.03
Kimberly-Clark Corp., Berkeley Mills	Henderson	2005	1,472.94
National Gypsum Company	New Hanover	2005	1,471.70
Bakery Feeds	Union	2009	1,446.90
DFP, Inc. dba Edward Ferrell + Lewis Mittman	Guilford	2009	1,437.40
Carolina By-Products Fayetteville Division	Cumberland	2009	1,432.67
Rosemary Power Station	Halifax	2009	1,431.67
Craftmaster Furniture Facility	Alexander	2007	1,430.43
Kinder Morgan Southeast Terminals, LLC - Greensboro #2	Guilford	2008	1,427.01
Braxton Sawmill, Inc.	Alamance	2005	1,397.91
Delta Apparel, Inc.	Catawba	2009	1,397.37
Blue Ridge Paper Prod. dba Evergreen Packaging - Waynesville	Haywood	2004	1,392.31
Hospira, Inc.	Nash	2009	1,381.49
Cooper Bussmann Inc.	Wayne	2009	1,365.80
ITG/Burlington Industries LLC -Burlington Finishing Plant	Alamance	2009	1,364.40
Stanford Furniture Corporation	Catawba	2009	1,355.99
Godfrey Lumber Company, Inc.	Iredell	2008	1,355.88
Environmental Air Systems, Inc	Guilford	2005	1,352.80
C. C. Mangum Company, LLC. - Westgate plant	Wake	2005	1,349.88
Russell Carroll Manufacturing	Wake	2005	1,346.73
N. S. Flexibles, LLC	Guilford	2009	1,340.89
The Huck Group Inc.	Stanley	2006	1,340.04
Barnes Paving Company, Inc.	Robeson	2008	1,337.31
City of Durham Sanitary Landfill	Durham	2006	1,337.10
Pennsylvania Transformer Technology, Inc.	Hoke	2006	1,336.50
Jowat Corporation	Randolph	2006	1,315.00
Duke Energy Carolinas, LLC - Rockingham Co. Comb. Turbine	Rockingham	2009	1,314.54
Synthetics Finishing Longview	Catawba	2009	1,313.93
Goodman Millwork, Inc.	Rowan	2006	1,309.18

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Wingfoot Commercial Tire Systems, LLC	Rowan	2006	1,309.10
Dell Inc	Davidson	2008	1,308.22
Chambers Fabrics, Inc.	Guilford	2009	1,307.09
Fairfield Chair Plant 1	Caldwell	2005	1,302.24
AEP Industries, Inc.	Union	2008	1,290.32
Kaba Ilco Corporation	Nash	2005	1,273.90
Maymead Materials, Inc.	Macon	2009	1,267.56
HK Research Corporation	Catawba	2005	1,266.85
Greene Brothers Furniture Company	Wilkes	2009	1,247.19
Special Fab & Machine, Inc.	Davidson	2009	1,244.43
OmniSource Southeast, LLC - Smithfield	Johnston	2005	1,243.59
Universal Leaf North America Oxford Facility	Granville	2005	1,227.83
Rea Contracting (Garner)	Wake	2006	1,223.09
Technicon Acoustics	Cabarrus	2005	1,220.00
Miller Control and Manufacturing Co Inc	Sampson	2009	1,215.13
Rea Contracting (Kings Mountain)	Cleveland	2007	1,214.83
Armacell LLC	Orange	2009	1,209.81
Stericycle, Inc.	Alamance	2009	1,207.76
Trinity Furniture, Inc.	Randolph	2005	1,207.10
Blythe Construction, Inc - Plant #1	Guilford	2008	1,201.20
Godwin Manufacturing Company, Inc.	Harnett	2007	1,198.34
Cronland Lumber Co., Inc.	Rowan	2009	1,196.28
C. C. Mangum Company, LLC - Knightdale Asphalt Plant	Wake	2006	1,190.27
Gelder & Associates Incorporated	Wake	2005	1,186.47
Zink Imaging Incorporated	Guilford	2009	1,182.63
Consolidated Metco, Inc. - Bryson City	Swain	2009	1,170.81
Highland International, Inc.	Watauga	2008	1,167.00
Dimension Milling Company, Inc.	Davidson	2006	1,164.81
Conopco, Inc.	Hoke	2005	1,158.17
Aleris Rolled Products, Inc.	Person	2005	1,155.63
South Fork Industries, Inc.	Lincoln	2007	1,153.43
Gotico Furniture and Accents, Inc.	Randolph	2005	1,152.83
J & D Wood Inc.	Robeson	2007	1,150.52
H & H Furniture Manufacturers, Inc. - Plant 2	Randolph	2007	1,149.80
Quality Veneer Company	Randolph	2006	1,143.26

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Sharpe Bros., a Div. of Vecellio & Grogan, Inc.-Lebanon Rd.	Guilford	2007	1,129.96
APAC-Atlantic, Inc. - Plant # 9	Randolph	2006	1,117.50
Henredon Furniture Industries, Inc.	Surry	2008	1,105.00
Michelin Aircraft Tire Company	Stanley	2009	1,100.70
Safco Patrician Company	Guilford	2007	1,097.82
Innospec Performance Chemicals U.S. Co.	Guilford	2006	1,096.31
Clayton Homes - Henderson	Vance	2006	1,092.23
Powell Industries, Inc.	Swain	2005	1,070.05
Ornamental Products, LLC	Guilford	2009	1,066.46
Barnhill Contracting Company - Princeton	Johnston	2007	1,064.63
Beard Hardwoods, Inc.	Guilford	2009	1,057.56
Kinder Morgan Southeast Terminals	Johnston	2009	1,050.45
Rea Contracting (Denver)	Lincoln	2007	1,050.02
B & E Custom Cabinets, Inc.	Rowan	2008	1,047.00
Magna Composites LLC	Catawba	2008	1,040.65
Highland Paving Company, LLC	Cumberland	2008	1,035.36
Southport Boat Works	Brunswick	2009	1,028.10
Ferguson Copeland, LLC d/b/a Ferguson Copeland Ltd	Burke	2009	1,026.84
City of High Point - Eastside Wastewater Treatment Plant	Guilford	2008	1,023.75
Robinson Lumber Company, Inc.	Caldwell	2006	1,023.72
NIEHS	Durham	2007	1,001.94
Style Upholstering, Inc.	Catawba	2006	998.00
Arc Terminals Holdings LLC	Johnston	2005	995.70
Southern Resin, Inc.	Davidson	2005	995.06
Barnhill Contracting Company - Greenville Plant	Pitt	2003	986.17
Gilkey Lumber Company, Inc.	Rutherford	2007	973.09
Old Carolina Brick Gold Hill	Rowan	2009	972.78
Maaco Auto Painting & Body Shop	Alamance	2005	970.00
Carolina Sunrock LLC - Muirhead Distribution Center	Durham	2006	968.19
Edwards Brothers Inc	Harnett	2008	964.63
WSACC - Rocky River Regional WWTP	Cabarrus	2008	964.23
Taylor King Furniture, Inc.	Alexander	2006	962.01
Distinction Leather Company, Plant #1	Catawba	2006	950.02
Pruitt Lumber Company Inc.	Franklin	2008	941.40
Santa Fe Natural Tobacco Co. - Knotts Grove Rd.	Granville	2008	940.10

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
TEAM Industries Andrews, Inc.	Cherokee	2009	933.00
Shamrock Environmental Corporation	Guilford	2009	931.23
Tyson Farms, Inc.	Wilkes	2007	926.91
Ethan Allen Operations, Inc. Maiden Division	Catawba	2008	917.19
Haworth, Inc. - Haworth Wood Seating	Guilford	2005	915.93
Blythe Construction, Inc., Plant No. 8	Lincoln	2007	911.77
Woodgrain Millwork, Inc.	Caldwell	2009	910.98
APAC-Atlantic, Inc. - Hendersonville	Henderson	2008	899.34
Bossong Hosiery Mills Inc	Randolph	2005	897.27
Mocaro Dyeing & Finishing Co	Iredell	2005	896.89
Motiva Enterprises LLC - Greensboro	Guilford	2008	895.44
Dimension Wood Products, Inc. - Brian Drive Plant	Catawba	2009	894.62
Larco Construction - Division of Sloan Construction Co., Inc	Guilford	2009	891.16
Barnhill Contracting Company - Rockingham Plant	Richmond	2006	891.13
Vintage Editions, Inc.	Alexander	2007	890.50
Ferebee Asphalt Corporation	Cabarrus	2007	889.80
The Procter & Gamble Manufacturing Company	Guilford	2009	884.81
Total Petrochemicals USA, Inc. - Former Fina Bulk Terminal	Guilford	2009	884.40
Arrow International, Inc. - Asheboro	Randolph	2004	884.26
Southern Pipe, Inc.	Stanley	2007	884.00
Jalco, Inc.	Randolph	2008	881.90
Saab Barracuda, LLC	Harnett	2006	880.96
Hickory Springs Manufacturing - Conover Complex	Catawba	2009	879.93
Southwood Furniture Corporation	Catawba	2005	876.61
International Paper Company - Lumberton Packaging Plant	Robeson	2006	875.00
Motiva Enterprises - Fayetteville Terminal	Cumberland	2008	873.77
Raleigh Steam Producers LLC	Wake	2005	865.51
Barnhill Contracting Company	New Hanover	2009	861.36
Motiva Enterprises LLC	Wake	2007	858.09
Maymead Materials Inc	Avery	2007	857.43
Adden Furniture, Inc.	Burke	2007	844.13
Oaks Unlimited, Inc.	Haywood	2009	841.05
D.R. Kincaid Chair Company, Inc.	Caldwell	2009	840.92
ITL Corp., Industrial Timber & Lumber Company	Macon	2009	838.75

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Lee Roys Frame Company, Inc.	Catawba	2005	838.49
J's Color Creations, Inc.	Randolph	2007	836.78
Leisure Craft, Inc.	Henderson	2005	836.50
S.T. Wooten Corporation - Haw River Asphalt	Alamance	2005	832.33
Associated Rack Corporation, Southeastern Rack Co. Division	Rutherford	2007	832.00
Vertellus Performance Materials, Inc.	Guilford	2009	829.62
Carl Rose & Sons, Inc. - Elkin Asphalt Plant	Surry	2007	827.36
JMC (USA), Inc. - RTP Facility	Durham	2006	827.09
Unitex Chemical Corporation	Guilford	2006	823.28
Rea Contracting (Kannapolis)	Rowan	2007	821.69
Lane Furniture Industries Inc. Royal Development Co Division	Guilford	2007	821.14
Buckeye Mt. Holly, LLC	Gaston	2008	811.87
Allens, Inc.	Sampson	2009	804.55
Nexans, Inc.	Wilson	2005	798.00
Cascades Tissue Group - NC, a Div of Cascades Holding Inc	Richmond	2006	794.02
Cherokee County Landfill	Cherokee	2008	781.30
Perdue Grain and Oilseed, LLC - Cofield	Hertford	2009	780.97
Coats American, Inc. d/b/a Coats North America	Henderson	2009	772.68
Rea Contracting (West Raleigh)	Wake	2009	771.98
Matlab, Inc. - North Facility	Randolph	2007	768.75
Treeforms, Inc.	Guilford	2006	767.10
WNC Dry Kiln, Inc. - Morganton	Burke	2005	754.54
Brushy Mountain Enterprises	Alexander	2006	747.45
McMurray Fabrics, Inc. - Lincolnton	Lincoln	2007	739.65
Ecoflo, Inc.	Guilford	2006	726.51
W - L Construction & Paving, Inc.-Asphalt Plant #4318	Caswell	2009	726.30
Barnhill Contracting Company - Lumberton Plant	Robeson	2005	716.93
Guilford Mills, Inc. - East Plant	Duplin	2009	716.29
Century Furniture Company, Upholstery Division-Plant #2	Catawba	2006	713.08
W.M. Cramer Lumber Co	Burke	2008	704.84
J. T. Russell & Sons, Inc. - Conover Plant	Catawba	2005	702.14
Maymead Materials, Inc. - Brown Brothers Site	Watauga	2007	698.25
Hanson Brick East, LLC, dba Hanson Brick-Monroe	Union	2009	697.55
Chase Coating & Laminating	Alexander	2009	697.05

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Sara Lee Bakery	Edgecombe	2008	693.61
Lee Industries, Inc.	Catawba	2006	689.50
KBAR Parts L.L.C.	Bladen	2009	684.05
John Umstead Hospital	Granville	2005	681.00
Cleveland Regional Medical Center	Cleveland	2005	679.00
APAC-Atlantic, Inc. - Plant #13 Mocksville	Davie	2007	678.77
Swaim Metals, Inc.	Guilford	2008	677.96
S. T. Wooten Corporation - Sanford Asphalt Plant	Lee	2008	677.94
Rea Contracting (Gresham Lake)	Wake	2007	677.33
Airboss Rubber Compounding (NC) Inc.	Halifax	2009	676.56
Conitex-Sonoco, USA Inc.	Gaston	2005	674.33
Appalachian Hardwood Flooring	Catawba	2006	674.25
American Drew, Inc. - Plant 14	Wilkes	2008	672.76
Hitachi Metals North Carolina, Ltd.	Rowan	2008	669.28
Bally Refrigerated Boxes, Inc.	Carteret	2009	667.80
Western Roto Engravers, Incorporated	Guilford	2005	666.99
RR Donnelley, Litho Plant	Durham	2005	665.20
Barnhill Contracting Company	Wake	2009	661.98
Printpack, Inc. - Marshall	McDowell	2008	657.77
S.T. Wooten Corporation - Plant No. 15	Montgomery	2006	656.79
Asphalt Paving of Shelby, Inc.	Cleveland	2007	654.25
Surtronics Inc	Wake	2005	651.37
Maymead Materials, Inc. - Maymead Statesville Plant	Iredell	2005	650.94
Environmental Inks & Coatings	Burke	2007	650.00
Timmerman Mfg. Inc.	Catawba	2008	649.34
Appalachian State University	Watauga	2009	646.08
Decore-ative Specialties, Inc.	Union	2008	644.68
Jessica Charles LLC	Guilford	2008	643.36
S.T. Wooten Corporation Princeton Asphalt Plant 205	Johnston	2002	643.30
Cone Denim LLC - White Oak Plant	Guilford	2009	641.47
Harrison Construction Division of APAC-Atlantic, Inc.	Jackson	2005	637.27
Warlick Paint Company, Inc.	Iredell	2007	636.17
Mine Safety Appliances	Onslow	2009	636.07
Arclin USA, LLC	Chatham	2005	632.40
Wood Products Inc	Wake	2006	628.14

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Oro Manufacturing Company	Union	2009	623.83
Hanesbrands, Inc. - Mt. Airy Socks	Surry	2006	623.68
Gulistan Carpet, Inc. - Wagram	Scotland	2008	621.76
Resinall Corp Severn Plt	Northampton	2008	621.34
Carolina Yarn Processors, Division of Fendrich	Polk	2005	615.19
S.T. Wooten Corporation	New Hanover	2009	610.12
Parker Hannifan Corporation	Gaston	2009	608.10
Nashville Division of Cavalier Home Builders, LLC	Nash	2004	606.14
Timber Wolf Forest Products, Inc.	Caldwell	2005	603.00
HM Real Estate Co. No. 1 dba Woodmark Originals, Inc.	Guilford	2008	600.52
Burlington Distributing Company - Old Master Cabinet Co	Guilford	2009	599.27
The University of North Carolina at Greensboro - Physical pl	Guilford	2005	598.97
Hornwood Inc	Anson	2008	598.91
APAC-Atlantic, Inc., Salisbury Plant # 69	Rowan	2007	594.94
Charles Cabinets Inc	Johnston	2006	590.68
Apex Oil Company, Inc.	Guilford	2007	590.34
Talecris Biotherapeutics, Inc.	Johnston	2006	586.09
Atlantic Industrial Finishing, Inc.	Granville	2008	578.35
Clariant Corporation	Mecklenburg	2008	578.12
EnWood Structures Inc	Wake	2003	576.72
Lenox Corporation	Lenoir	2007	573.64
Columbus Industries, LLC	Bladen	2007	570.10
Shamrock Corp - Bruce St	Guilford	2009	569.00
3M Industrial Mineral Products	Chatham	2009	567.72
Barnhill Contracting Company - Elizabeth City	Pasquotank	2006	567.38
The North Carolina Moulding Company	Davidson	2009	562.91
Mueller Steam Specialty	Robeson	2007	553.05
Cooper Standard Automotive - Woodland Church Road	Wayne	2006	550.30
S.T. Wooten - Pittsboro Asphalt Plant	Chatham	2006	548.70
Pharr Yarns, Inc., Space Dye Plant	Gaston	2009	547.51
Carolina Sunrock, LLC - RDU Distribution Center	Wake	2009	544.28
Shorewood Packaging Corporation	Henderson	2007	536.17
SCM Metal Products, Inc.	Durham	2008	535.59
FCC (North Carolina), Inc.	Scotland	2005	534.18
Barnhill Contracting Company - New Bern Plant	Craven	2009	533.40

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Wright Table Company	Burke	2006	531.90
All American Homes of North Carolina, LLC - Rutherfordton	Rutherford	2008	525.72
Snider Tire, Inc.	Iredell	2007	525.40
NC DOA Central Heating Plant	Wake	2009	524.45
Harrison Construction Division of APAC-Atlantic Inc.	Haywood	2009	523.59
Midstate Contractors, Inc.	Catawba	2008	523.38
East Carolina University	Pitt	2005	522.86
Brooks Boatworks Inc	Beaufort	2009	522.00
Valley Proteins, Inc. dba Carolina By-Products - Gastonia	Gaston	2009	519.08
Hercules Steel Co Inc	Cumberland	2007	519.00
Morton Custom Plastics, Inc., A Wilbert Company	Cabarrus	2008	518.40
Carpenter Company Conover	Catawba	2009	517.97
Custom Products, Inc.	Iredell	2009	516.10
Veterans Affairs Medical Hospital	Durham	2007	513.38
Shaw Industries Group, Inc. - Plant LP	Davidson	2009	512.69
Valley Protein Inc - Wadesboro Div	Anson	2009	511.61
W A Page & Sons Inc	Carteret	2006	510.21
Durham Regional Hospital	Durham	2006	500.12
Creative Metal and Wood, Inc.	Davidson	2006	497.57
Preformed Line Products Company	Stanley	2006	495.43
Consolidated Metco, Inc.	Union	2008	487.67
Autumn House, Inc.	Caldwell	2005	486.47
Malmo Asphalt Plant	Brunswick	2007	476.58
Henry Wurst Inc	Wake	2009	476.00
Pactiv Corporation	Guilford	2009	475.53
Hancock & Moore, Plant No. 3	Alexander	2006	474.54
Goria Enterprises, Inc.	Guilford	2006	472.41
Biscoe Papers LLC	Montgomery	2007	468.50
VT LeeBoy, Inc.	Lincoln	2009	467.71
Bay Valley Foods, LLC	Duplin	2009	456.90
Kao Specialties Americas, LLC	Guilford	2009	454.42
Tradewinds International, Inc.	Catawba	2007	453.34
Minute-Man Anchors, Inc.	Henderson	2007	453.00
Mark David, a Division of Baker, Knapp and Tubbs, Inc.	Guilford	2009	449.00
Frye Regional Medical Center	Catawba	2008	447.41

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Southern Veneer Company, Inc.	Davidson	2006	445.56
Riley Paving, Inc. - Carthage Plant	Moore	2006	445.10
Hickory Printing Solutions, LLC	Catawba	2009	438.08
Static Control Components, Inc. - Plant 17	Lee	2009	436.33
COMM-KAB, INC.	Randolph	2007	436.00
Cape Fear Valley Med Center	Cumberland	2008	435.75
S.T. Wooten Corporation- Drug Store Asphalt Plant #207	Johnston	2008	431.55
Adams Construction Company	Ashe	2006	430.91
Stephenson Millwork Co., Inc.	Wilson	2008	429.29
Blythe Construction, Inc., Plant No. 2	Cabarrus	2009	428.91
McCombs Steel Company	Iredell	2009	423.10
High Point Furniture Industries, Inc.	Guilford	2008	422.39
Esco Industries, Incorporated	Randolph	2008	421.75
Dupont Teijin Films	Cumberland	2009	420.37
NC DOC - Enterprise Sign Plant	Franklin	2008	420.16
WakeMed	Wake	2009	418.65
Woodline, Inc.	Randolph	2009	418.39
S T Wooten Corporation - Youngsville Asphalt plant # 206	Franklin	2007	412.04
Hickory Printing Group, Inc.	Guilford	2007	409.96
W - L Construction & Paving, Inc.	Rockingham	2008	409.22
Barnhill Contracting - Lillington Plant	Harnett	2005	408.78
Saft America, Inc.	Burke	2009	407.15
Engineered Polymer Solutions, D/B/A Valspar	Iredell	2006	402.60
Smith Novelty Company, Inc.	Stanley	2005	395.87
Evergreen Packaging - Raleigh Plant	Wake	2009	395.13
FirstHealth Moore Regional Hospital	Moore	2008	394.99
Chesapeake Pharmaceutical Packaging Co LLC	Davidson	2008	393.92
CMC - Northeast, Inc.	Cabarrus	2003	393.72
The Iams Company d/b/a Procter & Gamble Pet Care	Vance	2009	392.06
Befco Inc	Nash	2006	388.00
Huntington House, Inc.	Alexander	2007	386.98
American & Efird Plants #5 & #15	Gaston	2009	384.66
Kincaid Furniture Company, Inc.; La-Z-Boy Casegoods	Caldwell	2009	383.81
Newton Sanitary Landfill	Catawba	2009	380.82
Chemtura Corporation	Gaston	2008	380.80

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Boling of Mt. Olive, LLC	Wayne	2009	378.95
Tyson Foods, Inc., Monroe Processing Plant and Feed Mill	Union	2005	376.06
J. T. Russell & Sons, Inc.	Stanley	2005	373.63
Custom Finishers, Inc.	Guilford	2007	372.07
G E Aviation - Durham Engine Facility	Durham	2009	369.25
IAC Old Fort, LLC	Macon	2005	367.04
Caromont Health, Gaston Memorial Hospital	Gaston	2008	366.30
NCEMC - Hamlet Plant	Richmond	2009	363.37
Piedmont Chemical Industries I, LLC	Guilford	2006	361.87
Western Carolina University	Jackson	2009	360.52
Purolator Facet, Inc.	Guilford	2007	360.48
Butterball, LLC.	Duplin	2009	359.30
Carrick Turning Works, Incorporated	Randolph	2006	359.14
Merck Sharp and Dohme Corporation	Wilson	2005	354.08
Carolina Curves, Inc.	Catawba	2005	351.50
Barnhill Contracting Company - Shallotte	Brunswick	2007	351.38
Hanes Construction Company	Davidson	2008	346.82
North Carolina Central University	Durham	2005	344.34
Rose Brothers Paving Co Inc - Gaston Asphalt Plant	Northampton	2007	342.68
EFA, Inc. (f/k/a New EFA, Inc.)	Guilford	2005	341.31
Maymead Materials, Inc. - Hickory Plant	Catawba	2006	340.89
Electrolux Home Products, Dishwasher Division	Lenoir	2007	340.24
Godwin Manufacturing Co., Champion Hoist and Equipment Co.	Harnett	2008	339.00
Viscotec Automotive Products, LLC	Burke	2005	337.76
Hickory Springs Manufacturing Company	Catawba	2008	337.17
GSK, Inc.	Wake	2007	331.61
Hudson Bros. Trailer Mfg., Inc.	Union	2007	330.98
Mohawk Industries, Inc. - Laurel Hill Plant	Scotland	2007	324.96
S.T. Wooten - Pea Ridge Asphalt Plant	Chatham	2008	324.32
CP&L - Blewett Hydroelectric Plant	Anson	2006	322.79
NuStar Asphalt Refining, LLC	New Hanover	2009	320.97
Peanut Processors Inc - Plt 2	Bladen	2008	318.76
Leathercraft, Inc.	Catawba	2005	318.34
Ultimate Textile, Inc.	Rutherford	2008	317.55
Spectrum Dyed Yarns, Inc., Kings Mountain Plant	Cleveland	2008	315.90

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Carolina Container Company	Catawba	2006	315.50
APAC-Atlantic, Inc. - Transylvania County	Transylvania	2007	314.18
CMH Manufacturing Inc. d/b/a Schult Homes - Plant 958	Stanley	2008	313.52
Keihin Carolina Systems Technology, LLC	Edgecombe	2007	313.06
Valley Proteins, Inc. - Carolina By-Products	Duplin	2009	312.97
Rose Brothers Paving Company - Murfreesboro	Hertford	2008	312.35
Colwell Construction Company, Inc. - Asphalt Plant	Clay	2007	304.94
NC State Ports Authority - Morehead City	Carteret	2007	304.35
Avgol America, Inc.	Davie	2008	300.00
Piedmont Truck Tires, Inc. - Graham Plant	Alamance	2007	299.62
Valdese Weavers, LLC - Plant No. 1	Burke	2006	298.70
Global Nuclear Fuel - Americas, LLC	New Hanover	2008	296.96
AW North Carolina, Inc.	Durham	2007	296.04
RF Micro Devices, Inc. - Fab. 2	Guilford	2007	294.84
NC School for the Deaf	Burke	2005	293.97
Craftique LLC	Alamance	2006	292.31
IBM Corporation	Durham	2004	291.10
D & S Asphalt Materials, Inc.	Polk	2007	287.58
Hudson Paving Inc	Richmond	2009	286.37
Dicey Fabrics, Inc.	Cleveland	2009	284.08
Rea Contracting (Butner)	Granville	2009	280.47
Pharr Yarns Complex 46	Gaston	2005	274.30
Caterpillar	Johnston	2005	273.38
Cherry Hospital	Wayne	2007	273.24
Alamance Regional Medical Center, Inc.	Alamance	2006	271.94
High Point Furniture Industries, Inc.	Randolph	2005	270.57
Carl Rose & Sons, Inc. - N. Wilkesboro Plant	Wilkes	2009	270.46
Vanguard Pai Lung	Union	2005	270.26
Unifi Manufacturing, Inc. Dyeing Business Unit - Plant 2	Rockingham	2008	266.83
Brenntag Southeast, Inc.	Guilford	2005	264.93
Barnhill Contracting Company - Kenansville	Duplin	2006	264.43
Georgia - Pacific Corrugated, LLC - Asheboro Plant	Randolph	2006	263.60
Terra-Mulch Products, LLC	Catawba	2006	262.09
Yale Security Inc., Norton Door Controls	Union	2005	260.97
ECU School of Medicine	Pitt	2009	260.05

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
International Automotive Components Group of North America	Montgomery	2005	258.00
CertainTeed Corporation - Roaring River Facility	Wilkes	2007	257.81
DuBose Strapping, Inc.	Sampson	2009	256.91
Pope Field	Cumberland	2008	255.75
Eisai Inc	Durham	2009	255.62
Garland Woodcraft Co Inc	Durham	2005	252.16
MP Durham, LLC	Durham	2009	249.05
Kewaunee Scientific Equipment Corporation	Iredell	2006	248.71
Duke Energy Corporation LCTS	Lincoln	2009	247.98
Builders FirstSource-Atlantic Group, Inc.	Cabarrus	2009	244.70
Carsons, Inc.	Guilford	2008	239.15
Premiere Finishing & Coating, LLC	Rockingham	2006	238.00
Mount Vernon Chemicals, LLC / Apollo Chemical - Burlington	Alamance	2005	237.64
Leviton - Southern Devices Div	Burke	2007	237.01
Rogers Group, Inc. - Hendersonville Plant	Henderson	2004	236.62
Wade Manufacturing Co - Wadesboro	Anson	2009	233.34
Veterans Affairs Medical Center - Fayetteville	Cumberland	2005	229.86
Hearthstone Enterprises Inc dba Charleston Forge - Boone Plt	Watauga	2007	226.82
APAC-Atlantic, Inc. - Rutherfordton Plant	Rutherford	2009	226.76
Coastal Lumber Company - Goldsboro	Wayne	2005	226.64
AMT/BCU, Inc. dba American Modular Technologies	Randolph	2008	222.00
Johnston Casuals Furniture, Inc.	Wilkes	2005	219.60
Smurfit-Stone Container Corporation	Cleveland	2005	217.16
The Moses H. Cone Memorial Hospital	Guilford	2007	217.01
Union Grove Moulding & Millwork, Inc.	Iredell	2006	214.71
Roy and JoAnn Pritchard, d/b/a Cut Right Frame Company	Burke	2005	213.00
Blythe Construction-Holly Springs Plant	Wake	2008	213.00
Jess Crate, Inc.	Montgomery	2006	212.00
Rex Healthcare	Wake	2008	208.71
Murphy-Brown LLC Warsaw Feed Mill	Duplin	2008	207.04
Johnson Brothers Utility and Paving Co.	Harnett	2009	206.62
American Distillation, Inc.	Brunswick	2009	205.91
Honeywell International, Inc.	Nash	2005	205.68
Stanly Regional Medical Center	Stanley	2008	203.85

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
The Equity Group, Inc. - NC Division	Rockingham	2007	201.54
Kayser-Roth Corporation - Asheboro Facility	Randolph	2009	200.81
Magneti Marelli Powertrain USA Inc.	Lee	2007	200.60
WakeMed Cary Hospital	Wake	2005	200.32
Public Works Commission Butler-Warner Generation Plant	Cumberland	2009	197.12
Rhodes Brothers Paving, Inc.	Madison	2009	196.66
Broughton Hospital	Burke	2009	194.43
C K Earnhardt & Son, Inc.	Stanley	2008	190.30
Maymead Materials, Inc. - Hildebran Plant	Burke	2009	190.06
Perdue Farms Inc - Rockingham	Richmond	2009	188.67
Matlab, Inc. - Ramseur Plant	Randolph	2008	187.07
High Point Regional Health System	Guilford	2009	186.03
ArvinMeritor, Inc.	Henderson	2007	184.51
Maymead Materials, Inc. - Morganton Plant	Burke	2006	182.66
Trion	Lee	2006	182.10
Case Farms Processing, Inc. - Rand St.	Burke	2009	178.63
Packaging Corporation Of America	Rowan	2007	178.60
Carolina Paving of Hickory, Inc.	Catawba	2009	175.94
Murphy-Brown, LLC- Bladenboro Feed Mill	Bladen	2008	175.57
American Fiber & Finishing, Inc.	Stanley	2005	174.39
Prestige Fabricators, Inc. - Foam Plant	Randolph	2005	170.65
Whiteville Plywood Company Inc	Columbus	2005	170.01
Structural Steel of Carolina - Hickory Steel	Catawba	2008	168.30
Star Furniture Company	Catawba	2004	168.11
Acme Electric Corporation	Robeson	2007	167.13
Biogen Idec US Limited Partnership	Wake	2008	166.97
The Feldspar Corporation	Mitchell	2008	166.64
Pergo, Inc.	Wake	2009	165.74
Wieland Copper Products, LLC	Stokes	2009	165.51
Wayne Memorial Hospital	Wayne	2009	162.54
Caswell Center	Lenoir	2005	162.35
Giles Chemical, a division of Premier Magnesia, LLC	Haywood	2009	161.91
International Pipes and Accessories LLC	Alleghany	2007	161.02
Rhodes Brothers Paving, Inc. - Transylvania	Transylvania	2007	158.47
Novo Nordisk Pharmaceutical	Johnston	2005	158.43

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Kennametal Incorporated	Vance	2009	158.20
Rose Hill Animal Disease Diagnostic Laboratory	Duplin	2006	157.96
SMT, Inc.	Wake	2006	157.06
Acme McCrary Corp. Pritchard Street Plant	Randolph	2006	155.61
E J Victor Upholstery Division	Burke	2008	155.39
Carl Rose and Sons, Inc. - Wilkesboro Plant	Wilkes	2007	155.19
Prestage Farms - Moltonville	Sampson	2007	154.62
Hancock & Moore Plant 2	Alexander	2009	154.28
APAC-Atlantic, Inc. - Plant #15	Guilford	2007	152.95
Rosenquist, Inc.	Wilkes	2006	152.00
South Durham Water Reclamation Facility	Durham	2005	150.85
Buckeye Lumberton Inc	Robeson	2008	150.21
Alltech, Inc.	Rockingham	2006	148.43
Valassis Communications	Durham	2006	148.00
Tyson Farms, Inc. - Roaring River Feed Mill	Wilkes	2008	147.53
Wayne Farms, LLC	Surry	2007	144.32
Precision Fabrics Group, Inc.	Guilford	2005	140.83
Meridian Specialty Yarn Group, Inc. - Valdese Plant	Burke	2008	140.80
Ellis Lumber Company, Inc.	Cleveland	2007	139.56
Qualicaps, Inc.	Guilford	2006	138.52
Banknote Corporation of America, Inc.	Guilford	2008	135.86
Ritch Face Veneer Company & Faces South, Inc.	Guilford	2009	135.82
Kinder Morgan Southeast Terminals LLC	Johnston	2006	134.37
Pisgah Yarn & Dyeing	Macon	2008	133.85
Barnhill Contracting Company - Harbinger	Currituck	2005	133.65
Davis Wood Products, Inc.	Caldwell	2009	132.00
Holston Environmental Services, Inc.	Haywood	2009	131.80
Sealed Air Corporation	Caldwell	2008	131.26
Coty US LLC	Lee	2009	130.04
Midstate Contractors, Inc.	Caldwell	2005	129.47
Carolina Foam, LLC - Maiden	Catawba	2009	129.21
Greif Packaging, LLC - Southeastern Packaging	Cabarrus	2007	129.01
Bluegrass Labels Company, LLC - Graphic Packaging	Guilford	2007	128.86
BestSweet, Inc.	Iredell	2010	128.53
Candle Corporation of America	Surry	2006	126.93

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Carris Reels of North Carolina, Inc.	Iredell	2008	126.40
House of Raeford Further Processing/Distribution Inc.	Hoke	2004	126.16
Banner Pharmacaps, Inc. a subsidiary of Sobel USA	Guilford	2009	125.03
Carolina Pelleting and Extrusion, Inc.	Catawba	2005	124.97
NC DOC - Central Prison	Wake	2005	122.00
Associated Asphalt Greensboro, LLC	Guilford	2006	121.17
Cascade Die Casting Group, Inc. - Atlantic Division	Guilford	2008	121.13
Momentive Specialty Chemicals, Inc. - Morganton	Burke	2005	119.09
Parker TechSeal Division	Wilson	2008	119.00
Aallied Die Casting Company of NC	Rutherford	2006	118.21
K-T Feldspar Corporation	Mitchell	2007	118.15
Murphy-Brown, LLC. - Laurinburg Feed Mill	Scotland	2007	118.08
The Black Brothers Co - Southeast Division	Guilford	2005	118.07
Flowers Baking Company of Jamestown, LLC	Guilford	2009	118.01
Olympic Products, LLC	Guilford	2008	117.78
Elkay Southern Corp	Robeson	2007	116.00
Chesapeake Pharmaceutical Packaging Company, LLC	Wake	2009	115.00
HMC Paving & Construction Company, Inc.	Swain	2007	112.96
Bartimaeus by Design, Inc.	Davidson	2008	112.88
RP Fletcher Machine Company, Inc.	Davidson	2005	112.00
Industrial & Agricultural Chemicals, Inc.	Robeson	2007	111.33
HM Frame Company, Inc. dba HM Woodworking, Inc.	Catawba	2008	111.00
Gentry Mills, Inc.	Stanley	2009	109.88
Clement-Pappas NC, Inc.	Henderson	2006	109.40
Nash Johnson & Sons Farms - Feed Mill	Duplin	2006	108.59
Meshboro, Inc.	Randolph	2006	108.40
Umicore USA, Inc.-Umicore Autocatalyst Recycling	Scotland	2008	107.74
Coastal Protein, Inc	Sampson	2008	106.93
Meredith College	Wake	2006	106.37
Spartan Dyers, Inc., Sterling Division	Gaston	2006	104.09
General Microcircuits, Inc.	Iredell	2005	103.50
Valdese Weavers, Inc. Crescent Street Plant	Burke	2009	103.12
Mountaire Farms Inc - Candor Feed Mill	Montgomery	2008	102.65
Carolina Container Company	Guilford	2008	100.17
The Timken Company - Asheboro Bearing Plant	Randolph	2009	100.00

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Cansorb Industries, Inc.	Rowan	2005	99.80
Hallman Foundry	Lee	2007	99.60
Innospec Performance Chemicals U.S. Company	Rowan	2006	99.00
Fletcher Industries	Moore	2009	96.60
White's Tire Service Incorporated	Wilson	2007	96.24
IMC-MetalsAmerica, LLC	Cleveland	2009	95.18
City of Raleigh Wilders Grove Landfill	Wake	2009	95.12
Acme McCrary Corp. North Street Finishing Plant	Randolph	2006	93.19
ATI Allvac - Monroe Plant	Union	2004	92.00
Syngenta Crop Protection, LLC	Guilford	2009	91.96
Peanut Processors Inc - Plt 1	Bladen	2008	89.38
Crown-Kinston	Lenoir	2008	87.70
Thomasville - Dexel Incorporated	Guilford	2005	87.66
Harrison Construction Division of APAC-Atlantic Inc.	Clay	2005	87.30
Framewright, Inc.	Catawba	2009	86.40
Unifi Manufacturing, Inc. - Plant T5	Yadkin	2009	86.00
Parrish Tire Company	Yadkin	2008	83.68
NC DOC - Caledonia Correctional Institute	Halifax	2008	81.99
Harborlite Corporation	Franklin	2003	81.39
The Hamner Institutes for Health Sciences	Durham	2009	80.99
Shurtape Technologies Inc. - Stony Point Plant	Alexander	2009	78.95
Americhem, Inc.	Cabarrus	2008	77.84
Centurion Medical Products Corporation	Rowan	2009	77.80
Fay Block Company	Cumberland	2009	77.50
Packaging Corporation Of America - Goldsboro	Wayne	2007	76.59
Lake Norman Regional Medical Center	Iredell	2007	75.42
Pregis Innovative Packaging, Inc.	Caldwell	2009	74.31
Kings Mountain Minerals, Inc. - Moss Plant	Cleveland	2008	74.17
Murdoch Center	Granville	2005	73.46
Nestaway	Sampson	2008	73.34
Sampson County Regional Medical Center	Sampson	2007	72.65
Packaging Corporation Of America	Burke	2006	72.14
Johnson Paving Company, Inc.	Macon	2009	71.12
National Pipe & Plastics, Inc.	Guilford	2009	71.00
Pleasant Hill Compressor Station	Northampton	2009	70.38

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
CurveMakers, Inc.	Granville	2006	70.25
Riley Paving, Inc.	Alamance	2009	68.80
International Paper Company - Newton Container Plant	Catawba	2005	66.57
Flexible Foam Products, Inc. - High Point Facility	Randolph	2009	65.44
Chemol Company, Inc.	Guilford	2005	65.34
FirstHealth Richmond Memorial Hospital	Richmond	2006	64.98
Prestage Farms, Inc. - Hwy. 421 Plant	Sampson	2006	64.90
S.T. Wooten Corporation - Henderson Asphalt Plant #203	Vance	2005	64.80
New Buck Corporation	Mitchell	2007	63.75
Pinnacle Corrugated LLC	Rowan	2008	63.54
Harrison Construction Division of APAC-Atlantic Inc.	Madison	2008	63.06
Cycle Group, Inc.	Davie	2008	61.51
Colonial Pipeline Company	Johnston	2005	61.30
Charles Stewart Wood Products	Catawba	2006	61.00
Perdue Farms Inc - Eagle Springs	Moore	2009	60.27
Carpenter Company, Taylorsville Plant	Alexander	2008	59.66
Plastics Color Corporation of North Carolina	Randolph	2006	59.63
Spindale Mills, LLC	Rutherford	2006	58.98
Mannington Mills, Inc. - Mannington Wood Floors Company	Guilford	2008	58.94
CP&L - Morehead City Plant	Carteret	2005	58.87
ARE-NC Region No. 5, LLC	Durham	2008	58.23
Glenoit Fabrics (TT) Corporation	Edgecombe	2006	57.37
Avery Dennison Corporation	Guilford	2008	57.30
S&B Industrial Minerals North America, Inc.	Burke	2007	55.70
Rowland Woodworking, Inc.	Guilford	2005	54.91
Williams Water Treatment Plant	Durham	2007	54.87
Newton Instrument Company Inc	Granville	2005	54.20
Stabilus, Inc.	Gaston	2007	53.42
Carolina Drawers Inc	Davidson	2007	53.40
Sharpe Bros., a Div. of Vecellio & Grogan, Inc. - Burnt Popl	Guilford	2008	53.15
Carteret General Hospital	Carteret	2009	52.60
Modern Polymers, Inc.	Gaston	2005	52.13
GKN Driveline Sanford Precision Forming	Lee	2008	51.56
Cumberland Gravel & Sand Company - McDowell County	Macon	2009	50.88
Highland Containers, Inc.	Guilford	2009	50.67

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Lees-McRae College	Avery	2008	50.53
Piedmont Natural Gas -- Junction B Compressor Station	Greene	2005	50.38
Arvin Meritor	Scotland	2007	50.00
NC DOC - McCain Hospital	Hoke	2009	49.20
Carolina Precision Fibers, Inc.	Wilkes	2008	48.96
Keystone Powdered Metal Company	Gaston	2008	47.92
Perdue Farms - Nashville Feedmill	Nash	2005	46.62
Yancey Stone, Inc. - Low Gap Quarry	Yancey	2007	46.30
Fiber Composites, LLC	Stanley	2008	42.98
Kennametal Incorporated	Halifax	2008	42.02
Stone Supply, Inc.	Yancey	2004	41.81
Enterprise Rendering Company	Stanley	2005	41.00
Henderson County Hospital Corporation, Margaret R. Pardee Ho	Henderson	2007	40.99
Mr. Rodney McCurry, d.b.a. McCurry Grading & Paving	Rutherford	2007	40.97
McMurray Fabrics, Inc.	Lincoln	2006	40.75
Riley Paving, Inc. - Liberty Plant	Randolph	2009	40.63
Kings Mountain Minerals, Inc. - Battleground	Cleveland	2008	40.10
Townsend Farms, Inc., Bonlee Plant #1 (9215)	Chatham	2008	39.42
Perdue Farms Incorporated, Concord	Cabarrus	2008	39.13
ECMD, Inc. - East Coast Mouldings/A & H Windows Plant	Wilkes	2007	38.80
D & S Frames, Inc.	Catawba	2007	37.86
Kyocera Industrial Ceramics Corporation	Henderson	2008	37.31
L'GAEL Manufacturing, LLC	Montgomery	2009	37.08
House of Raeford Farms, Inc. - Wallace Division	Duplin	2006	36.84
Councill Company, LLC - Plant #2	Davidson	2005	36.75
Flint Trading, Inc.	Davidson	2007	36.63
Perdue Grain and Oilseed, LLC - Greenville	Pitt	2007	35.31
Townsend Farms Inc., Plant 9217	Chatham	2008	35.19
Murphy - Brown LLC - Chief Feed Mill	Duplin	2008	34.98
Special Metals Welding Products Company	Catawba	2007	33.76
National Spinning Company - Washington	Beaufort	2006	33.72
Sandhills Regional Medical Center	Richmond	2008	33.47
BlueScope Buildings North America, Inc.	Scotland	2009	31.08
Pergo, Inc.	Wake	2009	30.31
Vopak Terminal South Wilmington	New Hanover	2006	29.60

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
GE Lighting LLC	Wayne	2006	29.53
Land O'Lakes Purina Feed, LLC - Statesville Mill	Iredell	2008	29.44
Piedmont Natural Gas- Bladenboro Compressor Station	Bladen	2008	28.75
Valdese Textiles Inc	Burke	2006	28.61
J. T. Russell & Sons, Inc. - Albemarle	Stanley	2007	28.54
Moog, Inc.	Cherokee	2008	28.44
Carolina Forge Company	Wilson	2007	28.40
Alberdingk Boley, Inc.	Guilford	2005	27.12
McCrary Stone Service, Inc. - Crushing & Screening Plant	McDowell	2009	27.11
McKenzie Sports Products, Inc.	Rowan	2005	26.80
Brass-Craft Manufacturing Company, BrassCraft - Thomasville	Davidson	2007	26.77
Pilgrim's Pride Corporation, Bonlee Feed Mill	Chatham	2005	26.68
Wilson Medical Center	Wilson	2007	26.27
Metal Recycling Services, LLC	Union	2008	26.20
Select Frames, Inc.	Alexander	2005	25.67
Wade Manufacturing Co - Rockingham	Richmond	2007	25.50
Rankin Brothers Company	Cumberland	2006	25.36
The North Carolina Granite Corporation	Surry	2007	25.00
Belt Concepts of America Inc a subsidiary of Veyance Tec. In	Nash	2005	24.06
Ralphs Frame Works Inc	Randolph	2005	24.04
Johnson Concrete Company, Piedmont Block Division	Cabarrus	2006	24.01
Southern States Cooperative, Inc. - Barber Feed Mill	Rowan	2009	23.89
Glen Raven, Inc.	Yancey	2007	22.88
McKean Maffitt WWTP (aka Southside)	New Hanover	2006	22.40
City of Burlington - East Burlington WWTP	Alamance	2007	22.07
NCFI Polyurethanes, Division of Barnhardt Manufacturing Co.	Surry	2006	21.90
Cargill Nutrena Feed Div	Wilson	2004	21.80
Rightmyer Machine Rentals Inc	Northampton	2007	21.59
Andersen Products, Inc.	Alamance	2008	21.38
Swaim, Inc. - Wagner Division	Randolph	2008	21.37
Catawba Sox, LLC	Catawba	2005	20.63
Pharr Yarns I-85 Complex	Gaston	2009	20.52
Kings Mountain Minerals, Inc. - Patterson	Cleveland	2008	20.00
Orograin - Gastonia	Gaston	2008	19.69

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Future Foam, Inc.	Guilford	2008	19.26
Cincinnati Thermal Spray, Inc.	Pender	2005	18.84
Southern Products & Silica Company Inc	Richmond	2005	18.33
Carpenter Co.	Guilford	2006	18.27
Armacell Engineered Foams	Catawba	2004	18.25
Watauga Medical Center	Watauga	2005	17.95
R. T. Vanderbilt Company, Inc., Standard Mineral Division	Moore	2006	17.33
Pilgrim's Pride Corporation of Virginia, Inc.	Union	2009	17.27
Progress Energy Carolinas - Brunswick Plant	Brunswick	2007	16.80
Parker Hosiery Co Inc	Macon	2008	16.75
Concord City Generating Plant #1	Cabarrus	2007	16.00
Harrison Construction Division of APAC-Atlantic Inc.	Cherokee	2009	15.36
Midstate Mills, Inc.	Catawba	2006	15.26
NYP Corp. - Division of Ampack, LLC	Robeson	2007	15.02
Cooper Tools, LLC - Monroe Operation	Union	2005	14.86
Gilbarco, Inc.	Guilford	2006	14.69
Resco Products Inc. - Piedmont Minerals	Orange	2006	14.51
Royal Carolina Corporation	Guilford	2005	14.24
United Chemi-Con, Inc.	Ashe	2009	14.12
City of Burlington - South Burlington WWTP	Alamance	2008	14.10
Capel, Inc.	Montgomery	2006	13.93
Ritz-Craft Corporation	Richmond	2008	13.80
Rinker Materials Concrete Pipe Division	Cabarrus	2008	13.76
Wireway/Husky Systems	Lincoln	2009	13.74
National Spinning Company - Whiteville	Columbus	2009	13.49
Tommy Ray Shew dba Caldwell Woodcarving and Turning Company	Caldwell	2009	13.06
Bay State Milling Company	Iredell	2009	12.77
Town of Forest City - Lawing Road	Rutherford	2007	12.64
Associated Asphalt Salisbury, Inc.	Rowan	2006	12.62
Saiden Technologies	Lee	2009	12.58
Southeastern Concrete Products of N.C. LLC	Iredell	2005	12.51
C & H Frameworks, Inc	Rowan	2007	12.31
J. Charles Saunders Company	Gaston	2007	12.30
Leonard Block Company	Davidson	2005	12.00
Concord City Generating Plant #2	Cabarrus	2007	11.67

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
U.S. Textile Corporation	Avery	2007	11.62
Schneider Mills, Inc.	Alexander	2009	11.36
House of Raeford Farms, Inc. - Rose Hill	Duplin	2006	11.32
Cone Denim LLC - Jacquard Weave Plant	Rutherford	2009	11.17
City of Wilson - Bridgestone/Firestone Genset	Wilson	2006	10.98
Ready Mixed Concrete Company - Plant 102 - Indian Trail	Union	2006	10.69
Carving Craft, Inc.	Catawba	2009	10.01
Becton Dickinson Technologies	Durham	2006	10.00
Rinker Materials Hydro Conduit - Wilson	Wilson	2008	9.94
Southern Lithoplate Inc.	Franklin	2009	9.94
NC DOC - Southern Correctional Institute	Montgomery	2008	9.94
Campbell University	Harnett	2005	9.91
United Metal Finishing, Inc. of Greensboro	Guilford	2007	9.45
Town of Forest City - Beaver Street	Rutherford	2007	9.38
James A Loughlin WWTP (aka Northside)	New Hanover	2009	9.34
Unimin Corporation Green Mountain - Plant 1	Yancey	2009	9.02
CEMEX Construction Materials Atlantic, LLC - Colfax	Guilford	2007	8.73
Pallet Resource of NC, Inc.	Davidson	2008	8.61
Erico, Inc.	Moore	2006	8.20
Attends Health Care Products, Inc.	Pitt	2006	7.99
Childers Concrete Company	Guilford	2009	7.94
Havelock Waste Water Treatment Plant	Craven	2005	7.78
Tomlinson/Erwin-Lambeth, Inc.	Davidson	2008	7.34
Johnson Concrete Company, Inc., Central Division	Rowan	2007	6.98
Star Milling Company	Iredell	2005	6.84
Baxter Healthcare Corp	Macon	2008	6.71
Onslow Memorial Hospital	Onslow	2009	6.66
Windward Print Star, Inc. d/b/a AdPlex	Guilford	2008	6.08
Unifour Finishers, Inc., Division II	Catawba	2007	6.06
CEMEX Construction Materials, Atlantic, LLC	Wilkes	2007	5.45
Luxfer Inc. - Luxfer Gas Cylinders Division	Alamance	2009	5.37
CPI Packaging, Inc.	Lincoln	2009	5.28
Federal Bureau Of Prisons - Fed Corr Com	Granville	2006	5.27
Sealed Air Corp - Cryovac Div	Richmond	2006	5.24
Perdue Grain & Oil Seed LLC - Lumberton	Robeson	2004	5.21

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Davidson Water, Inc.	Davidson	2005	5.18
Pratt Industries (USA) - Raleigh	Wake	2008	5.00
Bonsal American	Anson	2005	4.89
Metrics Inc.	Pitt	2008	4.86
Greenville Ready Mix Concrete Inc. - Winterville	Pitt	2006	4.71
Perfect Air Control, Inc.	Macon	2008	4.69
NCEMC - Buxton	Dare	2009	4.66
Kitty Hawk Combustion Turbine Station	Dare	2009	4.61
NC DOC Western Youth Institution	Burke	2005	4.58
Hydro Conduit Corporation DBA Rinker Materials	Davidson	2009	4.48
Shamrock Corporation Tipping Division	Guilford	2009	4.40
Carolina Sunrock	Vance	2009	4.29
Kingsdown, Incorporated	Alamance	2009	4.10
Public Service Company of NC - Roxboro Compressor Station	Person	2008	4.03
Carpenter Design, Inc.	Rutherford	2006	3.87
Kay Chemical Company	Guilford	2005	3.85
Prestige Fabricators, Inc. - Plant 2	Randolph	2007	3.74
Long Creek WWTP	Gaston	2005	3.55
Kinder Morgan, Wilmington	New Hanover	2007	3.54
General Foam Plastics, Inc.	Edgecombe	2006	3.20
NC Municipal Power Agency No. 1, Albemarle Prime Power Park	Stanley	2008	3.15
Mills River Regional Water Treatment Fac	Henderson	2009	3.15
Concrete Supply Company, Concord Plant	Cabarrus	2008	3.05
Cumberland Gravel & Sand Company - Henderson County	Henderson	2009	2.93
Carolina Wood Products of Marshville, Inc.	Union	2009	2.87
Central Carolina Concrete, LLC	Guilford	2005	2.74
Blackburn Sanitary Landfill	Catawba	2009	2.73
Unimin Corp - Schoolhouse Quartz Plant	Avery	2008	2.61
Luck Stone Corporation - Pittsboro Plant	Chatham	2009	2.59
Southport Concrete Corporation	Brunswick	2006	2.59
United Carving Inc	Burke	2005	2.59
Snyder Paper Corporation - Snyder Cushion of High Point	Guilford	2006	2.58
Bartlett Milling Company, LP, Statesville Flour Mill	Iredell	2006	2.51
Lincolnton Wastewater Treatment Plant	Lincoln	2006	2.40

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
V & E Components, Incorporated	Guilford	2005	2.30
Southern Concrete Materials, Inc. - Hendersonville	Henderson	2008	2.27
Greystone Concrete Products Inc	Vance	2009	2.25
Kings Mountain International, Inc.	Cleveland	2007	2.14
NC Municipal Power Agency No. 1 - Morganton	Burke	2005	2.10
NC Municipal Power Agency No. 1 Lexington, Plant No. 1	Davidson	2005	2.10
NC Municipal Power Agency No. 1 - High Point Plant 2	Guilford	2005	2.10
NC Municipal Power Agency No. 1-Shelby Plant	Cleveland	2005	2.10
NC Municipal Power Agency No. 1- Lexington Plant No. 2	Davidson	2005	2.09
Elizabeth City Wastewater Treatment Plant	Pasquotank	2009	2.08
NC Municipal Power Agency No. 1-Statesville	Iredell	2005	2.03
NC Municipal Power Agency No. 1 - Gastonia Freightliner	Gaston	2008	2.00
The Roberts Company	Pitt	2004	2.00
Wilmington Materials	New Hanover	2009	1.99
Concrete Supply Company, Portable Plant	Cleveland	2009	1.98
NC Municipal Power Agency No. 1-Gastonia Plant 1	Gaston	2005	1.97
NC Municipal Power Agency No. 1-Maiden	Catawba	2005	1.95
Coddle Creek WTP	Cabarrus	2006	1.94
Vulcan Construction Materials LP - Gold Hill	Cabarrus	2008	1.91
NC Municipal Power Agency No. 1-Gastonia Plant 2	Gaston	2005	1.90
Southeastern Grain Co, LLC. - Clinton Division	Sampson	2007	1.89
Hamby Brothers Concrete, Inc.	Caldwell	2007	1.85
NC State Ports Authority - Wilmington	New Hanover	2008	1.77
Southeastern Industrial Plating, Inc.	Iredell	2007	1.72
Concrete Service Co Plant No 2 - Reilly	Cumberland	2009	1.72
Heritage Concrete	Lee	2005	1.71
Daniels Woodcarving Company, Inc.	Alexander	2007	1.71
DPD Concrete Chocowinity	Beaufort	2006	1.63
Murphy-Brown LLC - Rosemary Feed Mill	Duplin	2007	1.56
Tri-City Concrete, LLC	Rutherford	2008	1.56
INVISTA S.a.r.l.	New Hanover	2009	1.47
Explosives Supply Company - Concrete Batch Plant	Mitchell	2005	1.46
Crowders Creek WWTP	Gaston	2005	1.44
Ameri-Con Materials, Inc.	Polk	2009	1.36
New Colony Farms, L.L.C.	Washington	2009	1.35

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
ECMD, Inc., d/b/a Crown Heritage	Caldwell	2005	1.34
CEMEX Construction Materials, Atlantic, LLC	Davidson	2006	1.33
City of Wilson - WWTP Generator	Wilson	2006	1.30
Harrison Constr. APAC-Atlantic, Inc. - Massey Branch Quarry	Graham	2009	1.29
NC Municipal Power Agency No. 1 - Cotton Grove Peaking Stat	Davidson	2008	1.25
Greenleaf Corporation	Henderson	2009	1.23
Roanoke Chowan Hospital	Hertford	2009	1.22
NCEMC - Ocracoke	Hyde	2009	1.22
Concrete Supply Company - Monroe Plant	Union	2009	1.21
G & M Milling Company, Inc.	Iredell	2008	1.20
Southern Concrete Materials, Inc. - Waynesville	Haywood	2005	1.16
Kingsway Ready Mix Inc	Henderson	2005	1.14
Lafarge Building Materials Inc.	Durham	2008	1.12
Southeastern Concrete of Lumberton, Inc.	Robeson	2006	1.11
NC Municipal Power Agency No. 1 - High Point Water Pump Stat	Guilford	2008	1.10
Southern Concrete Materials, Inc. - Naples	Henderson	2007	1.06
Southern Concrete Materials, Inc. - Brevard	Transylvania	2008	1.06
Southern Concrete Materials - Concord Plant	Cabarrus	2006	1.05
Troy Ready Mix, Inc.	Montgomery	2006	1.01
Concrete Supply Company - Salisbury Plant	Rowan	2009	1.01
Impressions Marketing Group, Inc.	Beaufort	2009	1.00
CEMEX Construction Materials, Atlantic, LLC	Stokes	2006	1.00
Concrete Supply Co., Mooresville Plant	Iredell	2008	0.98
Ready Mixed Concrete Company - Castle Hayne	New Hanover	2008	0.93
Thomas Concrete Inc. - Fuquay-Varina	Harnett	2007	0.91
DPD Team Concrete-Belhaven	Beaufort	2006	0.90
Dixie Pipeline Company	Wake	2005	0.90
McGee Brothers Company, Inc.	Cabarrus	2009	0.89
Whiteville Ready Mixed Concrete	Columbus	2005	0.88
Kerr's Hickory Ready-Mixed Concrete Co., Inc.	Caldwell	2008	0.88
Catawba Creek Pump Station	Gaston	2005	0.86
CEMEX Construction Materials Atlantic, LLC - Statesville	Iredell	2005	0.84
JSW Enterprises, Inc.	Halifax	2009	0.83
Chandler Concrete Co Inc Siler City Plant 109	Chatham	2006	0.83

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Town of Old Fort WWTP	Macon	2005	0.82
DPD Team Concrete - Tarboro	Edgecombe	2005	0.79
Toxaway Concrete, Inc.	Jackson	2009	0.79
Ready Mixed Concrete Company, Denver	Lincoln	2006	0.78
Tarheel Plastics, LLC	Davidson	2009	0.78
Ready Mixed Concrete - Clinton Plant 120	Sampson	2005	0.78
Federal Medical Center	Durham	2005	0.77
Trinity Manufacturing, Inc.	Richmond	2006	0.77
Bingham Facility	Orange	2009	0.75
Speer Concrete, Inc.	Moore	2006	0.74
S.T. Wooten Corporation - Fuquay Varina	Wake	2008	0.72
Southern Concrete Materials - Sylva Plant	Jackson	2005	0.71
CEMEX Construction Materials Atlantic,LLC	Moore	2006	0.70
Ready Mixed Concrete Company - Jacksonville	Onslow	2009	0.68
Southern Equip Co - Plant #14	Durham	2005	0.68
Central Carolina Concrete, LLC	Guilford	2008	0.67
CEMEX Construction Materials Atlantic,LLC	Anson	2006	0.67
Quality Concrete Company	Cumberland	2006	0.66
Keystone Farm Service Inc	Person	2006	0.66
Gobble - Callahan, Inc. - DBA Callahan Concrete Co.	Davidson	2009	0.65
NC Municipal Power Agency No. 1 - Monroe Middle School Unit	Union	2009	0.64
Concrete Service Company - Ramsey St. Plant	Cumberland	2009	0.63
CEMEX Construction Materials Atlantic, LLC - Gastonia	Gaston	2006	0.63
NC Municipal Power Agency No. 1 - Cherryville City Hall Unit	Gaston	2009	0.63
Southern Equipment Company - Plant #17	Durham	2009	0.63
NC Municipal Power Agency No. 1 - Albemarle Hospital Unit	Stanley	2009	0.62
Hog Slat, Inc. - Clinton Plant 2	Sampson	2007	0.61
NC Municipal Power Agency No. 1 -Lincolnton High School Unit	Lincoln	2009	0.60
CEMEX Construction Materials Atlantic, LLC - Indian Trail	Union	2008	0.60
Kerrs Hickory Ready-Mixed Concrete Co., Inc., Hickory Plant	Catawba	2008	0.60
Hartley Ready Mix Concrete Manufacturing, Inc.	Guilford	2007	0.59
NC Municipal Power Agency No. 1 - Maiden Community Ctr Unit	Catawba	2009	0.58

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Town of Waynesville - Wastewater Treatment Plant	Haywood	2009	0.58
N C Products Corporation	Cumberland	2009	0.57
Chandler Concrete/Piedmont, Inc.-Mill Street Plant 101	Guilford	2008	0.57
CEMEX Construction Materials Atlantic, LLC - Marion	Macon	2007	0.57
Thomas Concrete Company, Inc., Gastonia Plant	Gaston	2008	0.56
Southern Concrete Materials, Inc. - Murphy Plant	Cherokee	2005	0.56
Southern Equip Co - Raleigh Plt #2	Wake	2008	0.55
Southern Equip Co - Plant #4	Wake	2008	0.53
Ready Mixed Concrete Company, Statesville Plant #90	Iredell	2007	0.53
Concrete Supply Company, Lincolnton Plant	Lincoln	2007	0.52
CEMEX Construction Materials Atlantic, LLC - Monroe	Union	2008	0.48
Blue Ridge Tissue Corporation - Patterson Mill	Caldwell	2005	0.48
CEMEX Construction Materials Atlantic, LLC - Concord	Cabarrus	2008	0.47
M-B Industries, Inc.	Transylvania	2005	0.46
Southern Concrete Materials, Inc. - South Franklin Plant	Madison	2007	0.45
City of Raleigh Crabtree Crls	Wake	2005	0.44
CEMEX Construction Materials Atlantic,LLC	Richmond	2008	0.44
Southern Concrete Materials Inc - Burnsville	Yancey	2007	0.44
American Concrete, Inc.	Burke	2006	0.44
Southern Equipment Co., Ready Mixed Concrete Co - Garner #5	Wake	2005	0.43
B.V. Hedrick Gravel and Sand Company	Anson	2009	0.43
Southern Concrete Materials Inc	Clay	2005	0.43
Revlon Consumer Products Corp	Granville	2005	0.42
Plastic Packaging, Inc. - Plant No. 2	Rutherford	2009	0.42
Synthetics Finishing - Conover	Catawba	2006	0.41
Carolina Sunrock, LLC - Butner Concrete	Granville	2009	0.40
Concrete Supply, North Gastonia Plant	Gaston	2008	0.40
Loven Ready Mix, Inc.	Avery	2005	0.39
Kerrs HRM Concrete Co Inc. - Morganton / Hawkins Road	Burke	2006	0.39
Public Service Company of NC Inc	Wake	2006	0.39
CEMEX Construction Materials, Atlantic, LLC	Alamance	2006	0.39
The SEFA Group, Inc. - Fly Ash Facility, Belews Creek	Stokes	2008	0.37
Heritage Concrete Service Corporation - Dunn Plant	Harnett	2006	0.35
Ready Mixed Concrete Company, Mooresville Plant #91	Iredell	2008	0.34
Ready Mixed Concrete Co., Hickory	Catawba	2008	0.34

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Pugh Concrete Company	Chatham	2007	0.34
WSACC-Lower Rocky River Pump Station	Cabarrus	2007	0.33
Southern Concrete Materials, Inc. - Franklin	Madison	2009	0.33
Concrete Supply Company Matthews Plant	Union	2009	0.32
Blackwelder Tank Service	Moore	2005	0.32
S. T. Wooten Corporation - Newport	Carteret	2008	0.31
Ready Mixed Concrete Co.-Plant 29	Nash	2006	0.30
City of Hickory, Water Treatment Plant	Catawba	2005	0.30
Ready Mixed Concrete Co. - High Point	Guilford	2008	0.30
Thomas Concrete of Carolina Inc	Wake	2006	0.30
Boone Ready-Mix, Inc.	Watauga	2006	0.30
Southern Equip Co - Carrboro Pl	Orange	2009	0.30
Southern Equipment Co., dba Ready Mix Concrete Co.	Wake	2006	0.29
Linde Gas North America LLC	Durham	2006	0.28
Southern Equipment Co dba Ready Mix Concrete Co - Plant #6	Wake	2009	0.27
S&W Ready Mix Concrete Company, Inc. - Elizabethtown Plant	Bladen	2007	0.27
Toxaway Concrete, Inc. - LBM Quarry	Transylvania	2007	0.27
Elmer's Products, Inc.	Iredell	2009	0.26
Southern Concrete Materials, Inc. - Andrews Plant	Cherokee	2005	0.25
Southern Concrete Materials, East Plant-Stallings	Union	2006	0.25
Concrete Supply Company, Shelby Plant	Cleveland	2007	0.25
City of Graham Wastewater Treatment Plant	Alamance	2008	0.25
Chandler Concrete/High Country, LLC	Watauga	2006	0.24
Caldwell Ready-Mix, Inc.	Caldwell	2007	0.24
Chandler Concrete Co.,Inc.- West Jefferson Plant 503	Ashe	2006	0.23
Thomas Concrete of Carolina Inc-West Street Plant	Wake	2008	0.23
Thomas Concrete of Carolina, Inc.	Durham	2006	0.23
Piedmont Wood Products	Alexander	2008	0.23
Bradley Creek Pump Station	New Hanover	2008	0.22
City of Newton, Clark Creek Wastewater Treatment Plant	Catawba	2009	0.22
Thomas Concrete Company, Inc., Concord Plant	Cabarrus	2008	0.22
Concrete Supply Company - Mocksville Plant	Davie	2008	0.21
Ready Mixed Concrete - Fayetteville Plant 115	Cumberland	2009	0.21
Ready Mixed Concrete - Roanoke Rapids	Halifax	2006	0.21

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Elizabeth Carbide of NC Inc	Davidson	2006	0.21
Southern Equipment Company -Plant # 1	Wake	2009	0.20
Latco Concrete Products, Inc.	Rutherford	2007	0.20
Hildreth Septic Tanks	Anson	2007	0.20
Pilgrim's Pride Corporation, Staley Feed Mill	Randolph	2009	0.20
CEMEX Construction Materials Atlantic, LLC - Mt. Airy North	Surry	2009	0.20
Specialized Packaging Flexo, LLC	Guilford	2007	0.20
Tyson Foods Inc	Lee	2008	0.20
Schneider Mills Industries Inc	Rutherford	2007	0.19
C & R Hard Chrome Service Inc.	Gaston	2005	0.19
Thomas Concrete of Carolinas, Inc., Monroe Plant	Union	2009	0.19
Chandler Concrete Co., Inc. - Haw River Plant 609	Alamance	2008	0.18
Thomas Concrete of Carolina - Wake Forest	Wake	2008	0.18
Ready Mixed Concrete Company - Wilson	Wilson	2003	0.18
Ready Mixed Concrete Company - Newport	Carteret	2009	0.18
Concrete Supply Company Albemarle Plant	Stanley	2008	0.17
Ready Mixed Concrete Company, Taylorsville	Alexander	2009	0.17
Concrete Supply Company - Kannapolis	Rowan	2006	0.16
Ready Mixed Concrete Co.-Spring Lake-Plant 117	Cumberland	2009	0.16
Nomaco Inc - Zebulon	Wake	2009	0.16
Kerrs Hickory Ready-Mixed Concrete Co., Inc., Maiden Plant	Catawba	2008	0.15
Thomas Concrete of Carolina, Inc. - Mooresville Plant	Iredell	2008	0.14
Southern Concrete Materials, Inc. - Fletcher	Henderson	2008	0.14
Ready Mixed Concrete-Laurinburg-Plant 119	Scotland	2009	0.14
Roanoke Chowan Ready Mix	Bertie	2008	0.14
S&W Ready Mix Concrete Co. - Spring Lake Plant	Cumberland	2007	0.14
B & E Woodturning Inc	Caldwell	2005	0.13
CEMEX Construction Materials Atlantic, LLC - Statesville	Iredell	2007	0.13
Chandler Concrete Co., Inc.-Sparta Plant 505	Alleghany	2006	0.12
Southern Equipment Co dba Ready Mixed Concrete Co-Plant #10	Wake	2009	0.12
Cedar Valley Finishing Company, Inc.	Union	2005	0.12
Hairfield Wilbert Burial Vault Company	Burke	2008	0.12
Chandler Concrete/High Country, LLC - Crumpler Plant 504	Ashe	2008	0.12

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Southern Concrete Materials, Inc. - Robbinsville Plant	Graham	2006	0.11
CEMEX Construction Materials Atlantic, LLC - Morrisville	Wake	2008	0.11
B & C Concrete Products, Inc.	Wilkes	2008	0.10
North Carolina Electric Membership Corp	Wake	2005	0.10
NC DOC - Selma	Johnston	2009	0.10
Ready Mixed Concrete Company - Shallotte, Plant 108	Brunswick	2008	0.10
Ready Mixed Concrete Company - Shallotte, Plant 103	Brunswick	2008	0.10
Thomas Concrete of Carolina, Inc. - Harrisburg Plant	Cabarrus	2008	0.10
Williams Ready Mix Products, Inc	Union	2009	0.08
North Carolina Agricultural and Technical State University	Guilford	2005	0.08
S & G Prestress Company	New Hanover	2007	0.07
Unique Stone, Inc.	Richmond	2008	0.07
Public Service Company of NC, Inc. - Mill Spring Compressor	Polk	2009	0.06
Smith Setzer & Sons	Catawba	2009	0.06
Powell's Concrete Company	Halifax	2006	0.06
Southern Equip Co - Plant #13	Granville	2005	0.05
Hewletts Creek Pump Station	New Hanover	2008	0.05
M & S Warehouse, Inc.	Caldwell	2008	0.05
Chandler Concrete Inc	Person	2009	0.05
McDowell Cement Products Company - Marion	Macon	2008	0.05
Chandler Concrete Co Inc	Durham	2006	0.04
Carolina Sunrock Wake Forest Plant	Wake	2006	0.04
CEMEX Construction Materials Atlantic, LLC - Durant Park	Wake	2009	0.04
S&W Ready Mix Concrete Co., Inc. - Newton Grove Plant	Sampson	2006	0.04
Gamewell Septic Tank Service, Inc.	Caldwell	2006	0.04
Shoaf Precast Septic Tank, Inc.	Davidson	2009	0.04
NB Corporation - d/b/a, Greensboro Industrial Platers	Guilford	2009	0.04
S T Wooten Plant 5 - Banks Rd	Wake	2007	0.04
Stay-Right Precast Concrete, Inc.	Franklin	2009	0.03
S. T. Wooten Corporation/Apex Plant -Plant No. 18	Chatham	2007	0.03
S T Wooten Corp- Garner Concrete plant # 11	Wake	2005	0.03
S T Wooten Corp Plant 7	Wake	2007	0.03
Blackstone Wood Products, Inc.	Burke	2008	0.03
Concrete Supply Company - Denver	Lincoln	2006	0.03
Wellington Hamrick Precast, Inc.	Cleveland	2008	0.03

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
Chandler Concrete Co. & Building Supply	Rowan	2008	0.03
Hexagon Polymers Compounding NC, Inc.	Iredell	2006	0.03
S&W Ready Mix Concrete Co., Inc. - S. Reilly Road Plant	Cumberland	2006	0.02
Chandler Concrete Company, Inc.-Huffman Mill Road Plant 605	Alamance	2005	0.02
Wellington Hamrick, Inc., Shelby Plant	Cleveland	2006	0.02
McDowell Lumber Company, Inc.	Randolph	2009	0.02
S T Wooten Wilson Concrete Plant	Wilson	2006	0.02
Chandler Concrete Company, Inc.-Worth Street Plant 601	Alamance	2005	0.02
S T Wooten Corporation - Hubert	Onslow	2009	0.02
Ready Mixed Concrete Co Smithfield - Plant 12	Johnston	2008	0.02
S.T. Wooten Corporation - Wilson Mills Plant No 3	Johnston	2008	0.02
Southern Concrete Materials, Inc. - Canton	Haywood	2009	0.02
S. T. Wooten Corporation - Plant 9	Wake	2009	0.02
PLT Concrete Services	Nash	2005	0.02
Southern Concrete Materials - Bryson City	Swain	2008	0.01
Die-Tech, Inc.	Davidson	2006	0.01
Appalachian Paving & Grading, Inc.	Mitchell	2004	0.01
S.T. Wooten Corporation - Winterville	Pitt	2008	0.01
Chandler Concrete Co Inc - Pittsboro	Chatham	2009	0.01
Concrete Service Company - Pope AFB Plant	Cumberland	2005	0.01
Ready Mixed Concrete - Dunn Plt	Harnett	2005	0.01
CP&L - Harris Nuclear Plant	Wake	2005	0.01
Keywell L.L.C.	Union	2008	0.01
Chandler Concrete Company	Durham	2007	0.01
Metal Industries - Marion	Macon	2005	0.01
Southern Equipment Co dba Ready Mix Concrete Co Plant #53	Orange	2009	0.01
Southern Concrete Materials - Salisbury Plant	Rowan	2007	0.01
Barnhill Contracting - Clinton Plant (Multi-Site)	Sampson	2008	0.01
S T Wooten Corp Plant 8	Wake	2009	0.01
Johnson Concrete Company	Wake	2006	0.01
Chandler Concrete/Piedmont, Inc. - Reidsville Plant 104	Rockingham	2009	0.01
Chandler Concrete/Piedmont Inc.-Madison Plant 106	Rockingham	2007	0.01
S. T. Wooten Corporation - Franklinton	Franklin	2009	0.01
Ready Mixed Concrete - Pinehurst Plt	Moore	2008	0.01

NORTH CAROLINA'S TOXIC AIR POLLUTANT EMISSIONS BY FACILITY (Continued)

Facility Name	County	Data Year*	Facility Wide Emissions of Toxic Air Pollutants (lb/yr)
B & B Concrete Products, Inc.	Madison	2009	0.01
Southwood Furniture Corporation - Plant No. 3	Catawba	2008	0.00
Sonoco Products Co. - Granite Falls Service Center	Caldwell	2004	0.00
NC Municipal Landfill Gas LLC	Henderson	2005	0.00
Southern Concrete Materials, Inc. - Mills River	Henderson	2009	0.00
Gate Precast Company	Granville	2008	0.00
Intermont Group Ltd.	Durham	2005	0.00
Murdock Concrete Company	Guilford	2005	0.00
City of Greensboro - N Buffalo WWTP	Guilford	2005	0.00
CEMEX Construction Materials Atlantic, LLC - Hendersonville	Henderson	2008	0.00
Enerdyne III LLC	Henderson	2005	0.00
Southern Concrete Materials - Sherrills Ford Plant	Catawba	2009	0.00
CEMEX Construction Materials Atlantic, LLC - Franklin	Madison	2008	0.00
Dellinger Precast Inc.	Lincoln	2007	0.00
Unimin Corporation Quartz/Feldspar Facility	Mitchell	2004	0.00
Thomas Concrete of Carolina, Inc. - Denver Plant	Lincoln	2007	0.00
		TOTAL	**37,529,433**

Source: 2009 emissions data submitted by NC facilities to the Division of Air Quality or the most current year

ATTACHMENT 2: NORTH CAROLINA'S EMISSIONS BY POLLUTANT

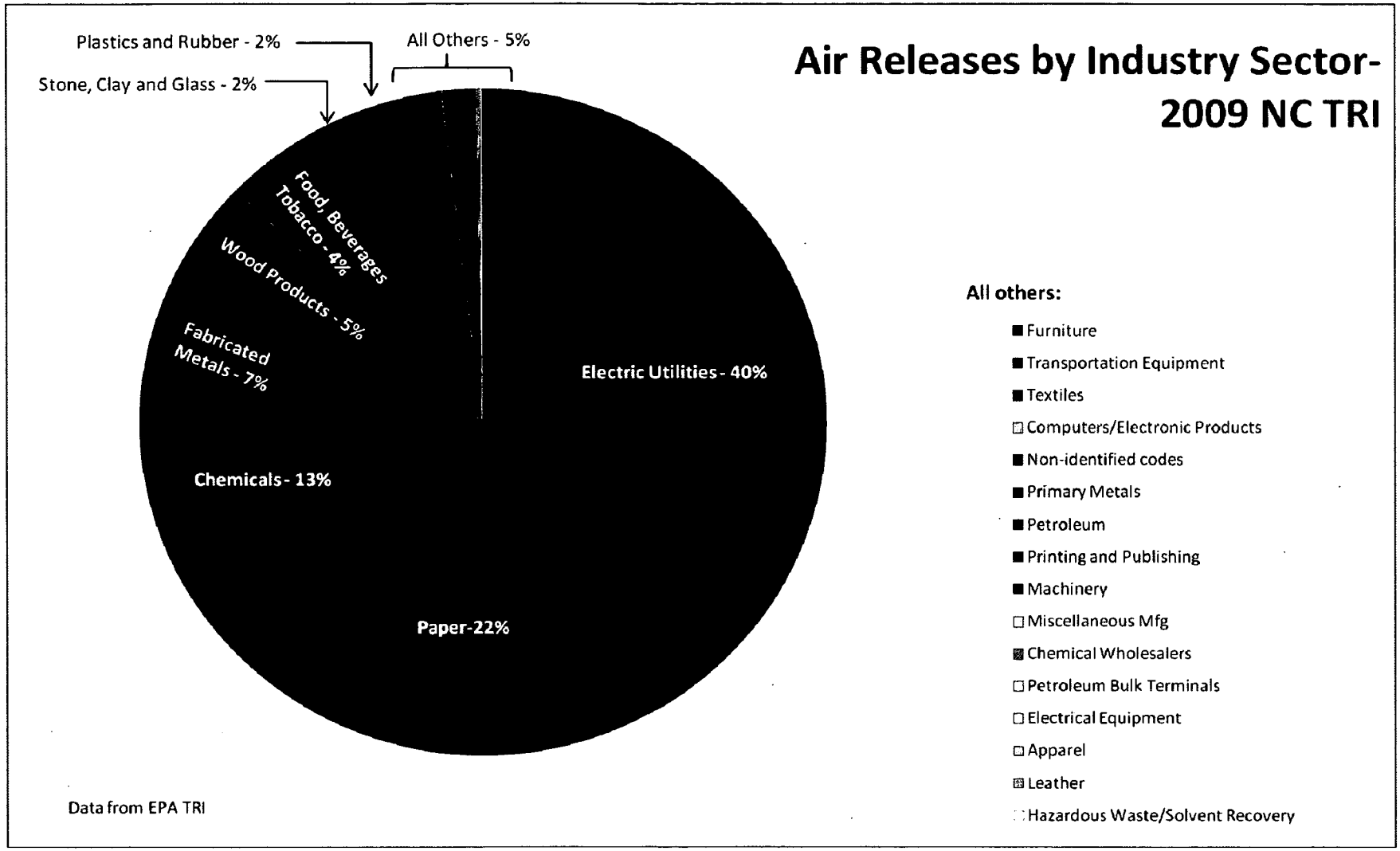
TOXIC AIR POLLUTANT	Emission Rate (lb/yr)
Hydrogen chloride (hydrochloric acid)	13,540,595
Hydrogen sulfide	3,699,836
Sulfuric acid	2,796,629
Ammonia (as NH3)	2,677,313
Hexane isomers, except n-hexane	1,595,036
Acetic acid	1,577,228
MEK (methyl ethyl ketone, 2-butanone)	1,449,711
Hydrogen fluoride (hydrofluoric acid as mass of HF) (Component of 16984488/Fluorides)	1,411,917
Toluene	1,271,014
Formaldehyde	1,115,491
Hexane, n-	986,514
Acetaldehyde	734,115
Fluorides (sum of all fluoride compounds as mass of F ion)	654,140
Ethyl acetate	642,365
Styrene	570,001
Xylene (mixed isomers)	530,116
Methyl mercaptan	388,024
MIBK (methyl isobutyl ketone)	326,464
Phenol	307,394
Chlorine	204,878
Acrolein	174,472
Benzene	150,185
Cresol (mixed isomers)	129,455
Methylene chloride	109,442
Carbon disulfide	69,094
TCE (trichloroethylene)	46,830
Chlorine dioxide	35,359
Manganese & compounds	34,767
Manganese Unlisted Compounds - Specify Compound (Component of MNC)	34,598
DEHP (Di(2-ethylhexyl)phthalate)	22,326
Perchloroethylene (tetrachloroethylene)	22,046
Benzyl chloride	17,686
Dioxane, 1,4-	15,603
Chloroform	14,831
CFC-11 (Trichlorofluoromethane)	13,877
Nitric acid	13,439
Bromine	12,769
CFC-12 (Dichlorodifluoromethane)	10,873
Aniline	10,731

TOXIC AIR POLLUTANTS	Emission Rate (lb/yr)
Ethylene dichloride (1,2-dichloroethane)	8,941
Vinyl chloride	8,544
Nitrobenzene	7,659
Butadiene, 1,3-	7,624
Chromium (VI) Soluble Chromate Compounds (Component of CRC)	5,157
Acrylonitrile	5,153
Nickel metal (Component of NIC)	5,093
Hydrogen cyanide (as HCN) (Component of CNC)	4,558
Ethylene glycol monoethyl ether (Cellusolve) (Component of GLYET)	4,447
Chlorobenzene	4,213
Arsenic & Compounds (total mass of elemental AS, arsine and all inorganic compounds)	3,596
Ethylenediamine	3,342
Sodium chromate (Component of CRC & SolCR6)	3,047
Hexachlorocyclopentadiene	2,612
Carbon tetrachloride	2,596
Methyl chloroform	2,405
Chromate (VI) Bioavailable Pigments as a Group (Component of BioCR6 & CRC)	2,295
Hydrazine	2,268
CFC- 113 (1,1,2-trichloro-1,2,2-trifluoroethane)	2,267
Ethylene oxide	2,255
Zinc chromate (VI) (Component of BioCR6 & CRC)	2,056
Mercury & Compounds - all total mass includes Hg Vapor	2,013
Dichlorofluoromethane	2,004
Chromic acid (VI) (Component of SolCR6 & CRC)	1,896
Chromium (VI) Non-Specific Compounds, as Chrom(VI) (Component CRC)	1,776
Ethylene dibromide (dibromoethane)	1,705
Ethyl mercaptan	1,603
Mercury, vapor (Component of HGC)	1,598
Tetrachloroethane, 1,1,2,2-	1,128
Cresol, p-	1,038
Fluorine (Component of Fluorides)	980
Phosphine	917
Dimethyl sulfate	721
Chloroprene	550
Cadmium Metal, elemental, unreacted (Component of CDC)	467
Mercury Unlisted Compounds - Specify Compound (Component of HGC)	413
Cresol, m-	373
Cresol, o-	367
Toluene, 2,6-diisocyanate	360
Toluene, 2,4-diisocyanate	352
Vinylidene chloride	334

TOXIC AIR POLLUTANT	Emission Rate (lb/yr)
Beryllium & compounds (Total mass)	294
Sodium dichromate (VI) (Component of CRC & SolCR6)	201
Calcium chromate (VI) (Component of BioCR6 & CRC)	192
Manganese oxide (Component of MNC)	169
Beryllium Metal (unreacted) (Component of BEC)	167
Maleic anhydride	113
Epichlorohydrin	65
Nickel, soluble compounds as nickel (Component of NIC)	62
Strontium chromate (VI) (Component of CRC & BioCR6)	46
Benzo(a)pyrene (Component of 83329/POMTV & 56553/7PAH)	40
Aziridine (ethylene imine)	38
Nickel sulfate (Component of NIC & NICKSOLCP)	26
Lead chromate (VI) (Component of PBC, NSCR6, & CRC)	22
Pentachlorophenol	21
Barium chromate (Component of CRC & NSCR6)	18
Benzidine & salts (Component of 83329/POMTV)	18
PCB (polychlorinated biphenyls)	16
Potassium chromate (VI) (Component of CRC & SolCR6)	7
Ammonium chromate (VI) (Component of SolCR6)	6
Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8	5
Nickel chloride (Component of NIC & NICKSOLCP)	4
Chromium trioxide (VI) (Component of NSCR6 & CRC)	4
Nitrosodimethylamine, N-	2
Mercury - alkyl compounds, total mass (Component of HGC)	1
Mercury, aryl and inorganic compounds (Component of HGC)	1
Phosgene	0
Manganese sulfate (Component of MNC)	0
Ammonium dichromate(VI)(Component of SolCR6)	0
Bis-chloromethyl ether	0
Calcium dichromate (VI) (Component of BioCR6 & CRC)	0
Potassium dichromate (VI) (Component of CRC & SolCR6)	0
Chromium dioxide (IV) (Component of CRC)	0
Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (Component of CLDC & 83329/POMTV)	0
Manganese nitrate (Component of MNC)	0
Hexachlorodibenzo dioxin mixture	0
Manganese tetroxide (Component of MNC)	0
TOTAL	**37,529,433**

Source: 2009 emissions data submitted by NC facilities to the Division of Air Quality or the most current year

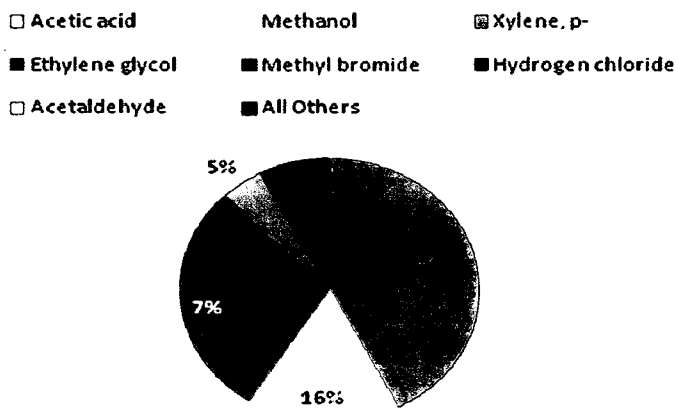
ATTACHMENT 3: 2009 TOXIC AIR POLLUTANT EMISSIONS BY INDUSTRY SECTOR



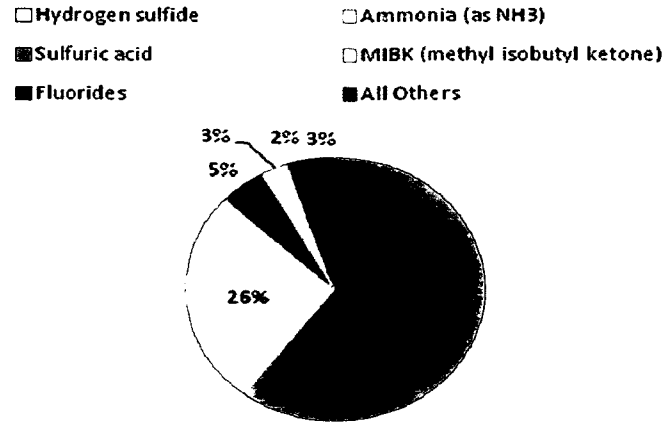
The chart visually shows the proportion of air releases as reported by industry sector to the Toxics Release Inventory as required by the Emergency Planning and Community Right-to-Know Act (EPCRA).

ATTACHMENT 4: POLLUTANTS EMITTED FROM SELECT INDUSTRY SECTORS

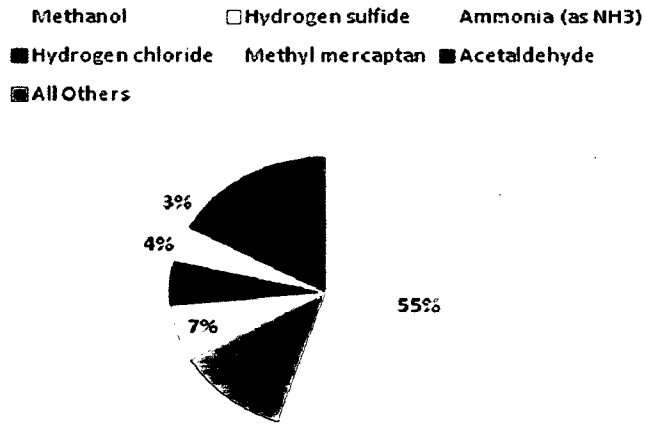
Synthetic Fiber Mfg.



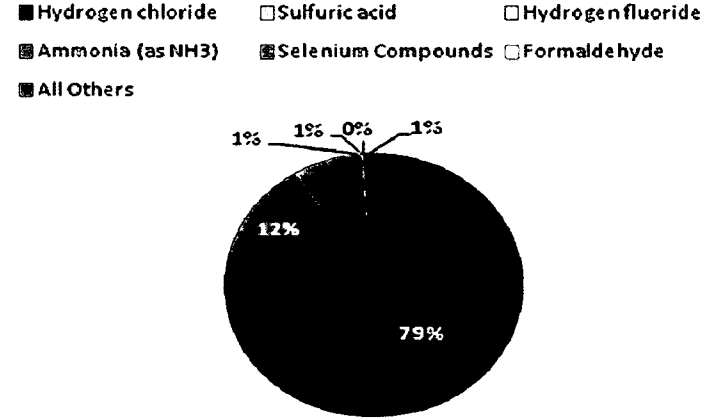
Fertilizer



Paper Mills



Electric Power Gen (Fossil Fuel)



These charts depict the proportion of HAP/TAP emissions from these four large industry sectors. The predominant toxic air pollutant is shown as a percent of total emissions for each industry sector. These data are from the Division of Air Quality.

Source: 2009 EPA TRI (Toxics Release Inventory)

ATTACHMENT 5: TOXIC AIR POLLUTANTS REGULATED BY NORTH CAROLINA, EPA AND SOUTH CAROLINA

Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
Y= pollutants included in the respective lists. • **North Carolina has 21 compounds that are state-only toxic air pollutants, and these pollutants are highlighted in yellow.** • **South Carolina has 79 compounds that are state-only toxic air pollutants.** • **Virginia's pollutant list consists of the EPA HAP list.**				
				Comments:
Acetaldehyde	Y	Y	Y	
Acetamide	N	Y	Y	
Acetic acid	Y	N	N	
Acetic anydride	N	N	Y	
Acetonitrile	N	Y	Y	
Acetophenone	N	Y	Y	
Acetylaminofluorene, 2-	N	Y	Y	
Acrolein	Y	Y	Y	
Acrylamide	N	Y	Y	
Acrylic acid	N	Y	Y	
Acrylonitrile	Y	Y	Y	
Aldicarb	N	N	Y	
Allyl chloride	N	Y	Y	
Aminobiphenyl, 4-	N	Y	Y	
Ammonia	Y	N	N	
a-Naphthylamine	N	N	Y	
Aniline	Y	Y	Y	
Anisidine, o-	N	Y	Y	
Anisidine, p-	N	N	Y	
Ammonium Chloride	N	N	Y	
Antimony compounds (all)	N	Y	Y	EPA HAP includes all antimony compounds
Arsenic & inorganic arsenic compounds (all)	Y	Y	N	EPA HAP includes all arsenic compounds
Arsenic Pentoxide	N	N	Y	EPA HAP includes all arsenic compounds
Asbestos	Y	Y	N	
Aziridine	Y	Y	Y	
Benzene	Y	Y	Y	

Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
Y= pollutants included in the respective lists. • **North Carolina has 21 compounds that are state-only toxic air pollutants, and these pollutants are highlighted in yellow.** • **South Carolina has 79 compounds that are state-only toxic air pollutants.** • **Virginia's pollutant list consists of the EPA HAP list.**				
				Comments:
Benzidene & salts	Y	Y	Y	
Benzo(a)pyrene	Y	N	Y	
Benzotrichloride	N	Y	Y	
Benzyl chloride	Y	Y	Y	
Beryllium & compounds (all)	N	Y	N	EPA HAP includes all beryllium compounds
Beryllium oxide	N	N	Y	EPA HAP includes all beryllium compounds
Beryllium sulfate	N	N	Y	EPA HAP includes all beryllium compounds
Beryllium (metal)	Y	N	Y	NC regulates specific beryllium compounds only
Beryllium chloride	Y	N	N	EPA HAP includes all beryllium compounds
Beryllium fluoride	Y	N	N	EPA HAP includes all beryllium compounds
Beryllium nitrate	Y	N	N	EPA HAP includes all beryllium compounds
Bioavailable chromate pigments, as chromium (VI) equivalent	Y	Y	Y	EPA HAP includes **all** +3 and +6 chrome species, NC regulates only **specific** +6 chrome
Biphenyl	N	Y	Y	
Bis-chloromethyl ether	Y	Y	Y	
Bromine	Y	N	N	
Bromoform	N	Y	Y	
Butadiene, 1,3-	Y	Y	Y	
n-Butylamine	N	N	Y	
Butyl Mercaptan, n- (1-Butanethiol)	N	N	Y	
Cadmium & compounds	N	Y	N	EPA HAP list includes all cadmium compounds
Cadmium oxide	N	N	Y	EPA HAP list includes all cadmium compounds
Cadmium sulfate	N	N	Y	EPA HAP list includes all cadmium compounds

Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
Y= pollutants included in the respective lists. • **North Carolina has 21 compounds that are state-only toxic air pollutants, and these pollutants are highlighted in yellow.** • **South Carolina has 79 compounds that are state-only toxic air pollutants.** • **Virginia's pollutant list consists of the EPA HAP list.**				
				Comments:
Cadmium	Y	N	Y	EPA HAP list includes all cadmium compounds
Cadmium acetate	Y	N	N	NC regulates only specific cadmium compounds
Cadmium bromide	Y	N	N	NC regulates only specific cadmium compounds
Calcium cyanamide	N	Y	Y	EPA HAP list includes all cyanide compounds
Caprolactam, dust and vapor	N	N	Y	caprolactam delisted from HAP list
Captan	N	Y	Y	
Carbaryl	N	Y	Y	
Carbon disulfide	Y	Y	Y	
Carbon tetrachloride	Y	Y	Y	
Carbonyl sulfide	N	Y	Y	
Catechol	N	Y	Y	
Chloramben	N	Y	Y	
Chlordane	N	Y	Y	
Chlorine	Y	Y	Y	
Chloroacetic acid	N	Y	Y	
Chloroacetophenone, 2-	N	Y	Y	
Chlorobenzene	Y	Y	Y	
Chlorobenzilate	N	Y	Y	
Chloroform	Y	Y	Y	
Chloromethyl methyl ether	N	Y	Y	
Chloronitrobenzene, p-	N	N	Y	
Chloroprene	Y	Y	Y	
Cobalt compounds	N	Y	Y	EPA HAP includes all cobalt compounds
Coke oven emissions	N	Y	Y	
Cresol/Cresylic Acid (isomers and mixtures)	N	Y	Y	

Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
Y= pollutants included in the respective lists. • **North Carolina has 21 compounds that are state-only toxic air pollutants, and these pollutants are highlighted in yellow.** • **South Carolina has 79 compounds that are state-only toxic air pollutants.** • **Virginia's pollutant list consists of the EPA HAP list.**				
				Comments:
Cresol	Y	N	Y	
Cresol, m-	N	Y	Y	
Cresol, o-	N	Y	Y	
Cresol, p-	N	Y	Y	
Cumene	N	Y	Y	
Cyanamide	N	N	Y	
Cyanic acid	N	N	Y	
Cyanide	N	N	Y	
Cyanide compounds (see also hydrogen cyanide)	N	Y	Y	EPA regulates all cyanide compounds
Cyanoacetamide	N	N	Y	
Cyanogen	N	N	Y	
D, 2,4 (salts & esters)	N	Y	Y	
DDE	N	Y	Y	
Di(2-ethylhexyl)phthalate (DEHP)	Y	Y	Y	
Diazomethane	N	Y	Y	
Dibenzofurans	N	Y	Y	
Dibromo-3-chloropropane, 1,2-	N	Y	Y	
Dibutylphthalate	N	Y	Y	
Dichlorobenzene(p), 1,4-	Y	Y	Y	
Dichlorobenzidene, 3,3-	N	Y	Y	
Dichlorodifluoromethane (CFC-12)	Y	N	N	
Dichloroethyl ether	N	Y	N	
Dichlorofluoromethane	Y	N	N	
Dichloropropene, 1,3-	N	Y	Y	
Dichlorvos	N	Y	Y	
Diethanolamine	N	Y	Y	
Diethyl aniline, N,N-	N	Y	Y	
Diethyl phthalate	N	N	Y	
Diethyl sulfate	N	Y	Y	
Diisodecyl phthalate	N	N	Y	

Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
Y= pollutants included in the respective lists. • **North Carolina has 21 compounds that are state-only toxic air pollutants, and these pollutants are highlighted in yellow.** • **South Carolina has 79 compounds that are state-only toxic air pollutants.** • **Virginia's pollutant list consists of the EPA HAP list.**				
				Comments:
Dimethoxybenzidine, 3,3-	N	Y	Y	
Dimethyl aminoazobenzene	N	Y	Y	
Dimethyl benzidine, 3,3-	N	Y	Y	
Dimethyl carbamoyl chloride	N	Y	Y	
Dimethyl formamide	N	Y	Y	
Dimethyl hydrazine, 1,1-	N	Y	Y	
Dimethyl hydrazine, 1,2-	N	N	Y	
Dimethyl phthalate	N	Y	Y	
Dimethyl sulfate	Y	Y	Y	
Dinitro-o-cresol, 4,6- (& salts)	N	Y	Y	
Dinitrophenol, 2,4-	N	Y	Y	
Dinitrotoluene, 2,4-	N	Y	Y	
Dioxane, 1,4-	Y	Y	Y	
Diphenylhydrazine, 1,2-	N	Y	Y	
Epichlorohydrin	Y	Y	Y	
Epoxybutane, 1,2-	N	Y	Y	
Ethyl acetate	Y	N	N	
Ethyl acrylate	N	Y	Y	
Ethyl benzene	N	Y	Y	
Ethyl carbamate (urethane)	N	Y	Y	
Ethyl chloride (chloroethane)	N	Y	Y	
Ethyl mercaptan (ethanethiol)	Y	N	Y	
Ethylene dibromide	Y	Y	Y	
Ethylene dichloride (1,2-dichloroethane)	Y	Y	Y	
Ethylene glycol	N	Y	Y	
Ethylene glycol monoethyl ether	Y	N	Y	NC regulates 1 specific glycol ether compound
Ethylene oxide	Y	Y	Y	
Ethylene thiourea	N	Y	Y	
Ethylenediamine	Y	N	N	

Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
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				Comments:
Ethylidene dichloride (1,1-dichloroethane)	N	Y	Y	
Fine mineral fibers	N	Y	Y	
Fluorides	Y	N	N	
Formaldehyde	Y	Y	Y	
Formamide	N	N	Y	
Formic acid	N	N	Y	
Furfural	N	N	Y	
Furfuryl alcohol	N	N	Y	
Glycidaldehyde	N	N	Y	
Glycol ethers (see ethylene glycol monoethyl ether)	N	Y	Y	EPA regulates as a chemical category
Heptachlor	N	Y	Y	
Hexachlorobenzene	N	Y	Y	
Hexachlorobutadiene	N	Y	Y	
Hexachlorocyclohexane (multiple isomers)	N	N	Y	
Hexachlorocyclopentadiene	Y	Y	Y	
Hexachlorodibenzo-p-dioxin	Y	N	N	Dioxin
Hexachloroethane	N	Y	Y	
Hexachloronaphthalene	N	N	Y	
Hexamethylene-1,6-diisocyanate	N	Y	Y	
Hexamethylphosphoramide	N	Y	Y	
Hexane, isomers	Y	N	N	
Hexane, n-	Y	Y	Y	
Hydrazine	Y	Y	Y	
Hydrogen chloride (hydrochloric acid)	Y	Y	Y	
Hydrogen cyanide (see cyanide cmpd)	Y	N	Y	EPA regulates as a chemical category
Hydrogen fluoride (hydrofluoric acid)	Y	Y	N	
Hydrogen sulfide	Y	N	Y	
Hydroquinone	N	Y	Y	

Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
Y= pollutants included in the respective lists. • **North Carolina has 21 compounds that are state-only toxic air pollutants, and these pollutants are highlighted in yellow.** • **South Carolina has 79 compounds that are state-only toxic air pollutants.** • **Virginia's pollutant list consists of the EPA HAP list.**				
				Comments:
Isophorone	N	Y	Y	
Isopropylamine	N	N	Y	
Kepone (Chlordecone)	N	N	Y	
Ketene	N	N	Y	
Lead (+2) Arsenate	N	N	Y	
Lead Arsenate	N	N	Y	
Lead compounds	N	Y	N	NC regulates lead as a criteria pollutant
Lindane (all isomers)	N	Y	Y	
Malathion	N	N	Y	
Maleic anhydride	Y	Y	Y	
Manganese & compounds	Y	Y	Y	EPA HAP includes all manganese compounds
Manganese cyclopentadienyl tricarbonyl	Y	N	Y	NC regulates specific manganese compounds
Manganese tetroxide	Y	N	Y	NC regulates specific manganese compounds
Mercury & compounds	N	Y	N	EPA HAP includes **all** manganese compounds
Mercury, alkyl	Y	N	N	NC regulates **only** specific mercury compounds
Mercury, aryl and inorganic compounds	Y	N	N	NC regulates **only** specific mercury compounds
Mercury, vapor	Y	N	Y	NC regulates **only** specific mercury compounds
Methanol	N	Y	Y	
Methoxychlor	N	Y	Y	
Methyl bromide	N	Y	Y	
Methyl chloride	N	Y	Y	
Methyl chloroform	Y	Y	Y	
Methyl ethyl ketone	Y	N	Y	MEK delisted from HAP list

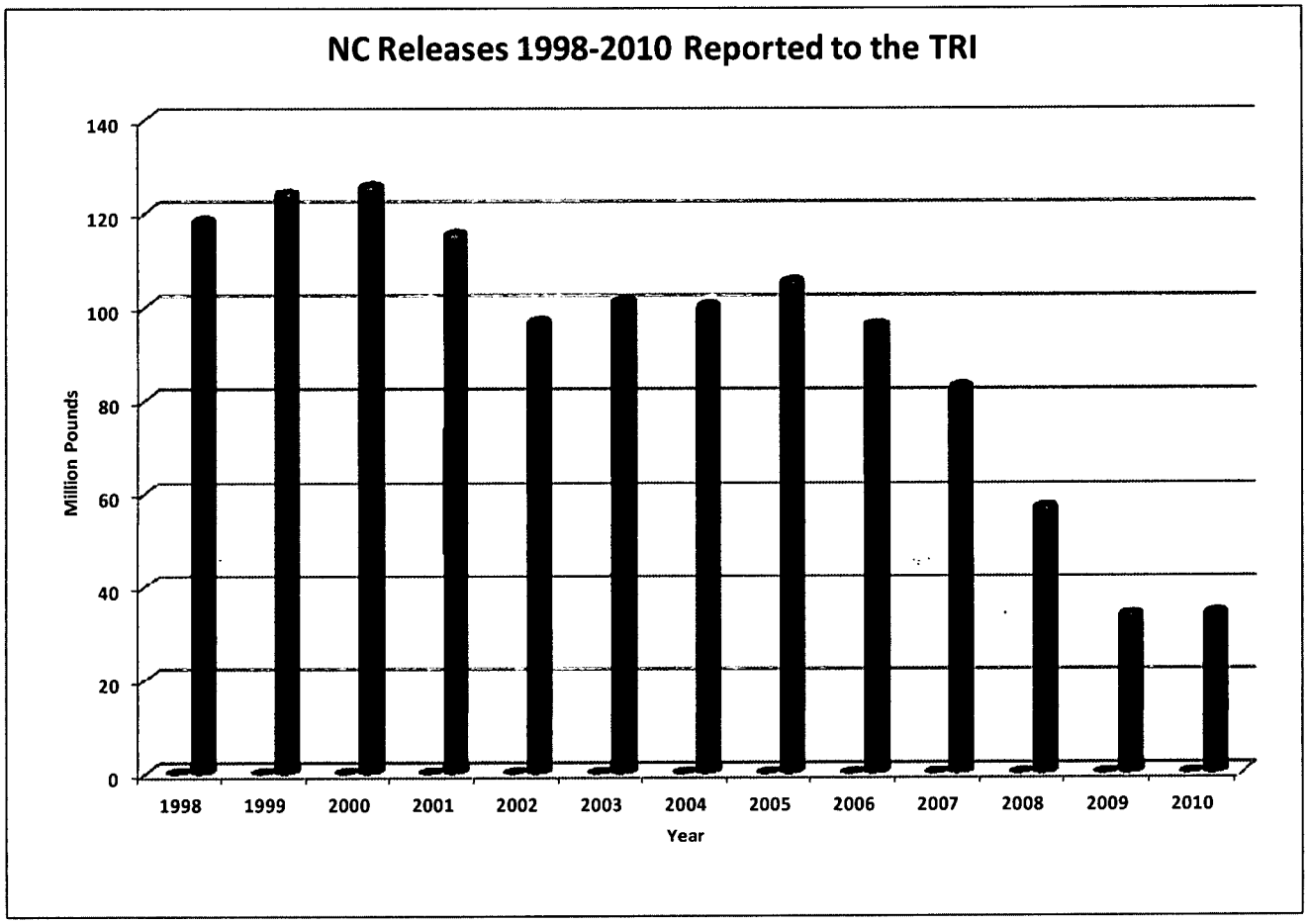
Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
Y= pollutants included in the respective lists. • **North Carolina has 21 compounds that are state-only toxic air pollutants, and these pollutants are highlighted in yellow.** • **South Carolina has 79 compounds that are state-only toxic air pollutants.** • **Virginia's pollutant list consists of the EPA HAP list.**				
				Comments:
Methyl hydrazine	N	Y	Y	
Methyl iodide	N	Y	Y	
Methyl isobutyl ketone	Y	Y	Y	
Methyl isocyanate	N	Y	Y	
Methyl mercaptan	Y	N	Y	
Methyl methacrylate	N	Y	Y	
Methyl tertiary butyl ether	N	Y	Y	
Methylene bis(2-chloroaniline), 4,4-	N	Y	N	
Methylene chloride	Y	Y	Y	
Methylene diphenyl diisocyanate (MDI)	N	Y	Y	
Methylenedianiline, 4,4-	N	Y	Y	
Mineral oil mist (paraffin oil)	N	N	Y	
Mirex	N	N	Y	
Napthalene	N	Y	Y	
Naphthylamine, a-	N	N	Y	
Naphthylamine, b-	N	N	Y	
Nickel & compounds (all)	N	Y	N	EPA HAP includes all nickel compounds
Nickel oxide	N	N	Y	EPA HAP includes all nickel compounds
Nickel sulfate	N	N	Y	EPA HAP includes all nickel compounds
Nickel carbonyl	Y	N	Y	NC regulates specific nickel chemicals only
Nickel metal	Y	N	Y	NC regulates specific nickel chemicals only
Nickel subsulfide	Y	N	N	NC regulates specific nickel chemicals only
Nickel, soluble compounds as nickel	Y	N	N	NC regulates specific nickel chemicals only
Nitric acid	Y	N	Y	
Nitrobenzene	Y	Y	Y	
Nitrobiphenyl, 4-	N	Y	Y	

Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
Y= pollutants included in the respective lists. • **North Carolina has 21 compounds that are state-only toxic air pollutants, and these pollutants are highlighted in yellow.** • **South Carolina has 79 compounds that are state-only toxic air pollutants.** • **Virginia's pollutant list consists of the EPA HAP list.**				
				Comments:
Nitrogen Mustard	N	N	Y	
Nitroglycerin	N	N	Y	
Nitrophenol, 4-	N	Y	Y	
Nitropropane, 2-	N	Y	Y	
Nitrosodimethylamine, N-	Y	Y	Y	
Nitrosomorpholine, N-	N	Y	Y	
Nitroso-N-methylurea, N-	N	Y	Y	
Non-specific chromium (VI) compounds, as chromium (VI) equivalent	Y	N	Y	NC regulates only **specific** +6 chrome
Octachloronaphthalene	N	N	Y	
Oxalic acid	N	N	Y	
Paraquat	N	N	Y	
Parathion	N	Y	Y	
Pentachloronitrobenzene	N	Y	Y	
Pentachlorophenol	Y	Y	Y	
Perchloroethylene (tetrachloroethylene)	Y	Y	Y	
Phenol	Y	Y	Y	
Phenylhydrazine	N	N	Y	
Phenylenediamine, p-	N	Y	Y	
Phosgene	Y	Y	N	
Phosphine	Y	Y	Y	
Phosphoric acid	N	N	Y	
Phosphorus	N	Y	Y	
Phthalic anhydride	N	Y	Y	
Picric acid	N	N	Y	
p-Nitroaniline	N	N	Y	
p-Nitrosophenol	N	N	Y	
p-Nitrotoluene	N	N	Y	
Polychlorinated biphenyls (aroclors)	Y	Y	Y	
Polycyclic organic matter (POM) (see	N	Y	Y	NC's POM TAP is

Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
Y= pollutants included in the respective lists. • **North Carolina has 21 compounds that are state-only toxic air pollutants, and these pollutants are highlighted in yellow.** • **South Carolina has 79 compounds that are state-only toxic air pollutants.** • **Virginia's pollutant list consists of the EPA HAP list.**				
				Comments:
also benzo(a)pyrene)				benzo(a)pyrene only
Propane sultone, 1,3-	N	Y	Y	
Propiolactone, b-	N	Y	Y	
Propionaldehyde	N	Y	Y	
Propoxur (baygon)	N	Y	Y	
Propylene dichloride	N	Y	Y	
Propylene oxide	N	Y	Y	
Propylenimine, 1,2-	N	Y	Y	
Pyrethrin I	N	N	Y	
Pyrethrin II	N	N	Y	
Pyrethrum	N	N	Y	
Quinoline	N	Y	Y	
Quinone	N	Y	Y	
Radionuclides (including radon)	N	Y	N	
Rotenone	N	N	Y	
Selenium compounds (all)	N	Y	Y	EPA HAP includes all selenium compounds
Sodium hydroxide	N	N	Y	
Soluble chromate compounds, as chromium (VI) equivalent	Y	N	Y	NC regulates only **specific** +6 chrome
Styrene	Y	Y	Y	
Styrene oxide	N	Y	Y	
Sulfuric acid	Y	N	Y	
Tetrachloro-1,2-difluoroethane, 1,1,2,2- (CFC-112)	Y	N	N	
Tetrachloro-2,2-difluoroethane, 1,1,1,2- (CFC-112a)	Y	N	N	
Tetrachlorodibenzo-p-dioxin, 2,3,7,8-	Y	Y	Y	Dioxin
Tetrachloroethane, 1,1,2,2-	Y	Y	Y	
Titanium tetrachloride	N	Y	Y	
Toluene	Y	Y	Y	
Toluene diamine, 2,4-	N	Y	Y	

Pollutant Name	NC's Toxic Air Pollutants (TAP)	EPA's Hazardous Air Pollutants (HAP)	SC's Toxic Air Pollutants	
Y= pollutants included in the respective lists. • **North Carolina has 21 compounds that are state-only toxic air pollutants, and these pollutants are highlighted in yellow.** • **South Carolina has 79 compounds that are state-only toxic air pollutants.** • **Virginia's pollutant list consists of the EPA HAP list.**				
				Comments:
Toluene diisocyanate, 2,4- and 2,6-isomers	Y	Y	Y	EPA and SC only regulate 2,4-TDI
Toluidine, o-	N	Y	Y	
Toxaphene	N	Y	Y	
Trichloro, 1,1,2- trifluoroethane, 1,2,2- (CFC-113)	Y	N	N	
Trichlorobenzene, 1,2,4-	N	Y	Y	
Trichloroethane, 1,1,2-	N	Y	Y	
Trichloroethylene	Y	Y	Y	
Trichlorofluoromethane (CFC-11)	Y	N	N	
Trichlorophenol, 2,4,5-	N	Y	Y	
Trichlorophenol, 2,4,6-	N	Y	Y	
Triethylamine	N	Y	Y	
Trifluralin	N	Y	Y	
Trimethylpentane, 2,2,4-	N	Y	Y	
Vinyl acetate	N	Y	Y	
Vinyl bromide	N	Y	Y	
Vinyl chloride	Y	Y	Y	
Vinyl fluoride	N	N	Y	
Vinylidene chloride	Y	Y	Y	
Xylene	Y	N	Y	
Xylenes (isomers and mixtures)	N	Y	N	
Xylene, m-	N	Y	Y	
Xylene, o-	N	Y	Y	
Xylene, p-	N	Y	Y	
Xylidine	N	N	Y	
Number of Pollutants	97	187	253	

ATTACHMENT 6: NORTH CAROLINA AIR TOXICS RELASE INVENTORY TRENDS



Source: 2009 EPA TRI (Toxics Release Inventory)
TRI Data is based on threshold reporting limits and industries' self-reported estimated emissions.

In 1990 (not shown in the graph), N.C. sources reported the release of 95 million pounds of toxic air emissions. In 1998, EPA expanded toxic release reporting requirements to include additional categories of industry sources. The increase in facilities required to report caused total reported air toxics emissions to bump up. The following seven industry sectors began reporting in 1998: metal mining, electrical utilities that combust coal and/or oil, hazardous waste treatment and disposal facilities, chemical wholesale distributors, petroleum bulk stations and terminals, and solvent recovery services. After initial increases due to the expanded reporting requirements, total toxic air emissions began another fairly consistent decline from 2000 to 2010.

ATTACHMENT 7: NORTH CAROLINA STATE AIR TOXICS RULES

SECTION .0700 - TOXIC AIR POLLUTANT PROCEDURES

15A NCAC 02Q .0701 APPLICABILITY

(a) With the exceptions in Rule .0702 of this Section, no person shall cause or allow any toxic air pollutant named in 15A NCAC 02D .1104 to be emitted from any facility into the atmosphere at a rate that exceeds the applicable rate(s) in Rule .0711 of this Section without having received a permit to emit toxic air pollutants as follows:

(1) new facilities according to Rule .0704 of this Section;
(2) existing facilities according to Rule .0705 of this Section;
(3) modifications according to Rule .0706 of this Section.

(b) The Division shall assess risks from all existing exempt combustion sources using exposure and risk assessment methodologies and information and report findings to the EMC no later than July 1, 2014, and every five years thereafter. Based on these findings, the EMC shall determine if amendments to this Section are appropriate and necessary.

(c) Facilities required to comply with MACT standards under 15A NCAC 02D .1109, .1111, or .1112 or 40 CFR Part 63 shall be deemed in compliance with this Subchapter and 15A NCAC 02D .1100 unless the Division determines that modeled emissions result in one or more acceptable ambient levels in 15A NCAC 02D .1104 being exceeded. This review shall be made according to the procedures in 15A NCAC 02D .1106. Once a facility demonstrates compliance with the acceptable ambient levels in 15A NCAC 02D .1104, future demonstrations shall only be required on a five-year basis. When an acceptable ambient level for a toxic air pollutant in 15A NCAC 02D .1104 is changed, any condition that has previously been put in a permit to protect the previous acceptable ambient level for that toxic air pollutant shall not be changed until the permit is renewed, at which time the owner or operator of the facility shall submit an air toxic evaluation showing that the new acceptable ambient level will not be exceeded.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; February 1, 2005.

15A NCAC 02Q .0702 EXEMPTIONS

(a) A permit to emit toxic air pollutants shall not be required under this Section for:

(1) residential wood stoves, heaters, or fireplaces;
(2) hot water heaters that are used for domestic purposes only and are not used to heat process water;
(3) maintenance, structural changes, or repairs that do not change capacity of that process, fuel-burning, refuse-burning, or control equipment, and do not involve any change in quality or nature or increase in quantity of emission of any regulated air pollutant or toxic air pollutant;
(4) housekeeping activities or building maintenance procedures, including painting buildings, resurfacing floors, roof repair, washing, portable vacuum cleaners, sweeping, use and associated storage of janitorial products, or non-asbestos bearing insulation removal;
(5) use of office supplies, supplies to maintain copying equipment, or blueprint machines;
(6) paving parking lots;
(7) replacement of existing equipment with equipment of the same size, type, and function if the new equipment:
    (A) does not result in an increase to the actual or potential emissions of any regulated air pollutant or toxic air pollutant;
    (B) does not affect compliance status; and
    (C) fits the description of the existing equipment in the permit, including the application, such that the replacement equipment can be operated under that permit without any changes to the permit;
(8) comfort air conditioning or comfort ventilation systems that do not transport, remove, or exhaust regulated air pollutants to the atmosphere;
(9) equipment used for the preparation of food for direct on-site human consumption;
(10) non-self-propelled non-road engines, except generators, regulated by rules adopted under Title II of the federal Clean Air Act;

(11) stacks or vents to prevent escape of sewer gases from domestic waste through plumbing traps;
(12) use of fire fighting equipment;
(13) the use for agricultural operations by a farmer of fertilizers, pesticides, or other agricultural chemicals containing one or more of the compounds listed in 15A NCAC 02D .1104 if such compounds are applied according to agronomic practices acceptable to the North Carolina Department of Agriculture;
(14) asbestos demolition and renovation projects that comply with 15A NCAC 02D .1110 and that are being done by persons accredited by the Department of Health and Human Services under the Asbestos Hazard Emergency Response Act;
(15) incinerators used only to dispose of dead animals or poultry as identified in 15A NCAC 02D .1201(c)(4) or incinerators used only to dispose of dead pets as identified in 15A NCAC 02D .1208(a)(2)(A);
(16) refrigeration equipment that is consistent with Section 601 through 618 of Title VI (Stratospheric Ozone Protection) of the federal Clean Air Act, 40 CFR Part 82, and any other regulations promulgated by EPA under Title VI for stratospheric ozone protection, except those units used as or with air pollution control equipment;
(17) laboratory activities:
    (A) bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments;
    (B) bench scale experimentation, chemical or physical analyses, training or instruction from nonprofit, non-production educational laboratories;
    (C) bench scale experimentation, chemical or physical analyses, training or instruction from hospital or health laboratories pursuant to the determination or diagnoses of illnesses; and
    (D) research and development laboratory activities that are not required to be permitted under Section .0500 of this Subchapter provided the activity produces no commercial product or feedstock material;
(18) combustion sources as defined in 15A NCAC 02Q .0703 except new or modified combustion sources permitted on or after July 10, 2010.

The DAQ shall review and recommend to the EMC no later than July 1, 2014, and every five years thereafter, whether the exemption shall remain in place or be removed.

(19) storage tanks used only to store:
    (A) inorganic liquids with a true vapor pressure less than 1.5 pounds per square inch absolute;
    (B) fuel oils, kerosene, diesel, crude oil, used motor oil, lubricants, cooling oils, natural gas, liquefied petroleum gas, or petroleum products with a true vapor pressure less than 1.5 pounds per square inch absolute;
(20) dispensing equipment used solely to dispense diesel fuel, kerosene, lubricants or cooling oils;
(21) portable solvent distillation systems that are exempted under 15A NCAC 02Q .0102(c)(1)(I).
(22) processes:
    (A) electric motor burn-out ovens with secondary combustion chambers or afterburners;
    (B) electric motor bake-on ovens;
    (C) burn-off ovens for paint-line hangers with afterburners;
    (D) hosiery knitting machines and associated lint screens, hosiery dryers and associated lint screens, and hosiery dyeing processes where bleach or solvent dyes are not used;
    (E) blade wood planers planing only green wood;
    (F) saw mills that saw no more than 2,000,000 board feet per year provided only green wood is sawed;
    (G) perchloroethylene drycleaning processes with 12-month rolling total consumption of:
        (i) less than 1366 gallons of perchloroethylene per year for facilities with dry-to-dry machines only;
        (ii) less than 1171 gallons of perchloroethylene per year for facilities with transfer machines only; or
        (iii) less than 1171 gallons of perchloroethylene per year for facilities with both transfer and dry-to-dry machines;

(23) wood furniture manufacturing operations as defined in 40 CFR 63.801(a) that comply with the emission limitations and other requirements of 40 CFR Part 63 Subpart JJ, provided that the terms of this exclusion shall not affect the authority of the Director under 15A NCAC 02Q .0712;

(24) wastewater treatment systems at pulp and paper mills for hydrogen sulfide and methyl mercaptan only;

(25) gasoline dispensing facilities or gasoline service station operations that comply with 15A NCAC 02D .0928 and .0932 and that receive gasoline from bulk gasoline plants or bulk gasoline terminals that comply with 15A NCAC 02D .0524, .0925, .0926, .0927, .0932, and .0933 via tank trucks that comply with 15A NCAC 02D .0932;

(26) the use of ethylene oxide as a sterilant in the production and subsequent storage of medical devices or the packaging and subsequent storage of medical devices for sale if the emissions from all new and existing sources at the facility described in 15A NCAC 02D .0538(d) are controlled at least to the degree described in 15A NCAC 02D .0538(d) and the facility complies with 15A NCAC 02D .0538(e) and (f);

(27) bulk gasoline plants, including the storage and handling of fuel oils, kerosenes, and jet fuels but excluding the storage and handling of other organic liquids, that comply with 15A NCAC 02D .0524, .0925, .0926, .0932, and .0933; unless the Director finds that a permit to emit toxic air pollutants is required under Paragraph (b) of this Rule or Rule .0712 of this Section for a particular bulk gasoline plant; or

(28) bulk gasoline terminals, including the storage and handling of fuel oils, kerosenes, and jet fuels but excluding the storage and handling of other organic liquids, that comply with 15A NCAC 02D .0524, .0925, .0927, .0932, and .0933 if the bulk gasoline terminal existed before November 1, 1992; unless:

(A) the Director finds that a permit to emit toxic air pollutants is required under Paragraph (b) of this Rule or Rule .0712 of this Section for a particular bulk gasoline terminal, or

(B) the owner or operator of the bulk gasoline terminal meets the requirements of 15A NCAC 02D .0927(i).

(b) Emissions from the activities identified in Subparagraphs (a)(25) through (a)(28) of this Rule shall be included in determining compliance with the toxic air pollutant requirements in this Section and shall be included in the permit if necessary to assure compliance. Emissions from the activities identified in Subparagraphs (a)(1) through (a)(24) of this Rule shall not be included in determining compliance with the toxic air pollutant requirements in this Section.

(c) The addition or modification of an activity identified in Paragraph (a) of this Rule shall not cause the source or facility to be evaluated for emissions of toxic air pollutants.

(d) Because an activity is exempted from being required to have a permit does not mean that the activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; April 1, 2005; July 1, 2002; July 1, 2000.

15A NCAC 02Q .0703 DEFINITIONS

For the purposes of this Section, the following definitions apply:

(1) "Actual rate of emissions" means:

(a) for existing sources:

(i) for toxic air pollutants with an annual averaging period, the average rate or rates at which the source actually emitted the pollutant during the two-year period preceding the date of the particular modification and that represents normal operation of the source. If this period does not represent normal operation, the Director may allow the use of a different, more representative, period.

(ii) for toxic air pollutants with a 24-hour or one-hour averaging period, the maximum actual emission rate at which the source actually emitted for the applicable averaging period during the two-year period preceding the date of the particular modification and that represents normal operation of the source. If this period does not represent

normal operation, the Director may require or allow the use of a different, more representative, period.

(b) for new or modified sources, the average rate or rates, determined for the applicable averaging period(s), that the proposed source will actually emit the pollutant as determined by engineering evaluation.

(2) "Applicable averaging period" means the averaging period for which an acceptable ambient limit has been established by the Commission and is listed in 15A NCAC 02D .1104.

(3) "Bioavailable chromate pigments" means the group of chromium (VI) compounds consisting of calcium chromate (CAS No.13765-19-0), calcium dichromate (CAS No. 14307-33-6), strontium chromate (CAS No. 7789-06-2), strontium dichromate_(CAS No. 7789-06-2), zinc chromate (CAS No. 13530-65-9), and zinc dichromate (CAS No. 7789-12-0).

(4) "CAS Number" means the Chemical Abstract Service registry number identifying a particular substance.

(5) "Chromium (VI) equivalent" means the molecular weight ratio of the chromium (VI) portion of a compound to the total molecular weight of the compound multiplied by the associated compound emission rate or concentration at the facility.

(6) "Combustion sources" means boilers, space heaters, process heaters, internal combustion engines, and combustion turbines, which burn only unadulterated wood or unadulterated fossil fuel. It does not include incinerators, waste combustors, kilns, dryers, or direct heat exchange industrial processes.

(7) "Creditable emissions" means actual decreased emissions that have not been previously relied on to comply with Subchapter 15A NCAC 02D. All creditable emissions shall be enforceable by permit condition.

(8) "Cresol" means o-cresol, p-cresol, m-cresol, or any combination of these compounds.

(9) "Evaluation" means:

(a) a determination that the emissions from the facility, including emissions from sources exempted by Rule .0702 (a) (24) through (27) of this Section, are less than the rate listed in Rule .0711 of this Section; or

(b) a determination of ambient air concentrations as described under 15A NCAC 02D .1106, including emissions from sources exempted by Rule .0702 (24) through (27) of this Section.

(10) "GACT" means any generally available control technology emission standard applied to an area source or facility pursuant to Section 112 of the federal Clean Air Act.

(11) "Hexane isomers except n-hexane" means 2-methyl pentane, 3-methyl pentane, 2,2-dimethyl butane, 2,3-dimethyl butane, or any combination of these compounds.

(12) "MACT" means any maximum achievable control technology emission standard applied to a source or facility pursuant to Section 112 federal Clean Air Act.

(13) "Maximum feasible control" means the maximum degree of reduction for each pollutant subject to regulation under this Section using the best technology that is available taking into account, on a case-by-case basis, human health, energy, environmental, and economic impacts and other costs.

(14) "Modification" means any physical changes or changes in the methods of operation that result in a net increase in emissions or ambient concentration of any pollutant listed in Rule .0711 of this Section or that result in the emission of any pollutant listed in Rule .0711 of this Section not previously emitted.

(15) "Net increase in emissions" means for a modification the sum of any increases in permitted allowable and decreases in the actual rates of emissions from the proposed modification from the sources at the facility for which the air permit application is being filed. If the net increase in emissions from the proposed modification is greater than zero, all other increases in permitted allowable and decreases in the actual rates of emissions at the facility within five years immediately preceding the filing of the air permit application for the proposed modification that are otherwise creditable emissions may be included.

(16) "Nickel, soluble compounds" means the soluble nickel salts of chloride ($NiCl_2$, CAS No. 7718-54-9), sulfate ($NiSO_4$, CAS No. 7786-81-4), and nitrate ($Ni(NO_3)_2$, CAS No. 13138-45-9).

(17) "Non-specific chromium (VI) compounds" means the group of compounds consisting of any chromium (VI) compounds not specified in this Section as a bioavailable chromate pigment or a soluble chromate compound.

(18) "Polychlorinated biphenyls" means any chlorinated biphenyl compound or mixture of chlorinated biphenyl compounds.

(19) "Pollution prevention plan" means a written description of current and projected plans to reduce, prevent, or minimize the generation of pollutants by source reduction and recycling and includes a site-wide assessment of pollution prevention opportunities at a facility that addresses sources of air pollution, water pollution, and solid and hazardous waste generation.

(20) "SIC" means standard industrial classification code.

(21) "Soluble chromate compounds" means the group of chromium (VI) compounds consisting of ammonium chromate (CAS No. 7788-98-9), ammonium dichromate (CAS No. 7789-09-5), chromic acid (CAS No. 7738-94-5), potassium chromate (CAS No. 7789-00-6), potassium dichromate (CAS No. 7778-50-9), sodium chromate (CAS No. 7775-11-3), and sodium dichromate (CAS No. 10588-01-9).

(22) "Toxic air pollutant" means any of those carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants listed in 15A NCAC 02D .1104.

(23) "Unadulterated wood" means wood that is not painted, varnished, stained, oiled, waxed, or otherwise coated or treated with any chemical. Plywood, particle board, and resinated wood are not unadulterated wood.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. April 1, 2001.

15A NCAC 02Q .0704 NEW FACILITIES

(a) This Rule applies only to facilities that begin construction after September 30, 1993.

(b) The owner or operator of a facility that:

(1) is required to have a permit because of applicability of a Section in Subchapter 2D of this Chapter other than Section .1100 of Subchapter 2D of this Chapter except for facilities whose emissions of toxic air pollutants result only from sources exempted under Rule .0102 of this Subchapter;

(2) has one or more sources subject to a MACT or GACT standard that has previously been promulgated under Section 112(d) of the federal Clean Air Act or established under Section 112(e) or 112(j) of the Clean Air Act; or

(3) has a standard industrial classification code that has previously been called under Rule .0705 of this Section;

shall have received a permit to emit toxic air pollutants before beginning construction, and shall comply with such permit when beginning operation.

(c) The owner or operator of a facility subject to this Rule who has not received a permit to emit toxic air pollutants under Paragraph (b) of this Rule shall apply for a permit to emit toxic air pollutants according to Paragraph (b) or (c) of Rule .0705 of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0705 EXISTING FACILITIES AND SIC CALLS

(a) This Rule applies only to facilities that were in operation or permitted to construct before October 1, 1993 and new facilities subject to Rule .0704(c) of this Section.

(b) For sources at a facility subject to a MACT or GACT standard, or that may be subject to a MACT or GACT standard based on studies required by Section 112(n)(1) of the Clean Air Act, 42 U.S.C. Section 7412(n)(1), the owner or operator of the facility shall comply with 15A NCAC 2D .1100 as follows:

(1) When the owner or operator submits a permit application to comply with the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility, he shall also

submit a permit application to comply with 15A NCAC 2D .1100. The facility shall comply with 15A NCAC 2D .1100 by the same deadline that it is required to comply with the last MACT or GACT.

(2) If the owner or operator does not have to submit a permit application to comply with the last MACT or GACT, excluding the MACT or GACT for combustion sources, he shall submit a permit application to comply with 15A NCAC 2D .1100 within six months after the promulgation of the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility or by January 1, 1999, whichever is later. The facility shall comply with 15A NCAC 2D .1100 by the same deadline that it is required to comply with the last MACT or GACT.

(3) If the owner or operator submitted a permit application for the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility before July 1, 1998, he shall submit a permit application to comply with 15A NCAC 2D .1100 by January 1, 1999. The facility shall comply with 15A NCAC 2D .1100 within three years from the date that the permit is issued.

The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding those sources exempt from evaluation under Rule .0702 of this Section. The owner or operator of a facility whose actual rate of emissions from all sources are not greater than the toxic permitting emissions rates listed in Rule .0711 of this Section does not have to file a permit application to comply with 15A NCAC 2D .1100. He shall provide documentation that the facility=s emissions of toxic air pollutants are below the levels in Rule .0711 of this Section if the Director requests this documentation.

(c) For facilities that will not be subject to a MACT or GACT standard, or that will be subject only to a MACT or GACT standard for unadulterated fuel combustion sources, the owner or operator of the facility shall have 180 days to apply for a permit or permit modification for the emissions of toxic air pollutants after receiving written notification from the Director that such permit or permit modification is required. The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section. Such facilities shall comply with 15A NCAC 2D .1100 within three years from the date that the permit is issued. The Director shall notify facilities subject to this Paragraph by calling for permit applications based on standard industrial classifications, that is, the Director shall call at one time for permits for all facilities statewide that have the same four-digit standard industrial classification code, except those facilities in certified local air pollution control agency areas. (Local air pollution control agencies shall call the standard industrial classification code within their jurisdiction when the Director calls that code. A local air pollution control agency may call a particular standard industrial classification code before the Director calls that code if the Commission approves the call by the local air pollution control agency. In deciding if it shall grant permission to a local air pollution control agency to call a particular standard industrial classification code before the Director calls that code, the Commission shall consider if the call is necessary to protect human health or to allow the local program to better implement these Rules in its jurisdiction.) Facilities with sources that will be subject to MACT that receive an SIC call shall notify the Director and shall comply with 15 NCAC 2D .1100 in accordance with Paragraph (b) of this Rule. All sources, regardless of their standard industrial classification code, excluding sources exempt from evaluation in Rule .0702 of this Section, at the facility shall be included in the call for permit applications. When the Environmental Protection Agency (EPA) promulgates MACT under Section 112(e) of the federal Clean Air Act, excluding cooling towers, the Director shall notify the owners or operators of facilities in the standard industrial classification that best corresponds to the MACT category that they are required to submit a permit application for the emissions of toxic air pollutants from their facilities. If the EPA fails to promulgate a MACT as scheduled, the Director shall notify the owners or operators of facilities 18 months after the missed promulgation date that they are required to submit a permit application for the emissions of toxic air pollutants from their facilities. The owner or operator of a facility whose actual rate of emissions from all sources are not greater than the toxic permitting emissions rates listed in Rule .0711 of this Section does not have to file a permit application to comply with 15A NCAC 2D .1100. He shall provide documentation that the facility=s emissions of toxic air pollutants are below the levels in Rule .0711 of this Section if the Director requests this documentation. The Director may request this documentation if he finds that the facility's potential emissions of toxic air pollutants are above the levels in Rule .0711 of this Section.

(d) The owner or operator of a facility may request a permit to emit toxic air pollutants any time before such application is required. The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0706 MODIFICATIONS

(a) For modification of any facility undertaken after September 30, 1993, that:

(1) is required to have a permit because of applicability of a Section, other than Section .1100, in Subchapter 02D of this Chapter except for facilities whose emissions of toxic air pollutants result only from insignificant activities as defined in 15A NCAC 02Q .0103(20) or sources exempted under Rule .0102 of this Subchapter;

(2) has one or more sources subject to a MACT or GACT standard that has previously been promulgated under Section 112(d) of the federal Clean Air Act or established under Section 112(e) or 112(j) of the Clean Air Act; or

(3) has a standard industrial classification code that has previously been called under Rule .0705 of this Section;

the owner or operator of the facility shall comply with Paragraphs (b) and (c) of this Rule.

(b) The owner or operator of the facility shall submit a permit application to comply with 15A NCAC 02D .1100 if the modification results in:

(1) a net increase in emissions or ambient concentration of any toxic air pollutant that the facility was emitting before the modification; or

(2) emissions of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in Rule .0711 of this Section.

(c) The permit application filed pursuant to this Rule shall include an evaluation for all toxic air pollutants covered under 15A NCAC 02D .1104 for which there is:

(1) a net increase in emissions of any toxic air pollutant that the facility was emitting before the modification; and

(2) emission of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in Rule .0711 of this Section.

All sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section, emitting these toxic air pollutants shall be included in the evaluation. Notwithstanding 02Q .0702(a)(18), on and after July 10, 2010, an evaluation of a modification to a combustion source shall also include emissions from all permitted combustion sources as defined in 02Q .0703. A permit application filed pursuant to Subparagraph (b)(2) of this Rule shall include an evaluation for all toxic air pollutants identified by the Director as causing an acceptable ambient level in 15A NCAC 02D .1104 to be exceeded.

(d) If a source is included in an air toxic evaluation, but is not the source that is being added or modified at the facility, and if the emissions from this source must be reduced in order for the facility to comply with the rules in this Section and 15A NCAC 02D .1100, then the emissions from this source shall be reduced by the time that the new or modified source begins operating such that the facility shall be in compliance with the rules in this Section and 15A NCAC 02D .1100.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, C. 168, S. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; December 1, 2005; April 1, 2005.

15A NCAC 02Q .0707 PREVIOUSLY PERMITTED FACILITIES

Any facility with a permit that contains a restriction based on the evaluation of a source exempted under Rule .0702 of this Section may request a permit modification to adjust the restriction by removing from consideration the portion of emissions resulting from the exempt source unless the Director determines that the removal of the exempt source will result in an acceptable ambient level in 15A NCAC 2D .1104 being exceeded. The Director shall modify the permit to remove the applicability of the air toxic rules to the exempt source. No fee shall be charged solely for such permit modification.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;

Eff. July 1, 1998.

15A NCAC 02Q .0708 COMPLIANCE SCHEDULE FOR PREVIOUSLY UNKNOWN TOXIC AIR POLLUTANT EMISSIONS

(a) The owner or operator of a facility permitted to emit toxic air pollutants shall submit a permit application within six months after the owner or operator learns of an emission of a previously unknown toxic air pollutant from a permitted source that would have been included in the permit when it was issued. The application shall include the information required by Paragraph (b) of this Rule.

(b) When an application to revise a permit is submitted under this Rule, the owner or operator shall in addition to the application, submit to the Director:

(1) an evaluation for the pollutant according to this Section and 15 NCAC 2D .1100 that demonstrates compliance with the acceptable ambient level in 15A NCAC 2D .1104; or

(2) a compliance schedule containing the information required under Paragraph (c) of this Rule for the proposed modifications to the facility required to comply with the acceptable ambient level according to this Section and Section 15A NCAC 2Q .1100.

(c) The compliance schedule required under Subparagraph (b)(2) of this Rule shall contain the following increments of progress as applicable:

(1) a date by which contracts for emission control and process equipment shall be awarded or orders shall be issued for the purchase of component parts;

(2) a date by which on-site construction or installation of the emission control and process equipment shall begin;

(3) a date by which on-site construction or installation of the emission control and process equipment shall be completed; and

(4) the date by which final compliance shall be achieved.

(d) Final compliance shall be achieved no later than:

(1) six months after the permit modification or renewal is issued if construction or installation of emission control or process equipment is not required;

(2) one year after the permit modification or renewal is issued if construction or installation of emission control or process equipment is required; or

(3) the time that is normally required to construct a stack or install other dispersion enhancement modifications but not more than one year after the permit modification or renewal is issued.

(e) The owner or operator shall certify to the Director within 10 days after each applicable deadline for each increment of progress required under Paragraph (c) of this Rule whether the required increment of progress has been met.

History Note: *Authority G.S. 143-215.3(a)(1); 43-215.107(a)(3),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. July 1, 1998.*

15A NCAC 02Q .0709 DEMONSTRATIONS

(a) Demonstrations. The owner or operator of a source who is applying for a permit or permit modification to emit toxic air pollutants shall:

(1) demonstrate to the satisfaction of the Director through dispersion modeling that the emissions of toxic air pollutants from the facility will not cause any acceptable ambient level listed in 15A NCAC 02D .1104 to be exceeded beyond the premises (adjacent property boundary); or

(2) demonstrate to the satisfaction of the Commission or its delegate that the ambient concentration beyond the premises (adjacent property boundary) for the subject toxic air pollutant shall not adversely affect human health (e.g., a risk assessment specific to the facility) though the concentration is higher than the acceptable ambient level in 15A NCAC 02D .1104 by providing one of the following demonstrations:

(A) the area where the ambient concentrations are expected to exceed the acceptable ambient levels in 15A NCAC 02D .1104 is not inhabitable or occupied for the duration of the averaging time of the pollutant of concern, or

(B) new toxicological data that show that the acceptable ambient level in 15A NCAC 02D .1104 for the pollutant of concern is too low and the facility's ambient impact is below the level indicated by the new toxicological data.

(b) Technical Infeasibility and Economic Hardship. This Paragraph shall not apply to any incinerator covered under 15A NCAC 02D .1200. The owner or operator of any source constructed before May 1, 1990, or a perchloroethylene dry cleaning facility subject to a GACT standard under 40 CFR 63.320 through 63.325, or a combustion source as defined in Rule .0703 of this Section permitted before July 10, 2010, who cannot supply a demonstration described in Paragraph (a) of this Rule shall:

(1) demonstrate to the satisfaction of the Commission or its delegate that complying with the guidelines in 15A NCAC 02D .1104 is technically infeasible (the technology necessary to reduce emissions to a level to prevent the acceptable ambient levels in 15A NCAC 02D .1104 from being exceeded does not exist); or

(2) demonstrate to the satisfaction of the Commission or its delegate that complying with the guidelines in 15A NCAC 02D .1104 would result in serious economic hardship. (In deciding if a serious economic hardship exists, the Commission or its delegate shall consider market impact; impacts on local, regional and state economy; risk of closure; capital cost of compliance; annual incremental compliance cost; and environmental and health impacts.)

If the owner or operator makes a demonstration to the satisfaction of the Commission or its delegate pursuant to Subparagraphs (1) or (2) of this Paragraph, the Director shall require the owner or operator of the source to apply maximum feasible control. Maximum feasible control shall be in place and operating within three years from the date that the permit is issued for the maximum feasible control.

(c) Pollution Prevention Plan. The owner or operator of any facility using the provisions of Part (a)(2)(A) or Paragraph (b) of this Rule shall develop and implement a pollution prevention plan consisting of the following minimum elements:

(1) statement of corporate and facility commitment to pollution prevention;

(2) identification of current and past pollution prevention activities;

(3) timeline and strategy for implementation;

(4) description of ongoing and planned employee education efforts;

(5) identification of internal pollution prevention goal selected by the facility and expressed in either qualitative or quantitative terms.

The facility shall submit along with the permit application the pollution prevention plan. The pollution prevention plan shall be maintained on site. A progress report on implementation of the plan shall be prepared by the facility annually and be made available to Division personnel for review upon request.

(d) Modeling Demonstration. If the owner or operator of a facility demonstrates by modeling that no toxic air pollutant emitted from the facility exceeds the acceptable ambient level values given in 15A NCAC 02D .1104 beyond the facility's premises, further modeling demonstration is not required with the permit application. However, the Commission may still require more stringent emission levels according to its analysis under 15A NCAC 02D .1107.

(e) Change in Acceptable Ambient Level. When an acceptable ambient level for a toxic air pollutant in 15A NCAC 02D .1104 is changed, any condition that has previously been put in a permit to protect the previous acceptable ambient level for that toxic air pollutant shall not be changed until:

(1) The permit is renewed, at which time the owner or operator of the facility shall submit an air toxic evaluation showing that the new acceptable ambient level will not be exceeded (If additional time is needed to bring the facility into compliance with the new acceptable ambient level, the owner or operator shall negotiate a compliance schedule with the Director. The compliance schedule shall be written into the facility's permit and final compliance shall not exceed two years from the effective date of the change in the acceptable ambient level.): or

(2) The owner or operator of the facility requests that the condition be changed and submits along with that request an air toxic evaluation showing that the new acceptable ambient level shall not be exceeded.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; February 1, 2005.

15A NCAC 02Q .0710 PUBLIC NOTICE AND OPPORTUNITY FOR PUBLIC HEARING

(a) If the owner or operator of a facility chooses to make a demonstration pursuant to Rule .0709 (a)(2) or (b) of this Section, the Commission or its delegate shall approve or disapprove the permit after a public notice with an opportunity for a public hearing.

(b) The public notice shall be given by publication in a newspaper of general circulation in the area where the facility is located and shall be mailed to persons who are on the Division's mailing list for air quality permit notices.

(c) The public notice shall identify:

(1) the affected facility;

(2) the name and address of the permittee;

(3) the name and address of the person to whom to send comments and requests for public hearing;

(4) the name, address, and telephone number of a Divisional staff person from whom interested persons may obtain additional information, including copies of the draft permit, the application, compliance plan, pollution prevention plan, monitoring and compliance reports, all other relevant supporting materials, and all other materials available to the Division that are relevant to the permit decision;

(5) the activity or activities involved in the permit action;

(6) any emissions change involved in any permit modification;

(7) a brief description of the public comment procedures;

(8) the procedures to follow to request a public hearing unless a public hearing has already been scheduled; and

(9) the time and place of any hearing that has already been scheduled.

(d) The notice shall allow at least 30 days for public comments.

(e) If the Director determines that significant public interest exists or that the public interest will be served, the Director shall require a pubic hearing to be held on a draft permit. Notice of a public hearing shall be given at least 30 days before the public hearing.

(f) The Director shall make available for public inspection in at least one location in the region affected, the information submitted by the permit applicant and the Division=s analysis of that application.

(g) Any persons requesting copies of material identified in Subparagraph (b)(4) of this Rule shall pay ten cents ($0.10) a page for each page copied. Confidential material shall be handled in accordance with Rule .0107 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0711 EMISSION RATES REQUIRING A PERMIT

(a) A permit to emit toxic air pollutants is required for any facility whose actual (or permitted if higher) rate of emissions from all sources are greater than any one of the following toxic air pollutant permitting emissions rates:

Pollutant (CAS Number)	Carcinogens lb/yr	Chronic Toxicants lb/day	Acute Systemic Toxicants lb/hr	Acute Irritants lb/hr
acetaldehyde (75-07-0)				6.8
acetic acid (64-19-7)				0.96
acrolein (107-02-8)				0.02
acrylonitrile (107-13-1)		0.4	0.22	
ammonia (7664-41-7)				0.68
aniline (62-53-3)			0.25	
arsenic and inorganic arsenic compounds	0.016			
asbestos (1332-21-4)	1.9×10^{-6}			
aziridine (151-56-4)		0.13		
benzene (71-43-2)	8.1			
benzidine and salts (92-87-5)	0.0010			

benzo(a)pyrene (50-32-8)	2.2			
benzyl chloride (100-44-7)			0.13	
beryllium (7440-41-7)	0.28			
beryllium chloride (7787-47-5)	0.28			
beryllium fluoride (7787-49-7)	0.28			
beryllium nitrate (13597-99-4)	0.28			
bioavailable chromate pigments, as chromium (VI) equivalent	0.0056			
bis-chloromethyl ether (542-88-1)	0.025			
bromine (7726-95-6)				0.052
1,3-butadiene (106-99-0)	11			
cadmium (7440-43-9)	0.37			
cadmium acetate (543-90-8)	0.37			
cadmium bromide (7789-42-6)	0.37			
carbon disulfide (75-15-0)		3.9		
carbon tetrachloride (56-23-5)	460			
chlorine (7782-50-5)		0.79		0.23
chlorobenzene (108-90-7)		46		
chloroform (67-66-3)	290			
chloroprene (126-99-8)		9.2	0.89	
cresol (1319-77-3)			0.56	
p-dichlorobenzene (106-46-7)				16.8
dichlorodifluoromethane (75-71-8)		5200		
dichlorofluoromethane (75-43-4)		10		
di(2-ethylhexyl)phthalate (117-81-7)		0.63		
dimethyl sulfate (77-78-1)		0.063		
1,4-dioxane (123-91-1)		12		
epichlorohydrin (106-89-8)	5600			
ethyl acetate (141-78-6)			36	
ethylenediamine (107-15-3)		6.3	0.64	
ethylene dibromide (106-93-4)	27			
ethylene dichloride (107-06-2)	260			
ethylene glycol monoethyl ether (110-80-5)		2.5	0.48	
ethylene oxide (75-21-8)	1.8			
ethyl mercaptan (75-08-1)			0.025	
fluorides		0.34	0.064	
formaldehyde (50-00-0)				0.04
hexachlorocyclopentadiene (77-47-4)		0.013	0.0025	
hexachlorodibenzo-p-dioxin (57653- 85-7)	0.0051			
n-hexane (110-54-3)		23		
hexane isomers except n-hexane				92
hydrazine (302-01-2)		0.013		
hydrogen chloride (7647-01-0)				0.18
hydrogen cyanide (74-90-8)		2.9	0.28	
hydrogen fluoride (7664-39-3)		0.63		0.064
hydrogen sulfide (7783-06-4)		1.7		
maleic anhydride (108-31-6)		0.25	0.025	
manganese and compounds		0.63		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		0.013		
manganese tetroxide (1317-35-7)		0.13		

mercury, alkyl		0.0013		
mercury, aryl and inorganic compounds		0.013		
mercury, vapor (7439-97-6)		0.013		
methyl chloroform (71-55-6)		250		64
methylene chloride (75-09-2)	1600		0.39	
methyl ethyl ketone (78-93-3)		78		22.4
methyl isobutyl ketone (108-10-1)		52		7.6
methyl mercaptan (74-93-1)			0.013	
nickel carbonyl (13463-39-3)		0.013		
nickel metal (7440-02-0)		0.13		
nickel, soluble compounds, as nickel		0.013		
nickel subsulfide (12035-72-2)	0.14			
nitric acid (7697-37-2)				0.256
nitrobenzene (98-95-3)		1.3	0.13	
n-nitrosodimethylamine (62-75-9)	3.4			
non-specific chromium (VI) compounds, as chromium (VI) equivalent	0.0056			
pentachlorophenol (87-86-5)		0.063	0.0064	
perchloroethylene (127-18-4)	13000			
phenol (108-95-2)			0.24	
phosgene (75-44-5)		0.052		
phosphine (7803-51-2)				0.032
polychlorinated biphenyls (1336-36- 3)	5.6			
soluble chromate compounds, as chromium (VI) equivalent		0.013		
styrene (100-42-5)			2.7	
sulfuric acid (7664-93-9)		0.25	0.025	
tetrachlorodibenzo-p-dioxin (1746- 01-6)	0.00020			
1,1,1,2-tetrachloro-2,2,- difluoroethane (76-11-9)		1100		
1,1,2,2-tetrachloro-1,2- difluoroethane (76-12-0)		1100		
1,1,2,2-tetrachloroethane (79-34-5)	430			
toluene (108-88-3)		98		14.4
toluene diisocyanate,2,4-(584-84-9) and 2,6- (91-08-7) isomers		0.003		
trichloroethylene (79-01-6)	4000			
trichlorofluoromethane (75-69-4)			140	
1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)				240
vinyl chloride (75-01-4)	26			
vinylidene chloride (75-35-4)		2.5		
xylene (1330-20-7)		57		16.4

(b) For the following pollutants, the highest emissions occurring for any 15-minute period shall be multiplied by four and the product shall be compared to the value in Paragraph (a). These pollutants are:

(1) acetaldehyde (75-07-0);
(2) acetic acid (64-19-7);
(3) acrolein (107-02-8);
(4) ammonia (7664-41-7);
(5) bromine (7726-95-6);
(6) chlorine (7782-50-5);

(7) formaldehyde (50-00-0);
(8) hydrogen chloride (7647-01-0);
(9) hydrogen fluoride (7664-39-3); and
(10) nitric acid (7697-37-2).

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. January 1, 2010; June 1, 2008; April 1, 2005; February 1, 2005; April 1, 2001.

15A NCAC 02Q .0712 CALLS BY THE DIRECTOR

Notwithstanding any other provision of this Section or 15A NCAC 2D .1104, upon a written finding that a source or facility emitting toxic air pollutants presents an unacceptable risk to human health based on the acceptable ambient levels in 15A NCAC 2D .1104 or epidemiology studies, the Director may require the owner or operator of the source or facility to submit a permit application to comply with 15A NCAC 2D .1100 for any or all of the toxic air pollutants emitted from the facility.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0713 POLLUTANTS WITH OTHERWISE APPLICABLE FEDERAL STANDARDS OR REQUIREMENTS

(a) This Rule applies to the establishment of emission limitations or any other requirements pursuant to the requirements of this Section or 15A NCAC 2D .1100 for which a standard or requirement has been promulgated under Section 112 of the federal Clean Air Act including those contained in 15A NCAC 2D .1110 and .1111.

(b) For each facility subject to emission standards or requirements under Section 112 of the federal Clean Air Act, permits issued or revised according to Section .0500 of this Subchapter shall contain specific conditions that:

(1) reflect applicability criteria no less stringent than those in the otherwise applicable federal standards or requirements;
(2) require levels of control for each affected facility and source no less stringent than those contained in the otherwise applicable federal standards or requirements;
(3) require compliance and enforcement measures for each facility and source no less stringent than those in the otherwise applicable federal standards or requirements;
(4) express levels of control, compliance, and enforcement measures in the same form and units of measure as the otherwise applicable federal standards or requirements; and
(5) assure compliance by each affected facility no later than would be required by the otherwise applicable federal standard or requirement.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. July 1, 1998.

15A NCAC 02Q .0714 WASTEWATER TREATMENT SYSTEMS AT PULP AND PAPER MILLS

(a) This Rule applies to wastewater collection and treatment systems at pulp and paper mills that are exempted under Rule .0702 of this Section.

(b) Except for facilities that employ activated sludge type wastewater treatment systems, the owner or operator of a wastewater collection and treatment system covered under this Rule shall:

(1) submit to the Director estimates of hydrogen sulfide, total reduced sulfur, and methyl mercaptan emissions from wastewater collection and treatment systems and components using estimation methods or factors developed through industry testing and analytical studies and approved by the Director by November 1, 2005. In deciding approval of the estimation methods and factors, the Director shall

consider field validation procedures including the number of valid samples taken, when measurements are made, laboratory and field measurement quality assurance procedures, and other information necessary in producing accurate and precise measurements. The Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by January 1, 2006;

(2) using the emission estimates developed under Subparagraph (b)(1), perform air dispersion modeling of all hydrogen sulfide emission sources, including all emissions associated with the wastewater collection and treatment system, as described in 15A NCAC 02D .1106 (a) through (i). If the modeling analysis demonstrates that predicted concentrations of hydrogen sulfide are below the acceptable ambient levels outlined in 15A NCAC 02D .1104, no further plan development, measurement or monitoring action is required to maintain the exemption provided by this Rule. The results of the favorable modeling demonstration must be submitted to the Director by July 1, 2006. The Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by September 1, 2006;

(3) if the dispersion modeling performed under Subparagraph (b)(2) of this rule shows that the acceptable ambient level for hydrogen sulfide is exceeded, submit to the Director, on or before September 30, 2006, for approval by the Director, an ambient air quality monitoring plan designed to assess actual ambient levels of hydrogen sulfide typical of pulp and paper mill operations. The monitoring plan may be undertaken at each of the individual mill sites or, at the option of the affected mill sites, it may be undertaken at a single North Carolina mill site that the Director determines to be representative of the industry. The Director shall complete review and make the decision regarding approval of the monitoring plan by December 31, 2006;

(4) by June 30, 2007, implement the ambient monitoring study plan required in Subparagraph (b)(3) to determine the actual ambient levels of hydrogen sulfide near pulp and paper mills;

(5) complete the ambient hydrogen sulfide monitoring plan and report the results to the Director and to the Chairperson of the Environmental Management Commission by December 31, 2008 and the Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by February 28, 2009 for further consideration.

(c) To perform ambient monitoring for hydrogen sulfide under Subparagraph (b)(3) of this Rule, the owner or operator shall use monitoring methods and procedures approved by the Director. The Director shall approve the monitoring methods and procedures if he determines that they are an appropriate measure of ambient air concentrations of hydrogen sulfide.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143B-282;*
Eff. April 1, 2005.

SECTION .1100 - CONTROL OF TOXIC AIR POLLUTANTS

15A NCAC 02D .1101 PURPOSE

This Section sets forth the rules for the control of toxic air pollutants to protect human health.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(1),(3),(4),(5); 143B-282; S.L. 1989,.c. 168, s. 45; Eff. May 1, 1990.*

15A NCAC 02D .1102 APPLICABILITY

(a) The toxic air pollutant rules in this Section apply to all facilities that emit a toxic air pollutant that are required to have a permit under 15A NCAC 2Q .0700.

(b) Sources at facilities subject to this Section shall comply with the requirements of this Section as well as with any applicable requirements in Sections .0500, .0900, and .1200 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(1),(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. May 1, 1990;*
Amended Eff. July 1, 1998; December 1, 1991.

15A NCAC 02D .1103 DEFINITION

For the purpose of this Section, the following definitions apply:

(1) "Asbestos" means asbestos fibers as defined in 40 CFR 61.141.

(2) "Bioavailable chromate pigments" means the group of chromium (VI) compounds consisting of calcium chromate (CAS No.13765-19-0), calcium dichromate (CAS No. 14307-33-6), strontium chromate (CAS No. 7789-06-2), strontium dichromate (CAS No. 7789-06-2), zinc chromate (CAS No. 13530-65-9), and zinc dichromate (CAS No. 7789-12-0).

(3) "CAS Number" means the Chemical Abstract Service registry number identifying a particular substance.

(4) "Chromium (VI) equivalent" means the molecular weight ratio of the chromium (VI) portion of a compound to the total molecular weight of the compound multiplied by the associated compound emission rate or concentration at the facility.

(5) "Non-specific chromium (VI) compounds" means the group of compounds consisting of any chromium (VI) compounds not specified in this Section as a bioavailable chromate pigment or a soluble chromate compound.

(6) "Cresol" means o-cresol, p-cresol, m-cresol or any combination of these compounds.

(7) "GACT" means any generally available control technology emission standard applied to an area source or facility pursuant to Section 112 of the federal Clean Air Act.

(8) "Hexane isomers except n-hexane" means 2-methyl pentane, 3-methyl pentane, 2,2-dimethyl butane, 2,3-dimethyl butane, or any combination of these compounds.

(9) "MACT" means any maximum achievable control technology emission standard applied to a source or facility pursuant to Section 112 of the federal Clean Air Act.

(10) "Nickel, soluble compounds" means the soluble nickel salts of chloride ($NiCl_2$, CAS No. 7718-54-9), sulfate ($NiSO_4$, CAS No. 7786-81-4), and nitrate ($Ni(NO_3)_2$, CAS No. 13138-45-9).

(11) "Polychlorinated biphenyls" means any chlorinated biphenyl compound or mixture of chlorinated biphenyl compounds.

(12) "Soluble chromate compounds" means the group of chromium (VI) compounds consisting of ammonium chromate (CAS No. 7788-98-9), ammonium dichromate (CAS No. 7789-09-5), chromic acid (CAS No. 7738-94-5), potassium chromate (CAS No. 7789-00-6), potassium dichromate (CAS No. 7778-50-9), sodium chromate (CAS No. 7775-11-3), and sodium dichromate (CAS No. 10588-01-9).

(13) "Toxic air pollutant" means any of those carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants listed in Rule .1104 of this Section.

History Note: *Authority G.S. 143-213; 143-215.3(a)(1); 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. May 1, 1990;
Amended Eff. April 1, 2001; July 1, 1998.

15A NCAC 02D .1104 TOXIC AIR POLLUTANT GUIDELINES

A facility shall not emit any of the following toxic air pollutants in such quantities that may cause or contribute beyond the premises (adjacent property boundary) to any significant ambient air concentration that may adversely affect human health. In determining these significant ambient air concentrations, the Division shall be guided by the following list of acceptable ambient levels in milligrams per cubic meter at 77° F (25° C) and 29.92 inches (760 mm) of mercury pressure (except for asbestos):

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
acetaldehyde (75-07-0)				27
acetic acid (64-19-7)				3.7
acrolein (107-02-8)				0.08
acrylonitrile (107-13-1)		0.03	1	
ammonia (7664-41-7)				2.7
aniline (62-53-3)			1	
arsenic and inorganic arsenic compounds	2.3×10^{-7}			
asbestos (1332-21-4)	2.8×10^{-11} fibers/ml			
aziridine (151-56-4)		0.006		
benzene (71-43-2)	1.2×10^{-4}			
benzidine and salts (92-87-5)	1.5×10^{-8}			
benzo(a)pyrene (50-32-8)	3.3×10^{-5}			
benzyl chloride (100-44-7)			0.5	
beryllium (7440-41-7)	4.1×10^{-6}			
beryllium chloride (7787-47-5)	4.1×10^{-6}			
beryllium fluoride (7787-49-7)	4.1×10^{-6}			
beryllium nitrate (13597-99-4)	4.1×10^{-6}			
bioavailable chromate pigments, as chromium (VI) equivalent	8.3×10^{-8}			
bis-chloromethyl ether (542-88-1)	3.7×10^{-7}			
bromine (7726-95-6)				0.2
1,3-butadiene (106-99-0)	4.4×10^{-4}			
cadmium (7440-43-9)	5.5×10^{-6}			
cadmium acetate (543-90-8)	5.5×10^{-6}			
cadmium bromide (7789-42-6)	5.5×10^{-6}			
carbon disulfide (75-15-0)		0.186		
carbon tetrachloride (56-23-5)	6.7×10^{-3}			
chlorine (7782-50-5)		0.0375		0.9
chlorobenzene (108-90-7)		2.2		
chloroform (67-66-3)	4.3×10^{-3}			
chloroprene (126-99-8)		0.44	3.5	
cresol (1319-77-3)			2.2	
p-dichlorobenzene (106-46-7)				66

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
dichlorodifluoromethane (75-71-8)		248		
dichlorofluoromethane (75-43-4)		0.5		
di(2-ethylhexyl)phthalate (117-81-7)		0.03		
dimethyl sulfate (77-78-1)		0.003		
1,4-dioxane (123-91-1)		0.56		
epichlorohydrin (106-89-8)	8.3×10^{-2}			
ethyl acetate (141-78-6)			140	
ethylenediamine (107-15-3)		0.3	2.5	
ethylene dibromide (106-93-4)	4.0×10^{-4}			
ethylene dichloride (107-06-2)	3.8×10^{-3}			
ethylene glycol monoethyl ether (110-80-5)		0.12	1.9	
ethylene oxide (75-21-8)	2.7×10^{-5}			
ethyl mercaptan (75-08-1)			0.1	
fluorides		0.016	0.25	
formaldehyde (50-00-0)				0.15
hexachlorocyclopentadiene (77-47-4)		0.0006	0.01	
hexachlorodibenzo-p-dioxin (57653-85-7)	7.6×10^{-8}			
n-hexane (110-54-3)		1.1		
hexane isomers except n-hexane				360
hydrazine (302-01-2)		0.0006		
hydrogen chloride (7647-01-0)				0.7
hydrogen cyanide (74-90-8)		0.14	1.1	
hydrogen fluoride (7664-39-3)		0.03		0.25
hydrogen sulfide (7783-06-4)		0.12		
maleic anhydride (108-31-6)		0.012	0.1	
manganese and compounds		0.031		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		0.0006		
manganese tetroxide (1317-35-7)		0.0062		
mercury, alkyl		0.00006		
mercury, aryl and inorganic compounds		0.0006		
mercury, vapor (7439-97-6)		0.0006		
methyl chloroform (71-55-6)		12		245
methylene chloride (75-09-2)	2.4×10^{-2}		1.7	
methyl ethyl ketone (78-93-3)		3.7		88.5
methyl isobutyl ketone (108-10-1)		2.56		30
methyl mercaptan (74-93-1)			0.05	
nickel carbonyl (13463-39-3)		0.0006		
nickel metal (7440-02-0)		0.006		
nickel, soluble compounds, as nickel		0.0006		
nickel subsulfide (12035-72-2)	2.1×10^{-6}			
nitric acid (7697-37-2)				1
nitrobenzene (98-95-3)		0.06	0.5	

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
n-nitrosodimethylamine (62-75-9)	5.0×10^{-5}			
non-specific chromium (VI) compounds, as chromium (VI) equivalent	8.3×10^{-8}			
pentachlorophenol (87-86-5)		0.003	0.025	
perchloroethylene (127-18-4)	1.9×10^{-1}			
phenol (108-95-2)			0.95	
phosgene (75-44-5)		0.0025		
phosphine (7803-51-2)				0.13
polychlorinated biphenyls (1336-36-3)	8.3×10^{-5}			
soluble chromate compounds, as chromium (VI) equivalent		6.2×10^{-4}		
styrene (100-42-5)			10.6	
sulfuric acid (7664-93-9)		0.012	0.1	
tetrachlorodibenzo-p-dioxin (1746-01-6)	3.0×10^{-9}			
1,1,1,2-tetrachloro-2,2,-difluoroethane (76-11-9)		52		
1,1,2,2-tetrachloro-1,2-difluoroethane (76-12-0)		52		
1,1,2,2-tetrachloroethane (79-34-5)	6.3×10^{-3}			
toluene (108-88-3)		4.7		56
toluene diisocyanate, 2,4- (584-84-9) and 2,6- (91-08-7) isomers		0.0002		
trichloroethylene (79-01-6)	5.9×10^{-2}			
trichlorofluoromethane (75-69-4)			560	
1,1,2-trichloro-1,2,2- trifluoroethane (76-13-1)				950
vinyl chloride (75-01-4)	3.8×10^{-4}			
vinylidene chloride (75-35-4)		0.12		
xylene (1330-20-7)		2.7		65

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. May 1, 1990;*
Amended Eff. September 1, 1992; March 1, 1992;
Temporary Amendment Eff. July 20, 1997;
Amended Eff. March 1, 2010; June 1, 2008; April 1, 2005; April 1, 2001; July 1, 1998.

15A NCAC 02D .1105 FACILITY REPORTING, RECORDKEEPING

The Director may require, according to Section .0600 of this Subchapter, the owner or operator of a source subject to this Section to monitor emissions of toxic air pollutants, to maintain records of these emissions, and to report these emissions. The owner or operator of any toxic air pollutant emission source subject to the requirements of this Section shall comply with the monitoring, recordkeeping, and reporting requirements in Section .0600 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(4),(5); 143B-282;*

Eff. May 1, 1990;
Amended Eff. April 1, 1999; October 1, 1991.

15A NCAC 02D .1106 DETERMINATION OF AMBIENT AIR CONCENTRATION

(a) Modeling shall not be used for enforcement. Modeling shall be used to determine process operational and air pollution control parameters and emission rates for toxic air pollutants to place in the air quality permit for that facility that will prevent any of the acceptable ambient levels in Rule .1104 of this Section from being exceeded, with such exceptions as may be allowed under 15A NCAC 2Q .0700. Enforcing these permit stipulations and conditions shall be the mechanism used to ensure that the requirements of Rule .1104 of this Section, with such exceptions as may be allowed by 15A NCAC 2Q .0700, are met.

(b) The owner or operator of the facility may request the Division to perform a modeling analysis of the facility or provide the analysis himself. If the owner or operator of the facility requests the Division to perform the modeling analysis, he shall provide emissions rates, stack parameters, and other information that the Division needs to do the modeling. The data that the owner or operator of the facility provides the Division to use in the model or in deriving the data used in the model shall be the process, operational and air pollution control equipment parameters and emission rates that will be contained in the facility=s permit. If the Division=s initial review of the modeling request indicates extensive or inappropriate use of state resources or if the Division=s modeling analysis fails to show compliance with the acceptable ambient levels in Rule .1104 of this Section, the modeling demonstration becomes the responsibility of the owner or operator of the facility.

(c) When the owner or operator of the facility is responsible for providing the modeling demonstration and the data used in the modeling, the owner or operator of the facility shall use in the model or in deriving data used in the model the process operational and air pollution control equipment parameters and emission rates that will be contained in his permit. Sources that are not required to be included in the model will not be included in the permit to emit toxic air pollutants.

(d) For the following pollutants, modeled emission rates shall be based on the highest emissions occurring in any single 15 minute period. The resultant modeled 1-hour concentrations shall then be compared to the applicable 1-hour acceptable ambient levels to determine compliance. These pollutants are:

(1) acetaldehyde (75-07-0)
(2) acetic acid (64-19-7)
(3) acrolein (107-02-8)
(4) ammonia (7664-41-7)
(5) bromine (7726-95-6)
(6) chlorine (7782-50-5)
(7) formaldehyde (50-00-0)
(8) hydrogen chloride (7647-01-0)
(9) hydrogen fluoride (7664-39-3)
(10) nitric acid (7697-37-2)

(e) The owner or operator of the facility and the Division may use any model allowed by 40 CFR 51.166(l) provided that the model is appropriate for the facility being modeled. The owner or operator or the Division may use a model other than one allowed by 40 CFR 51.166(l) provided that the Director determines that the model is equivalent to the model allowed by 40 CFR 51.166(l). Regardless of model used, the owner or operator and the Division shall model for cavity effects and shall comply with the modeling requirements for stack height set out in Rule .0533 of this Subchapter.

(f) Ambient air concentrations are to be evaluated for annual periods over a calendar year, for 24-hour periods from midnight to midnight, and for one-hour periods beginning on the hour.

(g) The owner or operator of the facility shall identify each toxic air pollutant emitted and its corresponding emission rate using mass balancing analysis, source testing, or other methods that the Director may approve as providing an equivalently accurate estimate of the emission rate.

(h) The owner or operator of the facility shall submit a modeling plan to the Director and shall have received approval of that plan from the before submitting a modeling demonstration to the Director. The modeling plan shall include:

(1) a diagram of the plant site, including locations of all stacks and associated buildings;
(2) on-site building dimensions;
(3) a diagram showing property boundaries, including a scale, key and north indicator;
(4) the location of the site on a United States Geological Survey (USGS) map;
(5) discussion of good engineering stack height and building wake effects for each stack;

(6) discussion of cavity calculations, impact on rolling and complex terrain, building wake effects, and urban/rural considerations;
(7) discussion of reasons for model selection;
(8) discussion of meteorological data to be used;
(9) discussion of sources emitting the pollutant that are not to be included in the model with an explanation of why they are being excluded (i.e. why the source will not affect the modeling analysis); and
(10) any other pertinent information.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. May 1, 1990;
Amended Eff. July 1, 1998.

15A NCAC 02D .1107 MULTIPLE FACILITIES

(a) If an acceptable ambient level in Rule .1104 of this Section is exceeded because of emissions of two or more facilities and if public exposure is such that the commission has evidence that human health may be adversely affected, then the Commission shall require the subject facilities to apply addition controls or to otherwise reduce emissions. The type of evidence that the Commission shall consider shall include one or more of the following:
(1) emission inventory,
(2) ambient monitoring,
(3) modeling, or
(4) epidemiological study.

(b) The allocation of the additional reductions shall be based on the relative contributions to the pollutant concentrations unless the owners or operators agree otherwise.

(c) The owner or operator of a facility shall not be required to conduct the multi-facility ambient impact analysis described in Paragraph (a) of this Rule. This type of analysis shall be done by the Division of Air Quality. In performing its analysis, the Division shall:
(1) develop a modeling plan that includes the elements set out in Paragraph (f) of Rule .1106 of this Section;
(2) use for the source modeling parameters, the modeling parameters used by the owner or operator of the source in his modeling demonstration, or if a modeling demonstration has not been done or if a needed parameter has not been used in the modeling demonstration, parameters contained in, or derived from data contained in, the source's permit;
(3) use a model allowed by Paragraph (c) of Rule .1106 of this Section;
(4) model for cavity effects and comply with the modeling requirements for stack height set out in Rule .0533 of this Section;
(5) use the time periods required by Paragraph (d) of Rule .1106 of this Section; and
(6) only consider impacts of a facility=s emissions beyond the premises of that facility.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282;*
Eff. May 1, 1990;
Amended Eff. July 1, 1998.

15A NCAC 02D .1108 MULTIPLE POLLUTANTS

If the Commission has evidence that two or more toxic air pollutants being emitted from a facility or combination of facilities act in the same way to affect human health so that their effects may be additive or enhanced and that public exposure is such that human health may be adversely affected, then the Commission will consider developing acceptable ambient levels for the combination of toxic air pollutants or other appropriate control measures.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282;*
Eff. May 1, 1990.

15A NCAC 02D .1109 112(J) CASE-BY-CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

(a) Applicability. This Rule applies only to sources of hazardous air pollutants required to have a permit under 15A NCAC 02Q .0500 and as described in 40 CFR 63.50. This Rule does not apply to research or laboratory activities as defined in Paragraph (b) of this Rule.

(b) Definitions. For the purposes of this Rule, the definitions in 40 CFR 63.2, 63.51, 15A NCAC 02Q .0526, and the following definitions apply:

(1) "Affected source" means the collection of equipment, activities, or both within a single contiguous area and under common control that is in a Section 112(c) source category or subcategory that the Administrator has failed to promulgate an emission standard by the Section 112(j) deadline, and that is addressed by an applicable MACT emission limitation established pursuant to 40 CFR Part 63 Subpart B;

(2) "Control technology" means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants including measures that:

(A) reduce the quantity, or eliminate emissions, of such pollutants through process changes, substitution of materials, or other modifications;

(B) enclose systems or processes to eliminate emissions;

(C) collect, capture, or treat such pollutants when released from a process, stack, storage, or fugitive emission point;

(D) are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 USC 7412(h); or

(E) are a combination of Parts (A) through (D) of this definition.

(3) "EPA" means the United States Environmental Protection Agency or the Administrator of U.S. Environmental Protection Agency.

(4) "Hazardous air pollutant" means any pollutant listed under Section 112(b) of the federal Clean Air Act.

(5) "MACT" means maximum achievable control technology.

(6) "Maximum achievable control technology" means:

(A) for existing sources,

(i) a MACT standard that EPA has proposed or promulgated for a particular category of facility or source,

(ii) the average emission limitation achieved by the best performing 12 percent of the existing facilities or sources for which EPA has emissions information if the particular category of source contains 30 or more sources, or

(iii) the average emission limitation achieved by the best performing five facilities or sources for which EPA has emissions information if the particular category of source contains fewer than 30 sources, or

(B) for new sources, the maximum degree of reduction in emissions that is deemed achievable but not less stringent than the emission control that is achieved in practice by the best controlled similar source.

(7) "MACT floor" means:

(A) for existing sources:

(i) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which EPA has emissions information) excluding those sources that have, within 18 months before the emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, or would comply if the source is not subject to such standard, with the lowest achievable emission rate (as defined in Section 171 of the federal Clean Air Act) applicable to the source category or subcategory for categories and subcategories with 30 or more sources; or

(ii) the average emission limitation achieved by the best performing five sources (for which EPA has emissions or could reasonably obtain emissions information) , in the category or subcategory, for categories or subcategories with fewer than 30 sources;

(B) for new sources, the emission limitation achieved in practice by the best controlled similar source.

(8) "New affected source" means the collection of equipment, activities, or both, that constructed after the issuance of a Section 112(j) permit for the source pursuant to 40 CFR 63.52, is subject to the applicable MACT emission limitation for new sources. Each permit shall define the term "new affected source," that will be the same as the "affected source" unless a different collection is warranted based on consideration of factors including:

(A) Emission reduction impacts of controlling individual sources versus groups of sources;
(B) Cost effectiveness of controlling individual equipment;
(C) Flexibility to accommodate common control strategies;
(D) Cost/benefits of emissions averaging;
(E) Incentives for pollution prevention;
(F) Feasibility and cost of controlling processes that share common equipment (e.g., product recovery devices); and
(G) Feasibility and cost of monitoring,.

(9) "New facility" means a facility for which construction is commenced after the Section 112(j) deadline, or after proposal of a relevant standard under Section 112(d) or (h) of the Federal Clean Air Act, whichever comes first.

(10) "Research or laboratory activities" means activities whose primary purpose is to conduct research and development into new processes and products; where such activities are operated under the supervision of technically trained personnel and are not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner; and where the source is not in a source category specifically addressing research or laboratory activities, that is listed pursuant to Section 112(c)(7) of the Clean Air Act.

(11) "Section 112(j) deadline" means the date 18 months after the date for which a relevant standard is scheduled to be promulgated under 40 CFR Part 63, except that for all major sources listed in the source category schedule for which a relevant standard is scheduled to be promulgated by November 15, 1994, the Section 112(j) deadline is November 15, 1996, and for all major sources listed in the source category schedule for which a relevant standard is scheduled to be promulgated by November 15, 1997, the Section 112(j) deadline is December 15, 1999.

(12) "Similar source" means that equipment or collection of equipment that, by virtue of its structure, operability, type of emissions and volume and concentration of emissions, is substantially equivalent to the new affected source and employs control technology for control of emissions of hazardous air pollutants that is practical for use on the new affected source.

(c) Missed promulgation dates: 112(j). If EPA fails to promulgate a standard for a category of source under Section 112 of the Federal Clean Air Act by the date established pursuant to Sections 112(e)(1) or (3) of the federal Clean Air Act, the owner or operator of any source in such category shall submit, within 18 months after such date, a permit application, in accordance with the procedures in 15A NCAC 02Q .0526, to the Director and to EPA to apply MACT to such sources. Sources subject to this Paragraph shall be in compliance with this Rule within three years from the date that the permit is issued.

(d) New facilities. The owner or operator of any new facility that is a major source of hazardous air pollutants (HAP) that is subject to this Rule shall apply MACT in accordance with the provisions of Rule .1112 of this Section, 15A NCAC 02Q .0528, and 02Q .0526(e)(2).

(e) Case-by-case MACT determination. The Director shall determine MACT according to 40 CFR 63.55(a).

(f) Monitoring and recordkeeping. The owner or operator of a source subject to this Rule shall install, operate, and maintain monitoring capable of detecting deviations from each applicable emission limitation or other standards with sufficient reliability and timeliness to determine continuous compliance over the applicable reporting period. Such monitoring data may be used as a basis for enforcing emissions limitations established under this Rule.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5), (10);*
Temporary Adoption Eff. March 8, 1994 for a period of 180 days or until the permanent rule is effective, whichever is sooner;
Eff. July 1, 1994;
Amended Eff. February 1, 2004; July 1, 1998; July 1, 1996.

15A NCAC 02D .1110 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

(a) With the exception of Paragraph (b) of this Rule, sources subject to national emission standards for hazardous air pollutants promulgated in 40 CFR Part 61 shall comply with emission standards, monitoring and reporting requirements, maintenance requirements, notification and record keeping requirements, performance test requirements, test method and procedural provisions, and any other provisions, as required therein, rather than with any otherwise-applicable Rule in Section .0500 of this Subchapter that would be in conflict therewith.

(b) Along with the notice appearing in the North Carolina Register for a public hearing to amend this Rule to exclude a standard from this Rule, the Director shall state whether or not the national emission standards for hazardous air pollutants promulgated under 40 CFR Part 61, or part thereof, shall be enforced. If the Commission does not adopt the amendment to this Rule to exclude or amend the standard within 12 months after the close of the comment period on the proposed amendment, the Director shall begin enforcing that standard when 12 months has elapsed after the end of the comment period on the proposed amendment.

(c) New sources of volatile organic compounds that are located in an area designated in 40 CFR 81.334 as nonattainment for ozone or an area identified in accordance with 15A NCAC 02D .0902 as in violation of the ambient air quality standard for ozone shall comply with the requirements of 40 CFR Part 61 that are not excluded by this Rule, as well as with any applicable requirements in Section .0900 of this Subchapter.

(d) All requests, reports, applications, submittals, and other communications to the administrator required under Paragraph (a) of this Rule shall be submitted to the Director of the Division of Air Quality rather than to the Environmental Protection Agency; except that all such reports, applications, submittals, and other communications to the administrator required by 40 CFR 61.145 shall be submitted to the Director, Division of Epidemiology.

(e) In the application of this Rule, definitions contained in 40 CFR Part 61 shall apply rather than those of Section .0100 of this Subchapter.

(f) 15A NCAC 02Q .0102 and .0302 are not applicable to any source to which this Rule applies. The owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or .0500.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107 (a)(5); 150B-21.6;*
Eff. July 1, 1996;
Amended Eff. June 1, 2008; July 1, 1997.

15A NCAC 02D .1111 MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

(a) With the exception of Paragraph (b) or (c) of this Rule, sources subject to national emission standards for hazardous air pollutants for source categories promulgated in 40 CFR Part 63 shall comply with emission standards, monitoring and reporting requirements, maintenance requirements, notification and record keeping requirements, performance test requirements, test method and procedural provisions, and any other provisions, as required therein, rather than with any otherwise-applicable rule in Section .0500 of this Subchapter which would be in conflict therewith.

(b) The following are not included under this Rule:

(1) approval of state programs and delegation of federal authorities (40 CFR 63.90 to 63.96, Subpart E); and

(2) requirements for control technology determined for major sources in accordance with Clean Air Act Sections 112(g) and 112(j) (40 CFR 63.50 to 63.57, Subpart B).

(c) Along with the notice appearing in the North Carolina Register for a public hearing to amend this Rule to exclude a standard from this Rule, the Director shall state whether or not the national emission standard for hazardous air pollutants for source categories promulgated under 40 CFR Part 63, or part thereof, shall be enforced. If the Commission does not adopt the amendment to this Rule to exclude or amend the standard within 12 months after the close of the comment period on the proposed amendment, the Director shall begin enforcing that standard when 12 months has elapsed after the end of the comment period on the proposed amendment.

(d) New sources of volatile organic compounds that are located in an area designated in 40 CFR 81.334 as nonattainment for ozone or an area identified in accordance with 15A NCAC 02D .0902 as being in violation of the ambient air quality standard for ozone shall comply with the requirements of 40 CFR Part 63 that are not excluded by this Rule as well as with any applicable requirements in Section .0900 of this Subchapter.

(e) All requests, reports, applications, submittals, and other communications to the administrator required under Paragraph (a) of this Rule shall be submitted to the Director of the Division of Air Quality rather than to the Environmental Protection Agency; except that all such reports, applications, submittals, and other communications to the

administrator required by 40 CFR Part 63, Subpart M for dry cleaners covered under Chapter 143, Article 21A, Part 6 of the General Statutes shall be submitted to the Director of the Division of Waste Management.
(f) In the application of this Rule, definitions contained in 40 CFR Part 63 shall apply rather than those of Section .0100 of this Subchapter when conflict exists.
(g) 15A NCAC 02Q .0102 and .0302 are not applicable to any source to which this Rule applies if the source is required to be permitted under 15A NCAC 02Q .0500, Title V Procedures. The owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or .0500. Sources that have heretofore been exempted from needing a permit and become subject to requirements promulgated under 40 CFR 63 shall apply for a permit in accordance to 15A NCAC 02Q .0109.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5); 150B-21.6;*
Eff. July 1, 1996;
Amended Eff. January 1, 2007; April 1, 1997.

15A NCAC 02D .1112 112(G) CASE BY CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY
(a) Applicability. This Rule applies to the construction or reconstruction of major sources of hazardous air pollutants unless:
(1) the major source has been specifically regulated or exempted from regulation under:
(A) Rule .1109 or .1111 of this Section; or
(B) a standard issued pursuant to Section 112(d), 112(h), or 112(j) of the federal Clean Air Act and incorporated in another Subpart of 40 CFR Part 63; or
(2) the owner or operator of such major source has received all necessary air quality permits for such construction or reconstruction project before July 1, 1998.
(b) Exclusions. The requirements of this Rule shall not apply to:
(1) electric utility steam generating units unless and until such time as these units are added to the source category list pursuant to Section 112(c)(5) of the federal Clean Air Act.
(2) stationary sources that are within a source category that has been deleted from the source category list pursuant to Section 112(c)(9) of the federal Clean Air Act.
(3) research and development activities.
(c) Definitions. For the purposes of this Rule, the following definitions apply:
(1) "Affected source" means the stationary source or group of stationary sources that, when fabricated (on site), erected, or installed meets the definition of "construct a major source" or the definition of "reconstruct a major source" contained in this Paragraph.
(2) "Affected States" means all States or local air pollution agencies whose areas of jurisdiction are:
(A) contiguous to North Carolina and located less than D=Q/12.5 from the facility, where:
(i) Q = emissions of the pollutant emitted at the highest permitted rate in tons per year, and
(ii) D = distance from the facility to the contiguous state or local air pollution control agency in miles; or
(B) within 50 miles of the permitted facility.
(3) "Available information" means, for purposes of identifying control technology options for the affected source, information contained in the following information sources as of the date of approval of the MACT determination by the Division:
(A) a relevant proposed regulation, including all supporting information;
(B) background information documents for a draft or proposed regulation;
(C) data and information available from the Control Technology Center developed pursuant to Section 113 of the federal Clean Air Act;
(D) data and information contained in the Aerometric Informational Retrieval System including information in the MACT data base;
(E) any additional information that can be expeditiously provided by the Division and EPA; and
(F) for the purpose of determinations by the Division, any additional information provided by the applicant or others, and any additional information considered available by the Division.
(4) "Construct a major source" means:

(A) To fabricate, erect, or install at any greenfield site a stationary source or group of stationary sources which is located within a contiguous area and under common control and which emits or has the potential to emit 10 tons per year of any HAP's or 25 tons per year of any combination of HAP, or

(B) To fabricate, erect, or install at any developed site a new process or production unit which in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, unless the process or production unit satisfies Subparts (i) through (vi) of this Paragraph:

(i) All HAP emitted by the process or production unit that would otherwise be controlled under the requirements of this Rule will be controlled by emission control equipment which was previously installed at the same site as the process or production unit;

(ii) The Division:

(I) has determined within a period of five years prior to the fabrication, erection, or installation of the process or production unit that the existing emission control equipment represented best available control technology (BACT) under Rule .0530 of this Subchapter or lowest achievable emission rate (LAER) under Rule .0531 of this Subchapter for the category of pollutants which includes those HAP's to be emitted by the process or production unit; or

(II) determines that the control of HAP emissions provided by the existing equipment will be equivalent to that level of control currently achieved by other well-controlled similar sources (i.e., equivalent to the level of control that would be provided by a current BACT, LAER, or MACT determination under Rule .1109 of this Section);

(iii) The Division determines that the percent control efficiency for emissions of HAP from all sources to be controlled by the existing control equipment will be equivalent to the percent control efficiency provided by the control equipment prior to the inclusion of the new process or production unit;

(iv) The Division has provided notice and an opportunity for public comment concerning its determination that criteria in Subparts (i), (ii), and (iii) of this Subparagraph apply and concerning the continued adequacy of any prior LAER, BACT, or MACT determination under Rule .1109 of this Section;

(v) If any commenter has asserted that a prior LAER, BACT, or MACT determination under Rule .1109 of this Section determination is no longer adequate, the Division has determined that the level of control required by that prior determination remains adequate; and

(vi) Any emission limitations, work practice requirements, or other terms and conditions upon which the above determinations by the Division are predicated will be construed by the Division as applicable requirements under Section 504(a) of the federal Clean Air Act and either have been incorporated into an existing permit issued under 15A NCAC 2Q .0500 for the affected facility or will be incorporated into such permit upon issuance.

(5) "Control technology" means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants including measures that:

(A) reduce the quantity of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modifications;

(B) enclose systems or processes to eliminate emissions;

(C) collect, capture or treat such pollutants when released from a process, stack, storage or fugitive emissions point;

(D) are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 U.S.C. 7412(h); or

(E) are a combination of Parts (A) through (D) of this definition.

(6) "Electric utility steam generating unit" means any fossil fuel fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A unit that co-generates steam and

electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electric output to any utility power distribution system for sale shall be considered an electric utility steam generating unit.

(7) "Greenfield site" means a contiguous area under common control that is an undeveloped site.

(8) "HAP" means hazardous air pollutants.

(9) "Hazardous air pollutant" means any pollutant listed under Section 112(b) of the federal Clean Air Act.

(10) "List of source categories" means the source category list required by Section 112(c) of the federal Clean Air Act.

(11) "MACT" means maximum achievable control technology.

(12) "Maximum achievable control technology emission limitation for new sources" means the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of reduction in emissions that the permitting authority, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by the constructed or reconstructed major source.

(13) "Process or production unit" means any collection of structures or equipment, that processes, assembles, applies, or otherwise uses material inputs to produce or store an intermediate or final product. A single facility may contain more than one process or production unit.

(14) "Reconstruct a major source" means the replacement of components at an existing process or production unit that in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, whenever:

(A) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit; and

(B) It is technically and economically feasible for the reconstructed major source to meet the applicable maximum achievable control technology emission limitation for new sources established under this Subpart.

(15) "Research and development activities" means activities conducted at a research or laboratory facility whose primary purpose is to conduct research and development into new processes and products, where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for sale or exchange for commercial profit, except in a de minimis manner.

(16) "Similar source" means a stationary source or process that has comparable emissions and is structurally similar in design and capacity to a constructed or reconstructed major source such that the source could be controlled using the same control technology.

(d) Principles of MACT determinations. The following general principles shall be used to make a case-by-case MACT determination concerning construction or reconstruction of a major source under this Rule:

(1) The MACT emission limitation or MACT requirements recommended by the applicant and approved by the Division shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Division.

(2) Based upon available information, the MACT emission limitation and control technology (including any requirements under Subparagraph (3) of this Paragraph) recommended by the applicant and approved by the Division shall achieve the maximum degree of reduction in emissions of HAP that can be achieved by utilizing those control technologies that can be identified from the available information, taking into consideration the costs of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements associated with the emission reduction.

(3) The owner or operator may recommend a specific design, equipment, work practice, or operational standard, or a combination thereof, and the Director may approve such a standard if the Division specifically determines that it is not feasible to prescribe or enforce an emission limitation under the criteria set forth in Section 112(h)(2) of the federal Clean Air Act.

(4) If the EPA has either proposed a relevant emission standard pursuant to Section 112(d) or 112(h) of the federal Clean Air Act or adopted a presumptive MACT determination for the source category that includes the constructed or reconstructed major source, then the MACT requirements applied to the constructed or reconstructed major source shall have considered those MACT emission limitations and requirements of the proposed standard or presumptive MACT determination.

(e) Effective date of MACT determination. The effective date of a MACT determination shall be the date of issuance of a permit under procedures of 15A NCAC 2Q .0300 or .0500 incorporating a MACT determination.
(f) Compliance date. On and after the date of start-up, a constructed or reconstructed major source that is subject to the requirements of this Rule shall be in compliance with all applicable requirements specified in the MACT determination.
(g) Compliance with MACT determinations. The owner or operator of a constructed or reconstructed major source that:

(1) is subject to a MACT determination shall comply with all requirements set forth in the permit issued under 15A NCAC 2Q .0300 or .0500, including any MACT emission limitation or MACT work practice standard, and any notification, operation and maintenance, performance testing, monitoring, reporting, and recordkeeping requirements; or

(2) has obtained a MACT determination shall be deemed to be in compliance with Section 112(g)(2)(B) of the federal Clean Air Act only to the extent that the constructed or reconstructed major source is in compliance with all requirements set forth in the permit issued under 15A NCAC 2Q .0300 or .0500. Any violation of such requirements by the owner of operator shall be deemed by the Division and by EPA to be a violation of the prohibition on construction or reconstruction in Section 112(g)(2)(B) of the federal Clean Air Act for whatever period the owner or operator is determined to be in violation of such requirements, and shall subject the owner or operator to appropriate enforcement action under the General Statutes and the federal Clean Air Act.

(h) Requirements for constructed or reconstructed major sources subject to a subsequently promulgated MACT standard or MACT requirement. If EPA promulgates an emission standard under Section 112(d) or 112(h) of the federal Clean Air Act or the Division issues a determination under Rule .1109 of this Section that is applicable to a stationary source or group of sources that would be deemed to be a constructed or reconstructed major source under this Rule:

(1) before the date that the owner or operator has obtained a final and legally effective MACT determination under 15A NCAC 2Q .0300 or .0500, the owner or operator of the source(s) shall comply with the promulgated standard or determination rather than any MACT determination under this Rule by the compliance date in the promulgated standard; or

(2) after the source has been subject to a prior case-by-case MACT under this Rule, and the owner or operator obtained a final and legally effective case-by-case MACT determination prior to the promulgation date of such emission standard, the Division shall (if the initial permit has not yet been issued under 15A NCAC 2Q .0500) issue an initial permit that incorporates the emission standard or determination, or shall (if the initial permit has been issued under 15A NCAC 2Q .0500) revise the permit according to the reopening procedures in 15A NCAC 2Q .0517, Reopening for Cause, whichever is relevant, to incorporate the emission standard or determination.

(i) Compliance with subsequent 112(d), 112(h),or 112(j) standards. EPA may include in the emission standard established under Section 112(d) or 112(h) of the federal Clean Air Act a specific compliance date for those sources that have obtained a final and legally effective MACT determination under this Rule and that have submitted the information required by 40 CFR 63.43 to EPA before the close of the public comment period for the standard established under section 112(d) of the federal Clean Air Act. Such date shall assure that the owner or operator shall comply with the promulgated standard as expeditiously as practicable, but not longer than eight years after such standard is promulgated. In that event, the Division shall incorporate the applicable compliance date in the permit issued under 15A NCAC 2Q .0500. If no compliance date has been established in the promulgated 112(d) or 112(h) standard or determination under Rule .1109 of this Section, for those sources that have obtained a final and legally effective MACT determination under this Rule, then the Director shall establish a compliance date in the permit that assures that the owner or operator shall comply with the promulgated standard or determination as expeditiously as practicable, but not longer than eight years after such standard is promulgated or a determination is made under Rule .1109 of this Section.
(j) Revision of permit to incorporate less stringent control. Notwithstanding the requirements of Paragraph (h) of this Rule, if the Administrator of EPA promulgates an emission standard under Section 112(d) or Section 112(h) of the federal Clean Air Act or the Division issues a determination under Rule .1109 of this Section that is applicable to a stationary source or group of sources that was deemed to be a constructed or reconstructed major source under this Rule and that is the subject of a prior case-by-case MACT determination pursuant to 40 CFR 63.43, and the level of control required by the emission standard issued under Section 112(d) or 112(h) or the determination issued under Rule .1109 of this Section is less stringent than the level of control required by any emission limitation or standard in the prior MACT determination, the Division is not required to incorporate any less stringent terms of the promulgated standard in the permit issued under 15A NCAC 2Q .0500 applicable to such source(s) and may consider any more stringent provisions of the prior MACT determination to be applicable legal requirements when issuing or revising such an operating permit.

ATTACHMENT 8: LIST OF FEDERAL AIR TOXICS RULES APPLICABLE TO INDUSTRIES IN NORTH CAROLINA

44 of 118 Standards are Applicable in North Carolina

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Reciprocating Internal Combustion Engines (RICE) includes area sources	Any industry using a stationary internal combustion engine	http://www.epa.gov/ttn/atw/rice/ricepg.html	N	*6/15/2012 (Projected)*	199
Chromium Electroplating	Chromium electroplating and anodizing operations that coat metal parts and tools with a thin layer of chromium to protect them from corrosion and wear.	http://www.epa.gov/ttn/atw/chrome/chromepg.html	N	6/30/2011 (Proposed)	32
Plywood and Composite Wood Products (formerly Plywood and Particle Board Manufacturing)	Sawmills with lumber kilns. Hardwood plywood and veneer plants. Softwood plywood and veneer plants. Reconstituted wood products plants particleboard, medium density fiberboard, hardboard, fiberboard, and oriented strandboard plants). Structural wood members, not elsewhere classified (engineered wood products plants).	http://www.epa.gov/ttn/atw/plypart/plywoodpg.html	N	*7/30/2012 (Projected)*	30
Wood Furniture (surface coating)	Wood Furniture Manufacturing Operations	http://www.epa.gov/ttn/atw/wood/riwood.html	N	10/31/2011 (Court Ordered)	29

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Reinforced Plastic Composites Production	Facilities that manufacture intermediate and/or final products using styrene containing thermoset resins and gel coats.	http://www.epa.gov/ttn/atw/rpc/rpcpg.html	N	*4/21/2011 (Projected)*	14

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Misc. Metal Parts and Products (surface coating)	Automobile Parts: - Engine parts, vehicle parts and accessories, brakes, axles, etc. - Extruded Aluminum Extruded aluminum, architectural components, rod, and tubes. - Heavy Equipment Tractors, earth moving machinery. - Job Shops - Any of the products from the miscellaneous metal parts and products segments. - Large Trucks and Buses Large trucks and buses. - Magnet Wire Magnet wire. - Metal Buildings Prefabricated metal: buildings, carports, docks, dwellings, greenhouses, panels for buildings. - Metal Containers Drums, kegs, pails, shipping containers. - Metal Pipe and Foundry Plate, tube, rods, nails, spikes, etc. - Rail Transportation Brakes, engines, freight cars, locomotives. - Recreational Vehicles - Motorcycles, motor homes, semitrailers, truck trailers. - Rubber-to-Metal Products. - Engine mounts, rubberized tank tread, harmonic balancers. - Structural Steel :Joists, railway bridge sections.	http://www.epa.gov/ttn/atw/misc/miscpg.html	N	*1/2/2012 (Projected)*	13

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Boat Manufacturing	Resin and gel coat operations at fiberglass boat manufacturers, paint and coating operations at aluminum boat manufacturers, and carpet and fabric adhesive operations at all boat manufacturers.	http://www.epa.gov/ttn/atw/boat/boatpg.html	N	*8/22/2009 (Projected)*	12
Municipal Solid Waste Landfills	Air and water resource and solid waste management. Refuse systems—solid waste landfills	http://www.epa.gov/ttn/atw/landfill/lndfillpg.html	N	*1/16/2011 (Projected)*	12
Paper and Other Web (surface coating)	Facilities that coat paper and other web substrates	http://www.epa.gov/ttn/atw/powc/powcpg.html	N	*12/4/2010 (Projected)*	10
Industrial, Commercial and Institutional Boilers and Process Heaters-Major Sources	Industrial, commercial, and institutional boilers and process heaters	http://www.epa.gov/ttn/atw/boiler/boilerpg.html	N	*9/13/2012 (Projected)*	9
Misc. Organic Chemical Production and Processes (MON)	Producers of specialty organic chemicals, explosives, certain polymers and resins, and certain pesticide intermediates.	http://www.epa.gov/ttn/atw/mon/monpg.html	N	*11/10/2011 (Projected)*	8
Auto & Light Duty Truck (surface coating)	The surface coating of automobiles and light-duty trucks	http://www.epa.gov/ttn/atw/auto/autopg.html	N	*4/26/2012 (Projected)*	7

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Degreasing Organic Cleaners	Halogenated Cleaning Solvents(Degreasing Organic Cleaners)	http://www.epa.gov/ttn/atw/degrea/halopg.html	Y	5/3/2007	7
Organic Liquids Distribution (non-gasoline)	Operations at major sources that transfer organic liquids into or out of the plant site, including: liquid storage terminals, crude oil pipeline stations, petroleum refineries, chemical manufacturing facilities, and other manufacturing facilities with collocated OLD operations.	http://www.epa.gov/ttn/atw/orgliq/orgliqpg.html	N	*2/3/2012 (Projected)*	7

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Plastic Parts (surface coating)	Certain Office furniture, except wood; Plastic foam products (e.g., pool floats); Unclassified Plastic products (e.g., name plates, storage boxes, cosmetic caps, cup holders); Office machines; Radio and television broadcasting and communications equipment, Motor Vehicle Body Mfg; Motor vehicle parts and accessories; Truck Trailer Mfg; Motor Home Mfg; Travel Trailer and Camper Mfg; Other Transportation equipment (e.g., snowmobile hoods, running boards, tractor body panels, personal watercraft parts); Medical equipment and supplies; Sporting and athletic goods; Signs and advertising specialties; Unclassified Mfg. industries (e.g., bezels, consoles, panels, lenses).	http://www.epa.gov/ttn/atw/plastic/plasticpg.html	N	*4/19/2012 (Projected)*	7

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Printing and Publishing (surface coating)	Publication rotogravure printers produce saleable paper products such as catalogues, magazines, newspaper inserts, Package product rotogravure and wide-web flexographic facilities print on paper, plastic film, metal foil, and vinyl for use in products such as flexible packaging, labels, gift wrap, and decorative laminates.	http://www.epa.gov/ttn/atw/print/printpg.html	Y	4/21/2011	7
Stationary Combustion Turbines	Any industry using a stationary combustion turbine as defined in the regulation	http://www.epa.gov/ttn/atw/turbine/turbinepg.html	N	*3/5/2012 (Projected)*	7
Hazardous Organic NESHAP (Synthetic Organic Chemical Manufacturing Industry)	Chemical manufacturing facilities.	http://www.epa.gov/ttn/atw/hon/honpg.html	Y	12/21/2006	6
Combustion Sources at Kraft, Soda, and Sulfite Pulp & Paper Mills (Pulp and Paper MACT II)	Pulp and Paper Combustion Sources	http://www.epa.gov/ttn/atw/pulp/pulppg.html	N	*1/12/2009 (Projected)*	5

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Fabric Printing, Coating & Dyeing	The Coating process applies material to one or both sides of a continuous web substrate, such as a roll of fabric; Dyeing is the application of color to the whole body of a textile material such as yarn, thread, cord, fiber, fabric, or other textile material. Finishing is a process performed after dyeing that improves the appearance or usefulness of a textile.	http://www.epa.gov/ttn/atw/fabric/fabricpg.html	N	5/29/2011 (Projected)	5
Hazardous Organic NESHAP (Synthetic Organic Chemical Manufacturing Industry)	Chemical manufacturing facilities.	http://www.epa.gov/ttn/atw/hon/honpg.html	Y	12/21/2006	5
Hazardous Organic NESHAP (Synthetic Organic Chemical Manufacturing Industry)	Chemical manufacturing facilities.	http://www.epa.gov/ttn/atw/hon/honpg.html	Y	12/21/2006	5
Misc. Coating Manufacturing	Manufacturers of paints, coatings, adhesives, or inks.	http://www.epa.gov/ttn/atw/mcm/mcmpg.html	N	*12/11/2011 (Projected)*	5

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Pulp & Paper (non-combust)MACT	Kraft, soda, sulfite, and stand-alone semichemical pulp mills	http://www.epa.gov/ttn/atw/pulp/pulppg.html	N	1/31/2012 (Court Ordered)	5
Aerospace	Aerospace manufacturing and rework facilities produce or repair aerospace vehicles or vehicle parts, such as airplanes, helicopters, space vehicles, and missiles	http://www.epa.gov/ttn/atw/aerosp/aeropg.html	N	6/29/2012 (Court Ordered)	4
Polymers & Resins IV Acrylonitrile-Butadiene-Styrene Methyl Methacrylate-Acrylonitrile+ Methyl Methacrylate-Butadiene++ Polystyrene Styrene Acrylonitrile Polyethylene Terephthalate Nitrile Resins	Facilities which manufacture: acrylonitrile butadiene styrene resin, styrene acrylonitrile resin, methyl methacrylate, methyl methacrylate butadiene styrene resin, polystyrene resin, poly (ethylene terephthalate) resin, or nitrile resin	http://www.epa.gov/ttn/atw/pr4/pr4pg.html	N	11/30/2012 (Court Ordered)	4
Brick and Structural Clay Products Manufacturing	Brick and structural clay products manufacturing	http://www.epa.gov/ttn/atw/brick/brickpg.html	N	*5/16/2001 (Projected)*	3

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Commercial Sterilizers	Ethylene Oxide (EO) emissions from commercial sterilization and fumigation operations such as medical equipment manufacturers	http://www.epa.gov/ttn/atw/eo/eopg.html	Y	4/7/2006	3
Dry Cleaning	Perchloroethylene Dry Cleaners	http://www.epa.gov/ttn/atw/dryperc/dryclpg.html	Y	7/27/2006	3
Gasoline Distribution (Stage 1)	Gasoline distribution bulk terminals, bulk plants, and pipeline facilities and from gasoline dispensing facilities.	http://www.epa.gov/ttn/atw/gasdist/gasdispg.html	Y	1/24/2011	3
Magnetic Tape (surface coating)	Operations at major sources that are engaged in the surface coating of magnetic tape.	http://www.epa.gov/ttn/atw/magtape/magtappg.html	Y	4/7/2006	3
Rubber Tire Manufacturing	Rubber tire manufacturing facilities	http://www.epa.gov/ttn/atw/tire/tirepg.html	N	*7/11/2010 (Projected)*	3
Secondary Aluminum	Secondary aluminum production	http://www.epa.gov/ttn/atw/alum2nd/alum2pg.html	N	8/31/2012 (Court Ordered)	3

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Solvent Extraction for Vegetable Oil Production	Cottonseed oil mills. Soybean oil mills. Other vegetable oil mills, excluding soybeans and cottonseed mills. Other vegetable oil mills, excluding soybeans and cottonseed mills. Prepared feeds and feed ingredients for animals and fowls, excluding dogs and cats. Flour and other grain mill product mills. Wet corn milling.	http://www.epa.gov/ttn/atw/vegoil/vegoilpg.html	N	*4/12/2009 (Projected)*	3
Wood Building Products (surface coating) (formerly Flat Wood Paneling Products)	Surface coatings to wood building products	http://www.epa.gov/ttn/atw/wbldg/wbldgpg.html	N	5/28/2011 (Projected)	3
Generic MACT I-Acetal Resins	Acetal Resins	http://www.epa.gov/ttn/atw/gmact/gmactpg.html	Y	12/16/2008	2
Polymers & Resins III Amino Resins Phenolic Resins	Facilities which manufacture amino/phenolic resins	http://www.epa.gov/ttn/atw/amino/aminopg.html	N	10/31/2013 (Court Ordered)	2

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
Site Remediation	Site remediation activities at businesses at which materials containing organic HAP currently are or have been in the past stored, processed, treated, otherwise managed at the facility. These facilities include: organic liquid storage terminals, petroleum refineries, chemical manufacturing facilities, and other manufacturing facilities with co-located site remediation activities.	http://www.epa.gov/ttn/atw/siterm/sitermpg.html	N	*10/8/2011 (Projected)*	2
Asphalt Processing and Asphalt Roofing Manufacturing	Asphalt processing or asphalt roofing manufacturing facility	http://www.epa.gov/ttn/atw/asphalt/asphaltpg.html	N	*5/1/2011 (Projected)*	1
Flexible Polyurethane Foam Fabrication Operation	Flexible polyurethane foam fabrication operations. The foam fabrication industry includes facilities engaged in cutting, gluing, and/or laminating pieces of flexible polyurethane foam.	http://www.epa.gov/ttn/atw/foam2/foam2pg.html	N	*4/14/2011 (Projected)*	1
Friction Products Manufacturing	Facilities that manufacture friction materials	http://www.epa.gov/ttn/atw/friction/frictionpg.html	N	*10/18/2010 (Projected)*	1

NESHAP (MACT) STANDARD Source Categories	Category Description	URL	EPA Risk and Technology Review (RTR) Promulgation		Number of Emission Sources in NC
			(Y/N)	Date (Final, Proposed, Court Ordered or Projected)	
General Provisions	"General Provisions" addresses general information and requirements that apply to all of the air toxics rules.	http://www.epa.gov/ttn/atw/gp/gppg.html	N	Not promulgated by EPA	1
Phosphoric Acid Phosphate Fertilizers	Phosphoric Acid Manufacturing: Wet Process Phosphoric Acid Process Line, Superphosphoric Acid; Phosphate Fertilizers Production: Diammonium and/or Monoammonium Phosphate Process Line, Granular Triple Superphosphate Process Line, Granular Triple Superphosphate Storage Building; Process Line, Phosphate Rock Dryer, Phosphate Rock Calciner, Purified Phosphoric Acid Process Line.	http://www.epa.gov/ttn/atw/phosph/phosphpg.html	N	10/31/2013 (Court Ordered)	1
Primary Aluminum	Primary aluminum reduction plants	http://www.epa.gov/ttn/atw/alum/alumpg.html	N	6/29/2012 (Court Ordered)	1

The Federal Air Toxic Pollutant Rules and Standards information is from EPA. These rules are those in which a Residual Risk and Technology (RTR) review has been or will be conducted. *Projected* in the Date column means the date when the RTR should be conducted (8 years past promulgation). Proposed in the Date column means that a rule has been proposed but is not final. Court Ordered in the Date column means that EPA is under a court ordered deadline to finalize the rule. Not promulgated by EPA indicates no available RTR rule date has been set by EPA. There are an additional 57 RTR rules to which NC facilities are not subject.

ATTACHMENT 9: EXECUTIVE ORDER NUMBER 86

MINIMIZATION OF SOLID, HAZARDOUS, AND INFECTIOUS WASTE AND THE CONTROL OF TOXIC AIR POLLUTANTS

The waste disposal problem in North Carolina is enormous. All types of disposal practices -- from incineration to wastewater discharge to landfilling -- are adversely impacted by the sheer volumes of waste which are becoming greater per person each year.

Clearly, North Carolina must have adequate waste treatment and disposal capacity. Such facilities must be properly located and designed, well operated, and extensively monitored to ensure that public health and the environment are protected, including limitations on toxic air pollutant emissions. But along with additional waste treatment and disposal capacity comes an equal if not greater need to reduce the amount of wastes generated in the first place.

First and foremost in any long-term solution to the waste problem is an emphasis on waste stream reduction. No law, regulation, or program aimed at the environmentally safe disposal of wastes of any sort will ultimately be successful if it does not include as its fundamental basis a vigorous and sustained conservation effort, including incentives, education, market development, and source reduction techniques such as recycling, recovery, and reuse. Simply disposing of wastes is no longer appropriate. Instead, wastes must be managed with emphasis on conservation. Conservation must be the first thought and continuing basis of all environmental and public health protection programs.

ACCORDINGLY,

WHEREAS, the quality of the environment in North Carolina is a key element in the continued growth and progress of the State; and

WHEREAS, the State of North Carolina produces more waste than it has capacity to treat or destroy; and

WHEREAS, as economic and population growth continue, the environment is relied upon more heavily each year to accept wastes which accompany such growth; and

WHEREAS, it is essential that the State have adequate waste treatment and disposal facilities; and

WHEREAS, incineration may play an integral role in an environmentally sound waste management system; and

WHEREAS, effective control of toxic air pollutants is an essential and key element to ensure adequate protection for human health and the environment; and

WHEREAS, as the most desirable waste management strategy to be undertaken, North Carolina has stated its commitment to prevention, minimization, and recycling of wastes before they impact the State's environment and is committed to reduce its dependence on landfills as a means of solid waste disposal by the year 2006;

NOW THEREFORE, By the authority vested in me by the Constitution and laws of North Carolina, and consistent with statutory authorizations and powers it is **ORDERED:**

That the State shall expand its commitment to preventing, minimizing, and recycling of wastes by incorporating waste reduction in all decisions by pollution control authorities in the following manner:

SECTION 1.

(a) As a condition for the issuance thereof, applicants for permits, permit modifications and permit renewals for the discharge of wastewater or incinerator emissions attendant to the treatment and disposal of solid and hazardous wastes, shall demonstrate to the satisfaction of the Secretary of the Department of National Resources and Community Development, or his designee, that, to the extent reasonably technologically and economically achievable, (i) the applicant has undertaken source reduction and recycling techniques and methods to reduce the volume, pollutant level and/or toxicity of the same and (ii) the wastewater discharge and incinerator emission levels sought in the applications are the lowest achievable after waste reduction; and

(b) The State shall exercise its authority to obtain, review and certify information from each facility that generates, treats, stores, recycles or disposes of hazardous waste to ensure that is has a Waste Minimization Program in affect as required under Sections 3002(b) and 3005 (H) of the Hazardous and Solid Waste Amendments of 1984; and

SECTION 2.

Consistent with its statutory authorities and powers, the Environmental Management Commission shall expedite the development and promulgation of rules sufficient to control the emissions of toxic air pollutants from waste incinerators and utilize its existing statutory authority to ensure that any such permits issued after the effective date of this Order provide adequate control of toxic air emissions.

SECTION 3.

Further, consistent with its statutory authorities and powers, the Environmental Management Commission shall expedite the development and promulgation of ambient air standards for toxic pollutants.

SECTION 4.

All Executive Orders or portions of Executive Orders inconsistent herewith are hereby rescinded.

Done in Raleigh, North Carolina this 1st day of March, 1989.

Biosketch for George Lucier **October 12, 2011**

George Lucier has been a Chatham County resident for 39 years. He earned a Ph.D from the University of Maryland School of Agriculture in 1970. He is a retired scientist having worked at the National institutes of Health in Research Triangle Park for 31 years where he achieved international recognition for his research in toxicology, developing innovative approaches for strengthening the scientific foundation on which human health risk assessments for chemical exposures are based and his leadership in coordinating toxicological research across Federal agencies. Dr Lucier chaired the NC Scientific Advisory Board for toxic air pollutants for 15 years. He is former Chair of the Chatham County Board of Commissioners and left office in 2010. Dr Lucier is a member of the NC Rules Review Commission and a member of the Central Carolina Community College Board of Trustees.

Examples of Relevant Past or Current Activities at the State, Local and Federal Levels

- Former Associate Director of the National Toxicology Program and was responsible for coordinating toxicological research and testing across Federal agencies including the Environmental Protection Agency, the Food and Drug Administration and the Occupational Safety and Health Administration.
- Published over 250 scientific research articles in the peer-reviewed scientific literature.
- Editor for Environmental Health Perspectives, considered the world's leading scientific journal dealing with environmental health issues.
- Technical advisor to the Office of Special Counsel for the Waco investigation.
- Assigned by the White House Office of Science and Technology to harmonize risk assessments for mercury across Federal agencies.
- Chair of the NCDENR Scientific Advisory Board for Toxic Air Pollutants which used all available scientific information to determine safe exposure levels for air pollutants of health concern in North Carolina.
- Member of the NC Committee to develop environmentally superior and economically feasible technologies for handling hog wastes.
- Environment Committee for the NC Association of County Commissioners.
- Member of the NC Committee to determine the cause of fish kills in North Carolina waters
- Chatham County Commissioner (2006-2010); served as Chair for 2 years and Vice Chair for 2 years.
- Chair of the Chatham County Planning Board between 2001 and 2004.
- Chatham County Board of Health.
- Board of Trustees for the Central Carolina Community College.
- NC Rules Review Commission

Talking Points for Presentation to the Environmental Review Commission on October 12, 2011 Regarding the Air Toxics Program

George W Lucier

Credentials relevant to Air Toxics—see attached biosketch

- Former chair of the NC Science Advisory Board on Air Toxics
- Former Associate Director of the National Toxicology Program
- Other North Carolina relevant activities

Air Toxics in North Carolina

- 187 Hazardous Air Pollutants (HAPs) identified by the USEPA
- 97 Toxic Air Pollutants (TAPs) regulated in North Carolina
- 38 million pounds of hazardous air pollutants released in NC per year
- 13 million pounds are released into the water and 11 million pounds on the land
- 310 facilities emit more than 100,000 pounds per year
- NC ranks in the top 10 for states in the US for HAP emissions and higher than either South Carolina and Virginia
- The Electric Power Industry is the highest emitter of HAPS in North Carolina
- These numbers provide a strong justification for having a viable and effective air toxics program in North Carolina

Hazardous Air Pollutants can cause a wide array of health risks including cancer, birth defects, reproductive problems, immune deficits, respiratory problems such as asthma and neurological diseases. This is why North Carolina has taken a health based approach for establishing Acceptable Ambient Levels (AALs) at the fenceline for TAPs.

The DAQ uses a Scientific Advisory Board (SAB) to evaluate available scientific information for the purpose of recommending AALs or safe exposure limits for air pollutants of health concern.

- The SAB is comprised of experts who are not state employees and have experience in toxicology, human studies, exposure assessment and risk assessment. The RTP area is exceptionally strong in these disciplines.

- All SAB deliberations are open to the public, transparent and include multiple opportunities for comment and input by interested citizens and the regulated community.
- The SAB uses a consistent strategy to generate AAL recommendations. This strategy involves evaluation of all relevant scientific information, presentations from other experts and comparisons with actions from other states.
- Draft recommendations are published with an invitation for further public comment before they are finalized.
- The SAB provides an estimate of human health risks under various exposure scenarios for multiple toxic endpoints if a chemical has more than one toxic effect,
- The SAB does not consider economic impact. This is the job of DAQ and the EMC. We only provide a reliable estimate of risks.

The SAB has provided recommendations for a wide array of chemicals over the last 20 years. Examples include:

- Mercury—involved working with DHHS and DWQ to help establish reasonable fish advisories
- Methylene Chloride
- Formaldehyde
- Hydrogen Sulfide
- Butadiene

The SAB recommendations in most cases are less stringent than would be calculated using EPA's estimates of risk. This is because available scientific information is used to replace default assumptions.

Reasons why the Air Toxics Program is Important for North Carolina

- Most, if not all, states have an air toxic program to protect the health of its citizens and I understand that several states regulate more toxic chemicals than North Carolina
- Since North Carolina emits more pollutants than most states, the idea of abolishing or dismantling the program makes no sense from a public health perspective.
- The Federal government has left it up to the states to monitor fenceline levels of air pollutants. It is important to distinguish between the role of the Federal government in permitting and monitoring.

- Many facilities are not required to install maximum achievable control technologies
- Business leaders, citizens and developers need to have confidence that their air is safe in their communities.
- The air toxics program has established an open transparent process to use the best science available to estimate risks from exposure to TAPs.
- Many diseases including cancer, cardiovascular disease and asthma are caused by exposure to air pollutants.
- Polls indicate that citizens believe strongly that air quality is important.

It is the responsibility of the state legislature to protect the health of North Carolina citizens. An effective Air Toxics program is important in fulfilling this responsibility.

MANUFACTURERS AND CHEMICAL INDUSTRY COUNCIL
OF NORTH CAROLINA

Presentation to the Environmental Review Commission

12 October 2011

Preston Howard

Eliminate State Air Toxics Program



My Goals Today

- Review the history of the NC Air Toxics Program
- Compare the NC Program to the Federal Air Toxics Program
- Discuss the impacts of the program on manufacturing competitiveness
- Put "38 Million Pounds" in context
- Convince you that the State Air Toxics Program needs to be reformed

History - NC Air Toxics Program

- ThermalKEM -late 80s/early 90s Hazardous Waste Incinerator
- No effective State or EPA program at that time to regulate air toxics
- Gov. Martin and Legislature direct DENR to adopt rules
- 1990 EMC adopted Air Toxics Rule / Congress enacts Title V Program

Both target toxic air emissions from industrial stationary sources

- NC not alone – in absence of an effective federal program, most states adopt state air toxic programs during this time
- 1996 – Department, business leaders, and environmental community negotiate a rule amendment to avoid wasteful spending by industry – known as the "combustion source exemption"
- May 2009 EMC repealed combustion source exemption; potentially wasteful spending can no longer be avoided; suppresses innovation, modernization, energy efficiency, and job growth

Federal Program

- 1990 Amendments to the Clean Air Act created an effective federal program
- Congress directed EPA to establish Maximum Achievable Control Technology (MACT) for wide range of industries
- In establishing MACT for existing sources, must set the "floor" of control at the average level of control achieved by the top 12% of all existing sources in a particular industry category)
- EPA establishes the "floor" at the top 12% and all existing sources must comply
- New sources must install the most stringent controls achieved by any MACT source in operation anywhere
- Thus far EPA has adopted >100 MACTs (larger sources) and Standards for 40 of 70 identified Area Sources (small sources)

EXAMPLES

- MACT Sources

  Chemical Plants – Paper Mills - Brick Plants – Utility Boilers – Furniture Plants – Certain Hospitals – Adhesive Tape Plants – University Boilers – Boat Builders – Military Facilities – Food Processors – Pharmaceutical Plants – Fiberglass Plants – Plastics Plants – Truck Plants – Textile Plants – Glass Plants – Lumber and OSB Mills

- Area Sources

  Auto Body Shops – Dry Cleaners – Metal Fabricators – Hospital Sterilizers – Institutional & Commercial Boilers – Municipal and County Landfills – Feed Mills – Wastewater Treatment Plants – Stationary Internal Combustion Engines (e.g. generators)

Following Adoption of the Federal Program

- Some states repealed their air toxics programs and rely solely on the federal program (e.g., MS)

- Those states that didn't repeal their air toxics programs altogether chose to significantly modify their programs to avoid regulation of an individual source under both the state and federal programs (e.g., VA, SC)

- **NC chose not to modify its program**

Comparison between the State and Federal Programs

NC Air Toxics Program

- 97 regulated chemicals
- Focus is on property line concentration
- No reduction in emissions is necessarily required
- No reduction target specified

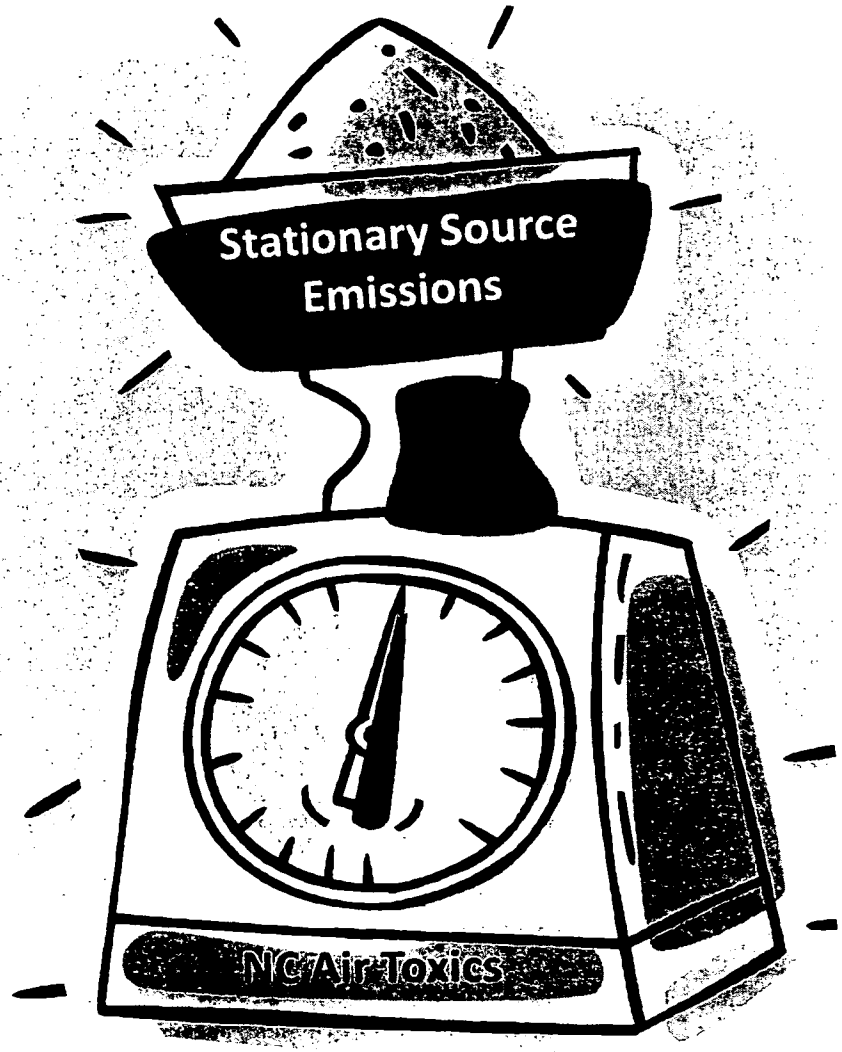
EPA MACT Program

- 187 regulated chemicals
- 2 Step Compliance Focus
- 1st – Reduce emissions at the stack (existing = average of top 12%; new = most stringent in operation)
- 2nd – Evaluate / reduce property line concentration ("residual risk")
- Established reduction target of 2 Billion pounds in US

The State Program Affects Our Competitiveness

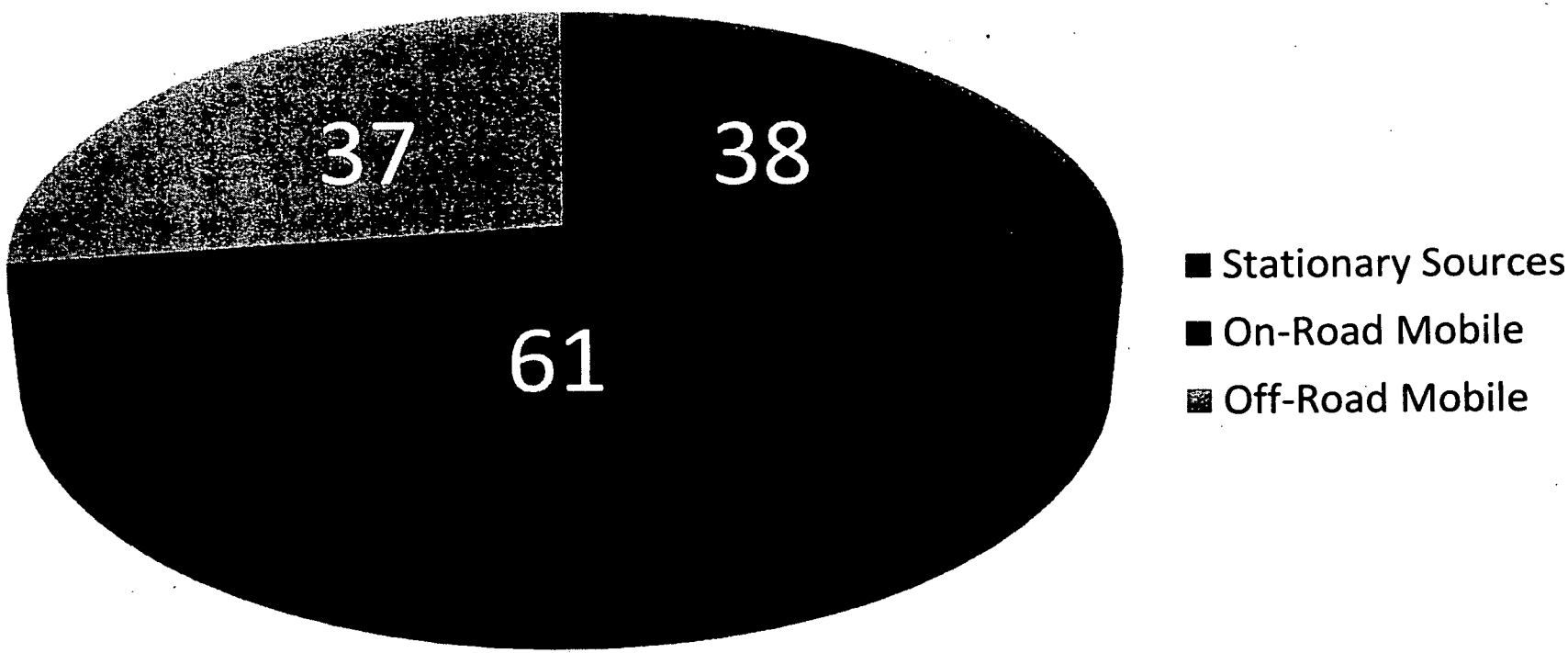
- In the global market our companies need flexibility to change quickly in order to remain competitive
- Modeling every change increases costs and time from concept to production – often with little or no environmental benefit
- Dual regulation of individual sources by both State and Federal programs results in unnecessary and costly permit delays that are not experienced in our neighboring states
- Startup in other SE states – quicker & less costly
- Project costs and time lines matter in today's competitive marketplace!

"38 MILLION POUNDS"

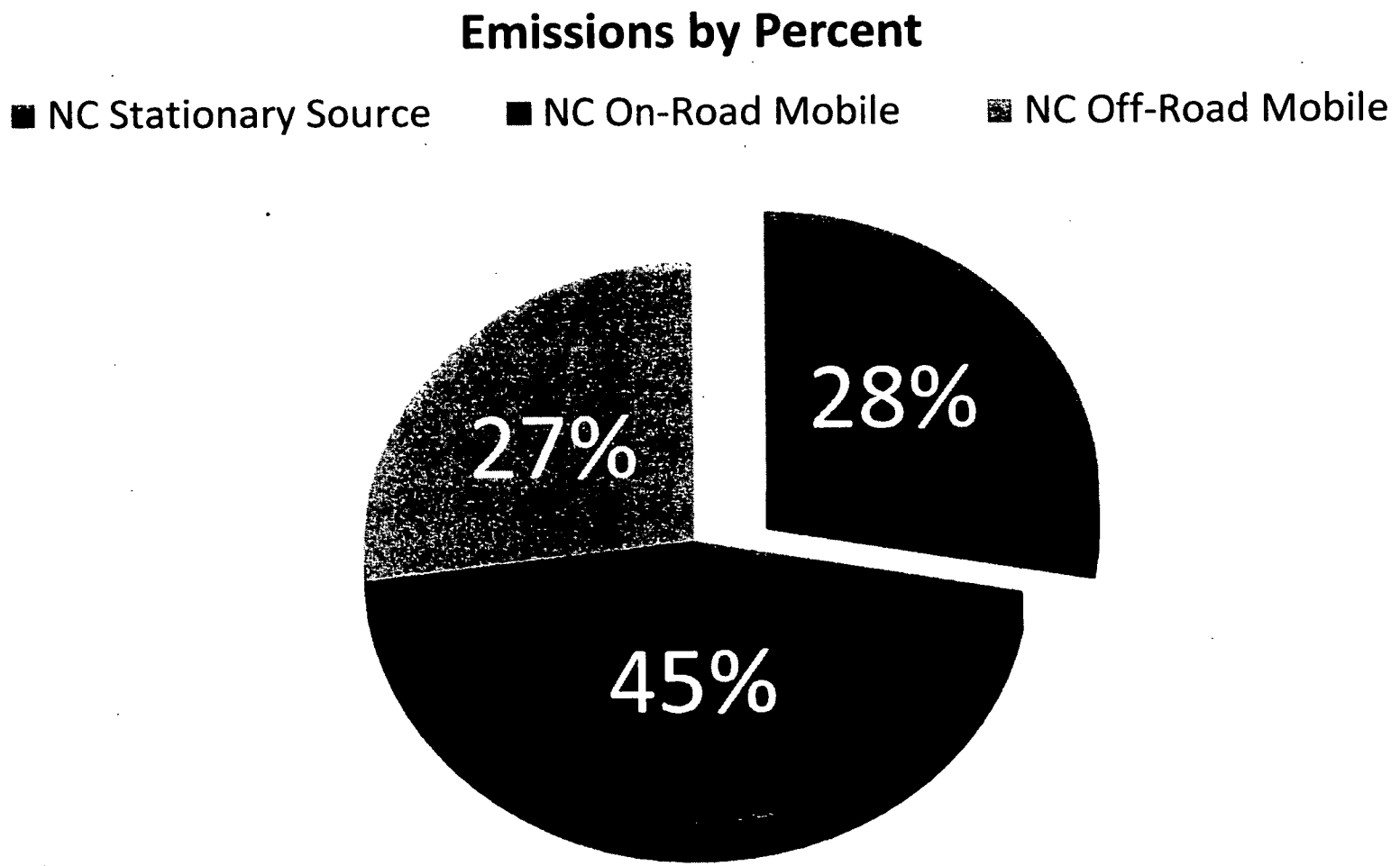


NC Air Toxics Emissions

Emissions in Million Pounds



NC Air Toxics Emissions Summary



MACT is Working in NC!



Summary

- The MACT program is resulting in major reductions in TAPs and HAPs
- NC's regulation of air toxics is out-of-step with other states in the southeast
- Being out-of-step is negatively impacting the competitiveness of NC companies
- Responsible reform of the NC Air Toxics Program is long overdue

Reform the State Air Toxics Program

- Our goal is not to eliminate the program, but instead to reform the program
- We want to keep NC competitive by being able to produce our products in NC just as efficiently as in VA or SC
- MCIC and its member companies stand ready to work with the Department and the General Assembly on responsible reforms to the State Air Toxics Program

Preston Howard

MCIC
MANUFACTURERS AND CHEMICAL INDUSTRY COUNCIL
OF NORTH CAROLINA

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NCDENR
Sept. 22, 2011

Proposed Outline of the Oil and Gas Study Under Session Law 2011-276[1]

Section 1 – Potential Oil and Gas Resources

A. Overview of the Triassic basins
- Sanford sub-basin of the Deep River Basin
- Dan River Basin
- Durham and Wadesboro sub-basins of the Deep River Basin
- Buried Coastal Plain basins

B. Estimates of technically recoverable gas
- Sanford sub-basin
- Dan River Basin

C. Anticipated industry behavior
- Rates of well drilling
- Rates of gas extraction

Section 2 – Oil and Gas Exploration and Extraction

A. How hydrocarbons are generated and trapped in the Earth

B. Methods used to find hydrocarbons
- Geophysical methods
  - Seismic reflection
  - Gravity and magnetics
- Lithologic and geophysical logs
- Organic geochemistry indicators

C. Methods to extract hydrocarbons
- Conventional drilling and well treatment
- Horizontal drilling
- Hydraulic fracturing

Section 3 – Potential Infrastructure Impacts

A. Water supply
- Existing water sources
- Existing water use
- Projected water demand (based on local water supply plans)
- Expected additional water use for drilling and hydraulic fracturing

[1]Although the study language in Session Law 2011-276 speaks in terms of all of the state's oil and gas resources, the study will focus on the shale gas resource that has been identified in the Triassic Basin. The study will note where any findings and recommendations may have broader application to other potential oil and gas resources.

B. Road and bridge infrastructure
C. Pipeline availability
D. Wastewater treatment
    - Existing wastewater treatment capacity
    - Wastewater treatment needs associated with oil and gas activity (both industrial and domestic wastewater)

Section 4 -- Potential environmental impacts

A. Constituents and contaminants associated with hydraulic fracturing
B. Groundwater impacts
    - Location of water supply wells (public and private)
    - Potential for contamination by constituents of fracturing fluids
    - Potential for methane release
C. Process wastewater
    - Disposal
    - Potential for recycling
D. Stormwater management
    - Environmentally sensitive site design
    - Erosion and sedimentation
    - Post-development runoff
    - Surface spills and releases from the well pad
E. Air quality impacts
    - Air emissions
    - Current permitting requirements
F. Impacts on fish, wildlife and important natural areas
    - Threatened and endangered species
    - Location of parks, designated state nature preserves, other significant natural areas
G. Management and reclamation of drilling sites (including orphaned sites)
H. Management of naturally occurring radioactive materials (NORM) generated by the drilling and production of natural gas
I. Potential for seismic activity
J. Solid and hazardous waste generated in the extraction process

Section 5 – Potential economic impacts

A. Estimate of jobs created
   - Temporary vs. permanent jobs
   - Industry use of local labor vs. imported labor

B. Comparison of existing bonding requirements to those in other oil and gas states

C. Comparison of existing severance taxes to severance taxes or royalty payments in other oil and gas states

D. Fiscal impacts to local government (infrastructure and services)

E. Use of special assessments

F. Estimate of revenue generated by severance taxes or royalties at levels comparable to other oil and gas states

G. Fees for permitting of oil and gas exploration and extraction activities
   - Current environmental permitting fees in North Carolina
   - Fees in other oil and gas producing states
   - Recommendations for new or modified permit fees

H. Additional state resources needed to provide regulatory oversight

I. Other recommended uses for oil and gas revenue
   - Improvement of water and wastewater infrastructure
   - Remediation of contaminated sites
   - Land and water conservation

Section 6 – Potential social impacts

A. Impacts on nearby communities from drilling operations
   - Housing availability
   - Property values
   - Demand for social services

B. Impacts on quality of life within nearby communities, including impacts on:
   - Recreational activities
   - Commercial and residential development
   - Noise from construction and drilling operations
   - Visual impacts from construction and drilling operations

Section 7 – Proposed regulatory framework

A. Guidance for development of a regulatory framework
   - STRONGER standards for state oil and gas programs

- State-by-state review of oil and gas programs
- Other sources of recommended standards
- Public comment
- Existing state policy

B. Recommended policies to guide regulation of oil and gas development
C. Recommended regulatory framework
- Public participation
- Interagency coordination
- Criteria for permit issuance or denial
- Scope and frequency of inspection
- Compliance and enforcement procedures
- Data management

Section 8 – Consumer protection and legal issues

A. Mineral leases
B. Surface landowner rights
C. Disclosure to landowners (both surface and subsurface)
D. Compensation for damages

Section 9 – Other issues

Appendix Session Law 2011-276
Summary of Public Comment

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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COMMISSION CLERKS

October 12, 2011

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on September 28, 2011. All reports are available online on the Commission website (**http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received**). If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or **mariahm@ncleg.net** for assistance.

A. The followings reports have been submitted by the Environmental Management Commission (EMC) and are being distributed in connection with today's agenda as follows:

Quarterly reports by the EMC as to its operations, activities, programs, and progress during the previous quarters. January 15, 2011, April 15, 2011, July 15, 2011, and October 15, 2011. Statutory Authority: G.S. 143B-282(b). ***Agenda Item #7***

B. The following reports have been submitted and may be distributed in conjunction with a presentation at a future meeting of the Commission.

1) Department of Agriculture and Consumer Services

a. Annual report on the Department of Agriculture and Consumer Service's management activities at DuPont State Recreational Forest during the preceding fiscal year and plans for management of DuPont State Recreational Forest for the upcoming fiscal year. October 1, 2011. Statutory Authority: G.S. 106-857 (i).

b. Annual report on animal waste management performance standards for swine farms, the Lagoon Conversion Program and the Swine Farm Waste Management System Conversion Account. October 1, 2011. Authority: S.L. 2007-523, Sec.2(f).

2) Department of Administration

a. Annual consolidated report on the implementation of the Sustainable Energy Efficient Buildings Program. October 1, 2011. Statutory Authority: G.S. 143-135.39(f) and (g).

b. Annual report on the number of new passenger motor vehicles that are purchased, the savings or costs for the purchase of vehicles, and the quantity and cost of fuel saved for the previous fiscal year. October 1, 2011. Statutory G.S. 143-341(8)(i)(2b).

3) Utilities Commission

a. Annual report on the Renewable Energy and Energy Efficiency Portfolio Standard (REPS). October 1, 2011. Statutory Authority: G.S. 62-133.8(j).

b. Biennial report on the actual results of the cost allocations for electric utilities involving REPS costs, demand-side management and energy efficiency programs costs, and certain fuel and fuel-related costs. October 1, 2011. Authority: S.L. 2007-397, Sec. 14.

4) Department of Environment and Natural Resources

a. Annual report on three river basin advisory commissions (Catawba/Wateree River Basin Advisory Commission, the Roanoke River Basin Advisory Commission, and the Yadkin/Pee Dee River Basin Advisory Commission). October 1, 2011. Statutory Authority: G.S. 77-117.

b. Annual report on summary of changes to the State Parks System Plan during the 2009 -2010 fiscal year (*plan not revised during 2010-2011 fiscal year*). Oct 1, 2011. Statutory Authority: G.S. 113-44.11.

c. Annual report on the Parks and Recreation Trust Fund, Fiscal Year 2009-2010. October 1, 2011. Statutory Authority: G.S. 113-44.15(c).

d. Annual report on implementation of the Sedimentation Pollution Control Act of 1973. October 1, 2011. Statutory Authority: G.S. 113A-67.

e. Annual report on the Conservation Easement Program. October 1, 2011. Statutory Authority: G.S. 113A-235(c).

f. Annual report on the North Carolina Hazardous Waste Management Plan. October 1, 2011. Statutory Authority: G.S. 130A-294(i).

g. Annual report on the Effectiveness of the Brownfields Property Reuse Act. October 1, 2011. Statutory Authority: G.S. 130A-310.40.

h. Annual report on the Mercury Minimization Plan. October 1, 2011. Statutory Authority: G.S. 130A-310.57.

i. Annual report on the implementation of stormwater rules and programs. October 1, 2011. Statutory Authority: G.S. 143-214.7(e).

j. Annual report on Basinwide Water Quality Management Plans. October 1, 2011. Statutory Authority: G.S. 143-215.8B(d).

k. Annual report on the compliance/enforcement of water quality laws for facilities that discharge into surface waters. October 1, 2011. Statutory Authority: G.S. 143-215.9A.

l. Annual report on permitting and inspecting animal waste management systems/Animal Waste Compliance Report. October 1, 2011. Statutory Authority: G.S. 143-215.10M.

m. Annual report on the status of leaking petroleum underground storage tanks, the State cleanup fund, and the Groundwater Protection Loan Fund. September 1, 2011. Statutory Authority: G.S. 143-215.94M, as amended by S.L. 2002-148, Sec. 7.

n. Annual report on the progress in developing and implementing the Coastal Habitat Protection Plan. September 1, 2011. Statutory Authority: G.S. 143B-279.8(e).

o. Annual report by the Drought Management Advisory Council. October 1, 2011. Statutory Authority: G.S. 143-355.1(g).

p. Annual report on acquisitions made from the Natural Heritage Trust Fund. October 1, 2011. Statutory Authority: G.S. 113-77.9(e), as amended by S.L. 2009-484, Sec. 14.

q. Annual report on the evaluation on the Surface Water Identification Training and Certification Program. October 1, 2011. Authority: 2010-180, Sec. 4 (b).

r. Annual report on the implementation of permitting the construction of a terminal groin under the pilot program. September 1, 2011. Authority: S.L. 2011-387.

ENVIRONMENTAL MANAGEMENT COMMISSION

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

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October 12, 2011

TO: ENVIRONMENTAL REVIEW COMMISSION
Jeff Hudson, Commission Counsel, Environmental Review Commission

FROM: Stephen T. Smith, Chair, Environmental Management Commission

RE: EMC Quarterly Report

Enclosed please find the quarterly report of the Environmental Management Commission on its operations, activities, programs and progress for the period July 1, 2011 to September 30, 2011.

Attachment

cc: Robin Smith, Assistant Secretary for Environment, NCDENR
Coleen Sullins, Director, DWQ, NCDENR
Dexter Matthews, Director, DWM, NCDENR
Sheila Holman, Director, DAQ, NCDENR
Kari Barsness, Director, LIA, NCDENR
Mariah Matheson, Research Division, NC General Assembly

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
QUARTERLY REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION

Covering the period July 1, 2011 to September 30, 2011

Per the requirements of G.S. 143B-282(b), the Environmental Management Commission (EMC) is submitting this quarterly report covering the period of July 1, 2011 to September 30, 2011 on the EMC's operations, activities, programs and progress.

I. Nutrient Control Strategies Sections 2, 3, and 4 of Session Law 2005-190 (as amended by SL 2006-259 and SL 2009-486)

Nutrient Control Criteria – Section 2(b)

Per Section 2(b), the EMC continues to assess and identify nutrient control strategies and criteria necessary to prevent excess nutrient loading in each drinking water supply reservoir. The EMC is currently considering modifications to the chlorophyll-a surface water quality standard and will be hosting a forum addressing nutrient control issues in early 2012.

Falls Lake - Section 3

The EMC is required to report its progress in assessing, identifying and adopting nutrient control strategies necessary to prevent excess nutrient loading in the Falls Lake water supply reservoir. Following an extensive stakeholder and rule-making process, permanent rules went into effect on January 15, 2011. Major actions are to be initiated over a 10-year first stage of implementation, with potential adaptive requirements under a second stage. Noteworthy groundwork occurred this quarter with local governments finalizing and submitting new development stormwater programs to the Division of Water Quality (DWQ) for review and subsequent approval by the EMC (potentially January 2012). In August, staff of Division of Soil and Water Conservation and DWQ held the first meeting of a Watershed Oversight Committee that will implement the Agriculture rule. This committee is charged with overseeing farmer registration by January 2012 and then reviewing, updating and seeking EMC approval of agricultural accounting methods in March 2012.

Jordan Lake - Section 4 of Session Law 2005-190

Section 4 requires the EMC to report on progress toward developing and implementing a nutrient management strategy for reservoirs including Jordan Lake. The final set of Jordan Lake rules went into effect in August 2009. Timeframes for most new actions under the rules fall within nine years of effective date of the rules.

The following actions were taken this quarter to support implementation. The Nutrient Scientific Advisory Board held three meetings this quarter to begin developing a set of best management practices for reducing nutrient runoff from existing developed areas. The Board will also develop recommendations on how much nutrient reduction credit should be allowed for each management practice. The Board's recommendations are to be presented to the Secretary of DENR in July 2012. These recommendations will be used to implement the requirements in the Jordan Lake rules for reduction in nutrient contributions from existing developed areas. The Board's watershed modeling subcommittee also met several times. The Watershed Oversight Committee (WOC), which administers requirements of the Jordan agriculture rule, held one meeting this quarter to finalize accounting recommendations, which were then approved by the EMC in July for use in annual agricultural progress reporting. Local governments submitted new development stormwater programs to DWQ in September for EMC approval by May 2012 and summer 2012 local implementation.

II. EMC Rulemaking Approvals

Amendments to the National Ambient Air Quality Standards (NAAQS) for Sulfur Dioxide (SO2) and Nitrogen Dioxide (NO2)

Rule 15A NCAC 02D .0402, Sulfur Oxides, was amended to reflect changes to the NAAQS for sulfur dioxide. On June 2, 2010, the U.S. Environmental Protection Agency (EPA) establishing a new 1-hour standard at a level of 75 ppb sulfur dioxide (SO2) and revoked the two existing primary standards of 140 ppb evaluated over 24-hours and 30 ppb evaluated over an entire year because they will not provide additional public health protection given a 1-hour standard at 75 ppb. The existing 24-hour and annual standards will remain in effect until one year after the effective date of initial designations under Section 107(d) of the Clean Air Act. Amendments to 15A NCAC 02D .0402 are necessary to reflect the federal rule change.

Rule 15A NCAC 02D .0407, Nitrogen Dioxide, was amended to reflect changes to the NAAQS for nitrogen dioxide. On January 22, 2010, the EPA set a new 1-hour NO2 standard at the level of 100 parts per billion (ppb). The form for the 1-hour NO2 standard is the 3-year average of the 98th percentile of the annual distribution of daily maximum 1-hour average concentrations. The EPA also retained the current annual average NO2 standard of 53 ppb. No one commented at the hearing. The only comment received was a letter stating that EPA Region 4 had completed review of the submittal and had no comments at this time. The EMC adopted the amendments on July 14, 2011. The rules were subsequently approved by the Rules Review Commission (RRC) on August 18, 2011, and became effective September 1, 2011.

Technical Revisions to the Jordan Nutrient Rules

The Jordan Nutrient Rules went into effect on August 11, 2009, and are currently being implemented. DWQ staff had found that six of the rules required minor technical revisions. The RRC approved the rules in August 2011.

Reclassification of Dan River Segments in Caswell County (Roanoke River Basin) to Class WS-IV and WS-IV CA

The city of Roxboro requested that Dan River segments (Caswell County, Roanoke River Basin) be reclassified from Class C to WS-IV CA and WS-IV PA to allow construction of a water supply intake in the river. The new intake will initially serve Roxboro and the towns of Yanceyville and Milton with an emergency potable water supply source and will eventually become a permanent potable water supply source. More than 10 objections to this reclassification were sent to the RRC; therefore, it will not become effective until after legislative review in 2012.

Reclassification of the French Broad River (Henderson County) to Class Water Supply-IV Critical Area

The city of Hendersonville requested that a French Broad River segment in Henderson County (French Broad River Basin) be reclassified to WS-IV CA for an emergency water supply intake. Comments were accepted April 1, 2011 through May 31, 2011, and no comments against the reclassification were received. The RRC will review in October or November 2011.

III. Other EMC Actions

Approved Petition for Rulemaking to Amend the Groundwater Quality Standard for 1,1-Dichloroethylene

In March 2011, Rhodia Inc. filed a petition for rulemaking requesting the amendment of the groundwater standard for 1,1-dichloroethylene (1,1-DCE) contained in 15A NCAC 02L .0202(g)(59) from 7 ug/L to 350 ug/L, based on current data. The Division of Water Quality is preparing to move forward with rulemaking per the EMC's directions.

Declined to adopt the Proposed Rules for Monitoring at Animal Feeding Operations

The Waterkeeper Alliance, et al. filed rulemaking petitions during the fall of 2007 to require water quality monitoring by animal operations covered by the NPDES General Permit and State General Permit. The EMC granted the petition in May 2008, directing staff to gather more input on draft rules before proceeding to the public comment process. As a result of input during four stakeholder meetings, changes were recommended to the proposed rules. The EMC approved the rules for public notice in November 2008. Four public hearings were held during the 60-day comment period in 2009. Another comment period was conducted in June 2010. In 2010, DENR management directed DWQ to pursue funding for a study that could help to answer some of the issues raised by industry during the comment periods about the necessity and format of monitoring at animal operations. In May 2011, DWQ and the United States Geological Survey finalized a contract to perform a multi-year study of possible surface water impacts related to animal operations. At their September meeting the EMC declined to adopt the proposed rule and will use the multi-year study to assist in identifying the best monitoring systems.

Approved the Final French Broad and New River Basin Plans

The French Broad River Basin and New River Basin Plans were developed per G.S. 143-215.8B to guide DWQ's actions in the French Broad and New River Basins over the next five years and beyond utilizing existing rules and policies.

Approved the request to proceed to public hearing with the proposed reclassification of the Neuse River and associated Quarry in Johnston County to Class WS-IV (PA) and WS-IV CA

Johnston County has requested that portions of the Neuse River and an abandoned quarry be reclassified to allow construction of the public water supply intake and utilization of the quarry's water as a public water supply. The quarry will receive water from a proposed Neuse River intake, and will be reclassified to Water Supply-IV (WS-IV) Critical Area (CA) to meet water demands projected through 2050. The subject portions of the Neuse River are to be reclassified to WS-IV CA and WS-IV (Protected Area or PA). The draft fiscal analysis' quantifiable results revealed a one-time cost of approximately $600 to the state and $500 to Johnston County. The proposed effective date for this reclassification is July 1, 2012.

Approved the request to proceed to public hearing for a temporary rule to defer carbon dioxide emissions from combustion of biomass from prevention of significant deterioration and Title V requirements

In September the EMC approved a request to proceed to hearing on a temporary amendment to 15A NCAC 02D .0544, Prevention of Significant Deterioration for Greenhouse Gases, to defer carbon dioxide (CO_2) emissions from combustion of biomass from consideration for prevention of significant deterioration (PSD) purposes for a period of three years. On July 20, 2011, the EPA put in place a three year deferral of consideration of these emissions for purposes of the federal PSD permitting program. The amendment to the state rule is proposed to reflect the recent federal deferral of such emissions in the state PSD program.

October 12, 2011 Stephen T. Smith

Stephen T. Smith
Chair, Environmental Management Commission

ENVIRONMENTAL MANAGEMENT COMMISSION

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Forrest R. Westall, Sr.

July 12, 2011

TO: ENVIRONMENTAL REVIEW COMMISSION
Jeff Hudson, Commission Counsel, Environmental Review Commission

FROM: Stephen T. Smith, Chair, Environmental Management Commission

RE: EMC Quarterly Report

Enclosed please find the quarterly report of the Environmental Management Commission on its operations, activities, programs and progress for the period April 1, 2011 to June 30, 2011.

Stephen T. Smith

Attachment

cc: Robin Smith, Assistant Secretary for Environment, NCDENR
Coleen Sullins, Director, DWQ, NCDENR
Dexter Matthews, Director, DWM, NCDENR
Sheila Holman, Director, DAQ, NCDENR
Kari Barsness, Director, LIA, NCDENR
Mariah Matheson, Research Division, NC General Assembly

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
QUARTERLY REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION

Covering the period April 1, 2011 to June 30, 2011

Per the requirements of G.S. 143B-282(b), the Environmental Management Commission (EMC) is submitting this quarterly report covering the period of April 1, 2011 to June 30, 2011 on the EMC's operations, activities, programs, and progress.

I. Nutrient Control Strategies Sections 2, 3, and 4 of Session Law 2005-190 (as amended by SL 2006-259 and SL 2009-486)

Nutrient Control Criteria – Section 2(b)

Per Section 2(b), the EMC continues to assess and identify nutrient control strategies and criteria necessary to prevent excess nutrient loading in each drinking water supply reservoir. The EMC is currently considering modifications to the chlorophyll-a surface water quality standard and will be hosting a forum addressing nutrient control issues in early 2012.

Falls Lake - Section 3

The EMC is required to report its progress in assessing, identifying, and adopting nutrient control strategies and criteria necessary to prevent excess nutrient loading in the Falls Lake water supply reservoir. Following an extensive stakeholder and rule-making process, the permanent rules went into effect on January 15, 2011.

The Division of Water Quality (DWQ) staff gave a number of presentations this quarter to local governments and agricultural interests interpreting rule requirements to guide these affected parties' activities and development of plans. Local governments are required to submit New Development Stormwater Programs to DWQ by August 2011.

Jordan Lake - Section 4 of Session Law 2005-190

Section 4 requires the EMC to report on the progress of developing and implementing a nutrient management strategy for reservoirs including Jordan Lake. The set of Jordan Lake rules were effective by August 11, 2009.

The DWQ continues to implement the initial requirements of the Jordan rules. The Nutrient Scientific Advisory Board, which will assist in implementing existing development stormwater requirements, held three monthly meetings during this quarter to assist with development of the July 2012 report of findings. The Board developed and submitted its first annual progress report to the Secretary of the Department of Environment and Natural Resources (DENR) on 1 July 2011. The Watershed Oversight Committee, which administers requirements of the Jordan agriculture rule, held three meetings during this quarter and continues to meet to develop accounting processes to assess agriculture compliance. Their initial progress accounting will occur by August 2012.

II. EMC Rulemaking Approvals – None in this time period

III. Other EMC Actions

Approved Reappointment of Two Members to the Water Pollution Control System Operators Certification Commission (WPCSOCC).

Two WPCSOCC members were reappointed for three year terms by the Secretary of DENR and the EMC due to term expiration per NC General Statute 143B-301. Mr. Robert Dodson (City of Durham) and Mr. Gale D. Howell, Jr. (United Chemi-Con, Inc.) were reappointed to the WPCSOCC.

Approved request to proceed to Public Hearing on Proposed Revision of Injection Well Rules (15A NCAC 02C .0200)

The proposed revisions consist of organizational and technical changes to the existing injection well rules, which were last amended in 1997. An extensive stakeholder process was conducted in developing the proposed rules. Changes proposed make the rules easier to use, reduce regulatory requirements resulting in cost savings to the State and public, address technological changes, and provide for increased public notice. These modifications are needed to comply with federal requirements and to serve the public interest per Executive Order #70.

Approved request to proceed to Public Hearing with the Proposed Reclassification of the South Fork New River in Ashe and Watauga Counties (New River Basin) to include Class WS-IV (PA) and WS-IV CA

The Town of Boone has requested that portions of the South Fork New River be reclassified for water supply use. These classifications include the WS-IV (PA) and WS-IV CA designations. The reclassification is needed in order to construct a potable water supply intake, and thus serves the public interest per Executive Order #70. If reclassified, regulations affecting new development and wastewater discharges would apply in the proposed watershed, where there are currently no permitted wastewater dischargers or land application sites, and no known proposed wastewater discharges, land application sites, or development.

Approved request to proceed to Public Hearing with the Proposed Reclassification of the Haw River in Alamance, Caswell, Guilford, and Rockingham Counties (Cape Fear River Basin) from Class WS-V to Class IV (PA) and WS-IV CA

During the drought in 2002, the City of Greensboro ("City") received permission from the Division of Environmental Health and funding from the Division of Water Resources to construct and use an emergency intake on the Haw River. Continued use of the intake requires the reclassification of the surface waters draining to it, and thus, this proposal serves the public interest per Executive Order #70. Review of existing and applicable state and local government regulations led to the proposed WS-IV designation for these waters. If reclassified, regulations affecting new development and wastewater discharges would apply. There are no land application sites in the proposed critical area. None of three NPDES wastewater discharges and two permitted animal operations in the proposed watershed would be impacted by this proposal. In the proposed area, there are no known planned wastewater discharges and developments, and no known plans for existing wastewater discharges to become process industrial wastewater discharges.

Denied the petition for rulemaking to Amend the Underground Storage Tanks Secondary Containment Rules

The Steel Tank Institute Steel Plate Fabricators Association (STI) filed a petition to request the amendment of Underground Storage Tank (UST) secondary containment standards contained in 15A NCAC 02N .0903(a). The rule currently states: "Tanks must be protected from external corrosion in accordance with 40 CFR 280.20 (a)(1), (3), or (5)." The petition asked to change 15A NCAC 02N .0903(a) to read: "Tanks must be protected from external corrosion in accordance with 40 CFR 280.20 (a)(1), (2), (3), or (5)." The petition sought to allow double-walled steel tanks to be installed that do not have a thick protective fiberglass or plastic coating on the outer steel wall. These tanks are protected from corrosion by using cathodic protection systems (sacrificial anodes attached to the tanks or impressed current systems) that must be tested and maintained over time to ensure that the tanks are continuously protected. Staff of the Division of Waste Management recommended denial of the petition based on failures by tank owners and operators to properly test and maintain these tanks and on the low economic impact of the current rules.

July 12, 2011 Stephen T. Smith

Stephen T. Smith
Chair, N.C. Environmental Management Commission

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April 15, 2011

TO: ENVIRONMENTAL REVIEW COMMISSION
Jeff Hudson, Commission Counsel, Environmental Review Commission

FROM: Stephen T. Smith, Chair Environmental Management Commission

RE: EMC Quarterly Report

Enclosed please find the quarterly report of the Environmental Management Commission on its operations, activities, programs and progress for the period January 1, 2011 to March 31, 2011.

Stephen T. Smith

Attachment

cc: Robin Smith, Assistant Secretary for Environment, NCDENR
Coleen Sullins, Director, DWQ, NCDENR
Dexter Matthews, Director, DWM, NCDENR
Sheila Holman, Director, DAQ, NCDENR
Kari Barsness, Director, LIA, NCDENR
Mariah Matheson, Research Division, NC General Assembly

N.C. ENVIRONMENTAL MANAGEMENT COMMISSION QUARTERLY REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION

Covering the period January 1, 2011 to March 31, 2011

Per the requirements of G.S. 143B-282(b), the Environmental Management Commission (EMC) is submitting this quarterly report covering the period of January 1, 2011 to March 31, 2011 on the EMC's operations, activities, programs, and progress.

I. Nutrient Control Strategies Sections 2, 3, and 4 of Session Law 2005-190 (as amended by SL 2006-259 and SL 2009-486)

Nutrient Control Criteria – Section 2(b)

Per Section 2(b), the EMC continues to assess and identify nutrient control strategies and criteria necessary to prevent excess nutrient loading in each drinking water supply reservoir. The EMC is currently considering modifications to the chlorophyll-a surface water quality standard and in early 2012 will be hosting a forum addressing nutrient control issues.

Falls Lake - Section 3

The EMC is required to report its progress in assessing, identifying, and adopting nutrient control strategies and criteria necessary to prevent excess nutrient loading in the Falls Lake water supply reservoir. The following is an update on that progress. Following an extensive stakeholder and rule-making process, the permanent rules went into effect on January 15, 2011. Stakeholder meetings were held during January to get additional input on the model stormwater program required by the new rules. On January 27, 2011, Division of Water Quality (DWQ) staff, in collaboration with the Upper Neuse River Basin Association, met with the Falls Lake local governments and other interested stakeholders to review and accept input on the draft Falls Lake new development stormwater model program. On March 1, 2011, DWQ participated in a meeting with the Land Planning Committee of the Durham, Orange, and Chatham Counties Home Builder's Association to provide an overview of the recently approved Falls Lake new development stormwater rule and to answer homebuilder questions about rule implementation. At its March 10, 2011 meeting, the EMC approved DWQ's Falls Lake model program for new development stormwater, including a new nutrient accounting tool and a model ordinance. Local governments now have until August 2011 to develop and submit their local programs for EMC approval. On March 15, 2011, DWQ sent letters to the NPDES permitted wastewater treatment plants located in the Falls Lake watershed notifying them of their Stage I waste load allocations to be met by calendar year 2016.

Jordan Lake - Section 4 of Session Law 2005-190

Section 4 requires the EMC to report on the progress of developing and implementing a nutrient management strategy for reservoirs including Jordan Lake. The Jordan Lake rules became effective August 11, 2009.

The DWQ continues to implement the initial requirements of the Jordan rules. The EMC approved the remaining 3 of 32 local Jordan Buffer Programs at its January meeting, and these local governments had two months to begin implementing the programs. At its March meeting, the EMC approved the Division's model program for new development stormwater, including a new nutrient accounting tool and a model ordinance. Local governments now have until September 2011 to develop and submit their local programs for EMC approval. The Nutrient Scientific Advisory Board, which will assist in implementing existing development stormwater requirements, held three monthly meetings during this quarter to assist with development of the July 2012 report of findings. The Watershed Oversight Committee, which administers requirements of the Jordan agriculture rule, held three meetings during this quarter and continues to meet to develop accounting processes to assess agriculture compliance by August 2012.

II. EMC Rulemaking Approvals

Reclassification of a Southwest Creek Segment in Onslow County (White Oak River Basin) to Class SC

The EMC approved reclassification of a portion of Southwest Creek from approximately 0.5 mile upstream of Mill Run to the New River; about 2 miles of the creek. The rule change was necessary to reflect the saltwater nature of these waters and prevent incorrect surface water quality standards from being used in permitting and use assessment. This reclassification prevents this portion of Southwest Creek from being incorrectly rated as impaired.

Revisions to the Pretreatment Programs Rule (15A NCAC 2H .0900)

The revisions to the rules were made to make them consistent with Federal regulations, allowing publically owned treatment works (POTWs) access to all the EPA streamlining options and making some needed clarifications and corrections.

ule amendments and Rule Adoptions in Accordance with Session Law (S.L.) 2006-246 (Phase 2 Stormwater Rules) and 2008-211 (Coastal Stormwater Rules)

The revisions incorporated the stormwater requirements of S.L. 2006-246 (Phase II) and S.L. 2008-211 (Coastal Stormwater) into the EMC Rules. In accordance with the Session Laws, the rules are substantively identical to the provisions of the Session Laws, and have been reorganized and renumbered as necessary. The consolidation was done to provide ease of access to the requirements for all parties.

III. Other EMC Actions

Approval of Mecklenburg County's Local Rule regarding Hospital Medical and Infectious Waste Incinerator

On November 16, 2010, the Mecklenburg County Board of Commissioners held a public hearing and unanimously adopted amendments to the Mecklenburg County Air Pollution Control Ordinance (MCAPCO). The ordinance (MCAPCO Regulation 2.1206 "Hospital, Medical and Infectious Waste Incinerators"), as adopted, details the emission standards/ limits, and testing, monitoring, recordkeeping, and reporting requirements for hospital, medical and infectious waste incinerators in Mecklenburg County, per 40 CFR 60 Subpart Ce – "Emission Guidelines and Compliance Times for Hospital/ Medical/Infectious Waste Incinerators" The Mecklenburg County revision to 2.1206 requires a hospital medical and infectious waste incinerator to be in compliance with EPA's revised requirements by October 6, 2012.

Approved request to proceed to Public Hearing on Amendments to Ambient Standards for Nitrogen Dioxide (NO2)

15A NCAC 02D .0407, Nitrogen Dioxide, was amended to reflect changes to the National Ambient Air Quality Standard (NAAQS) for nitrogen dioxide. EPA modified the NAAQS for nitrogen dioxide on January 22, 2010.

Approved request to proceed to Public Hearing on Amendments to Ambient Standards for Sulfur Dioxide (SO2)

15A NCAC 02D .0402, Sulfur Oxides, was amended to reflect changes to the NAAQS for sulfur dioxide (SO2). EPA modified the primary NAAQS for SO2 on June 2, 2010.

pproved the Final Tar-Pamlico River Basinwide Water Quality Plan

The Tar-Pamlico Basinwide Water Quality Plan was developed per GS 143-215.8B to guide the Division's actions in the Tar-Pamlico River Basin over the next five years and beyond, utilizing existing rules and policies. The Commission approved the management actions set forth in this plan.

Approved the Model Programs for New Development Stormwater under Jordan and Falls Nutrient Strategies

The Jordan and Falls Lake nutrient rules went into effect on August 11, 2009 and January 15, 2011, respectively. Each includes a New Development Stormwater rule requiring local governments to implement local stormwater programs that require new development projects to meet nitrogen and phosphorus export targets to satisfy the specific nutrient strategy percent goals. The approved model programs will assist the local governments in implementing these requirements.

Approved request to proceed to Public Notice to Reclassify a French Broad River Segment as Critical Area "CA", for Hendersonville's WS-IV Water Supply Intake

The City of Henderson requested that a segment of the French Broad in Henderson County be reclassified to WS-IV CA to allow its use as an emergency water supply.

Approved revised Jordan Lake Local Buffer Programs for Alamance County, Morrisville, and Orange County

In September, the EMC reviewed 32 local buffer program ordinances and out of those requested the Alamance County, Morrisville and Orange County make revisions as their ordinances were not as stringent as required by the Jordan Lake buffer rules. Those revisions were made and approved by the Commission.

Approved Delegation of the Neuse Buffer Program to the Town of Morrisville

The City of Morrisville requested delegation of the Neuse Buffer Rules (15A NCAC 2B .0233 and .0242) which govern protection and maintenance of existing riparian buffers and the mitigation program for those buffers.

ril 15, 2011

Stephen T. Smith

Stephen T. Smith
Chair, N.C. Environmental Management Commission

ENVIRONMENTAL MANAGEMENT COMMISSION

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

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February 28, 2011

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable Pricey Harrison, Co-Chair, Environmental Review Commission
The Honorable Pryor Gibson, Co-Chair, Environmental Review Commission
The Honorable Bob Atwater, Co-Chair, Environmental Review Commission
The Honorable Dan Clodfelter, Co-Chair, Environmental Review Commission

FROM: Stephen T. Smith, Chair Environmental Management Commission SSSMITH

RE: EMC Quarterly Report

Enclosed please find the quarterly report of the Environmental Management Commission on its operations, activities, programs and progress for the period October 1, 2011 to December 31, 2010.

Attachment

cc: Coleen Sullins, Director, DWQ

N.C. ENVIRONMENTAL MANAGEMENT COMMISSION QUARTERLY REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION

Covering the period October 1, 2010 to December 31, 2010

Per the requirements of G.S. 143B-282(b), the Environmental Management Commission (EMC) is submitting this quarterly report covering the period of October 1, 2010 to December 31, 2010 on the EMC's operations, activities, programs, and progress.

I. Nutrient Control Strategies Sections 2, 3, and 4 of Session Law 2005-190 (as amended by SL 2006-259 and SL 2009-486)

Nutrient Control Criteria – Section 2(b)

Per Section 2(b), the EMC continues to assess and identify nutrient control strategies and criteria necessary to prevent excess nutrient loading in each drinking water supply reservoir. In March 2010, the EMC approved taking proposed modifications to the State's chlorophyll-a standard out for public hearing and comment as part of the Federal Clean Water Act required Triennial Review of Surface Water Quality Standards. Per the NC Administrative Procedures Act, a fiscal note is being developed. Public comment on the impact of the rule changes for use in the fiscal note closed September 7, 2010. Public hearings will be held upon completion of the fiscal note.

The Water Quality Committee (WQC) of the EMC also considered proposed rules that would implement proactive nitrogen and phosphorus controls for point and nonpoint sources to protect waters that exhibit the potential to exceed the chlorophyll-a standard. Several questions arose during the discussion of the proposed rules. The WQC deferred rulemaking and agreed to holding a forum that would compile the most recent scientific, economic and policy development information available on this complex issue. The forum is being planned for late 2011/early 2012.

Falls Lake - Section 3

The EMC is required to report its progress in assessing, identifying, and adopting nutrient control strategies and criteria necessary to prevent excess nutrient loading in the Falls Lake water supply reservoir. The following is an update on that progress.

Following an extensive stakeholder and rule-making process, the EMC approved the revised final Falls Lake Rules at their November 2010 meeting. The Rules Review Commission approved the final rules at their December 18, 2010 meeting. No letters of objection were received by the RRC. The permanent rules went into effect on January 15, 2011. Stakeholder meetings were held during January to get additional input on the model stormwater program. In March, the EMC will review the Falls Lake model stormwater program for approval.

Jordan Reservoir - Section 4 of Session Law 2005-190

Under this section, no new or increased nutrient loading allocation is allowed in the Jordan Reservoir watershed until a nutrient management strategy based on a calibrated nutrient response model is adopted into rules. The Jordan rules were adopted by the EMC and approved by the RRC in 2008. The 2009 General Assembly then approved eight of the rules and revised or replaced the other five rules. All of the rules were effective by August 11, 2009.

The Division of Water Quality continues to implement the initial requirements of the Jordan rules and perform outreach activities. At its September meeting, the Water Quality Committee of the EMC disapproved 3 of 32 local Jordan buffer programs. Those programs have been revised and the Water Quality Committee will act on them at the January 2011 meeting.

The Nutrient Scientific Advisory Board, which will assist in implementing existing development stormwater requirements, held three monthly meetings during this quarter to assist with development of the July 2012 report of findings.

The Division began developing a model new development program and continued to work with contractors developing a new accounting method and a model ordinance. A meeting was held with affected local governments to discuss the development of the new development model program. The EMC will review and act on the model program at the March 2011 meeting. The Watershed Oversight Committee, which administers requirements of the Jordan agriculture rule, has held one meeting and continues to meet to develop accounting processes to assess agriculture compliance by August 2012.

II. EMC Rulemaking Approvals

- Amendments on Hospital, Medical, Infectious Waste Incinerator Rules

  Rule 15A NCAC 02D .1206, Hospital, Medical, and Infectious Waste Incinerators, was amended to reflect the new federal emission limits, operating procedure requirements, recordkeeping and reporting requirements for the three North Carolina incinerators applicable to this Rule. Any new hospital, medical infectious waste incinerator will not be subject to this Rule; they will instead be required to meet all New Source Performance Standards (NSPS) found in 40 CFR Part 60. The EMC adopted a compliance date of July 1, 2013, compared to the federal rule's October 6, 2014 compliance date.

- Adoption of Prevention of Significant Deterioration (PSD) Requirements to Incorporate Greenhouse Gas (GHG) Tailoring Provisions

  Rule 15A NCAC 02D .0544 was adopted to avoid unnecessary burden on the regulated community and the permitting agency which otherwise would stem from the interplay of recently amended federal regulations with existing state regulations. Absent this state rule change numerous additional emitting sources would be required to seek permits under the PSD program creating an unnecessary burden on the regulated community and overwhelming the permitting agencies.

- Amendments to Prevention of Significant Deterioration (PSD) and Nonattaiment New Source Review (NA NSR) Rules to Include PM2.5

  Amendments to New Source Review program Rules 15A NCAC 02D .0530, Prevention of Significant Deterioration, and .0531, Sources in Nonattainment Areas, set the significant level (used to determine if a proposed project is a major modification requiring a permit) for the PM2.5 precursor NOx in North Carolina to 140 tpy instead of 40 tpy as listed in the federal emissions guidance document. The significance rate is based upon the fact that monitoring and modeling data demonstrates NOx to be a lesser contributor to the formation of PM2.5 than SO2 by a factor of 3.5 in North Carolina. The amendments also included technically modified rule language to better reflect USEPA's language structure regarding notification of Federal Land Managers of PSD permit applications.

- Amendments of Reclaimed Waters Rule

  General Statute 143-355.5 directs the Commission to encourage and promote safe and beneficial reuse of treated wastewater as an alternative to surface water dischargers and specifically directs the Commission to adopt the rules that identify acceptable uses of reclaimed water, facilitate permitting and establish standards that are specific to the intended uses of the reclaimed water. These modifications to 15A NCAC 02U, 02T.0113, 02T .0506 and 02T .0901-.0915 provide appropriate protection of public health and the environment and increased flexibility that facilitates the safe use of reclaimed water.

- Adoption of Nutrient Rules for Falls Reservoir *(see I. Nutrient Control Strategies on previous page)*

III. Other EMC Actions

- Approved the Interbasin Transfer Certificate for Greenville Utilities Commission, Town of Farmville, Town of Winterville, and Green County

  The certificate allows the transfer 8.3 million gallons per day (MGD) of surface water from the Tar River Basin to the Contentnea Creek Basin (a sub-watershed of the Neuse River Basin) and up to 4.0 MGD from the Tar River Basin to the Neuse River Basin; and grants the petitioners the ability to transfer an additional 1 MGD in an emergency from the Tar to the Contentnea and an additional 200,000 gallons per day in an emergency from the Tar to the Neuse.

February 10, 2011

Stephen T. Smith

Stephen T. Smith
Chair
N.C. Environmental Management Commission

NCDENR
Sept. 22, 2011

Proposed Outline of the Oil and Gas Study Under Session Law 2011-276[1]

Section 1 – Potential Oil and Gas Resources

A. Overview of the Triassic basins
- Sanford sub-basin of the Deep River Basin
- Dan River Basin
- Durham and Wadesboro sub-basins of the Deep River Basin
- Buried Coastal Plain basins

B. Estimates of technically recoverable gas
- Sanford sub-basin
- Dan River Basin

C. Anticipated industry behavior
- Rates of well drilling
- Rates of gas extraction

Section 2 – Oil and Gas Exploration and Extraction

A. How hydrocarbons are generated and trapped in the Earth

B. Methods used to find hydrocarbons
- Geophysical methods
  - Seismic reflection
  - Gravity and magnetics
- Lithologic and geophysical logs
- Organic geochemistry indicators

C. Methods to extract hydrocarbons
- Conventional drilling and well treatment
- Horizontal drilling
- Hydraulic fracturing

Section 3 – Potential Infrastructure Impacts

A. Water supply
- Existing water sources
- Existing water use
- Projected water demand (based on local water supply plans)
- Expected additional water use for drilling and hydraulic fracturing

[1]Although the study language in Session Law 2011-276 speaks in terms of all of the state's oil and gas resources, the study will focus on the shale gas resource that has been identified in the Triassic Basin. The study will note where any findings and recommendations may have broader application to other potential oil and gas resources.

B. Road and bridge infrastructure
C. Pipeline availability
D. Wastewater treatment
    - Existing wastewater treatment capacity
    - Wastewater treatment needs associated with oil and gas activity (both industrial and domestic wastewater)

Section 4 -- Potential environmental impacts

A. Constituents and contaminants associated with hydraulic fracturing
B. Groundwater impacts
    - Location of water supply wells (public and private)
    - Potential for contamination by constituents of fracturing fluids
    - Potential for methane release
C. Process wastewater
    - Disposal
    - Potential for recycling
D. Stormwater management
    - Environmentally sensitive site design
    - Erosion and sedimentation
    - Post-development runoff
    - Surface spills and releases from the well pad
E. Air quality impacts
    - Air emissions
    - Current permitting requirements
F. Impacts on fish, wildlife and important natural areas
    - Threatened and endangered species
    - Location of parks, designated state nature preserves, other significant natural areas
G. Management and reclamation of drilling sites (including orphaned sites)
H. Management of naturally occurring radioactive materials (NORM) generated by the drilling and production of natural gas
I. Potential for seismic activity
J. Solid and hazardous waste generated in the extraction process

Section 5 – Potential economic impacts

A. Estimate of jobs created
   - Temporary vs. permanent jobs
   - Industry use of local labor vs. imported labor

B. Comparison of existing bonding requirements to those in other oil and gas states

C. Comparison of existing severance taxes to severance taxes or royalty payments in other oil and gas states

D. Fiscal impacts to local government (infrastructure and services)

E. Use of special assessments

F. Estimate of revenue generated by severance taxes or royalties at levels comparable to other oil and gas states

G. Fees for permitting of oil and gas exploration and extraction activities
   - Current environmental permitting fees in North Carolina
   - Fees in other oil and gas producing states
   - Recommendations for new or modified permit fees

H. Additional state resources needed to provide regulatory oversight

I. Other recommended uses for oil and gas revenue
   - Improvement of water and wastewater infrastructure
   - Remediation of contaminated sites
   - Land and water conservation

Section 6 – Potential social impacts

A. Impacts on nearby communities from drilling operations
   - Housing availability
   - Property values
   - Demand for social services

B. Impacts on quality of life within nearby communities, including impacts on:
   - Recreational activities
   - Commercial and residential development
   - Noise from construction and drilling operations
   - Visual impacts from construction and drilling operations

Section 7 – Proposed regulatory framework

A. Guidance for development of a regulatory framework
   - STRONGER standards for state oil and gas programs

- State-by-state review of oil and gas programs
- Other sources of recommended standards
- Public comment
- Existing state policy

B. Recommended policies to guide regulation of oil and gas development
C. Recommended regulatory framework
- Public participation
- Interagency coordination
- Criteria for permit issuance or denial
- Scope and frequency of inspection
- Compliance and enforcement procedures
- Data management

Section 8 – Consumer protection and legal issues

A. Mineral leases
B. Surface landowner rights
C. Disclosure to landowners (both surface and subsurface)
D. Compensation for damages

Section 9 – Other issues

Appendix Session Law 2011-276
Summary of Public Comment

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Alcoa Power Generating, Inc.	)	P-2197-073
	)	
Yadkin Hydroelectric Project	)	Application for New Major License

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES' NOTICE OF INTERVENTION AND ALTERNATIVE MOTION TO INTERVENE

NOW COMES the Department of Environment and Natural Resources of the State of North Carolina ("NC DENR"), through the undersigned counsel, and (i) gives notice of intervention pursuant to Rule 214(a)(2), and (ii) moves in the alternative to intervene under Rule 214(a)(3). 18 C.F.R. § 385.214.

NOTICE OF INTERVENTION

NC DENR gives notice of intervention under Rule 214(a)(2). In support of this notice NC DENR shows the following: The North Carolina Environmental Management Commission ("EMC") has delegated to the Director of the Division of Water Quality authority to issue water quality certifications on behalf of the State of North Carolina ("State"). 33 U.S.C. § 1341; N.C. Gen. Stat. § 143B-282(1)(u); 15A N.C.A.C. 2H.0500. The Division of Water Quality is a division of NC DENR, which is a statutory department of the State. See N.C. Gen. Stat. § 143B-279.1. The Commission has recognized on numerous previous occasions the authority of NC DENR and its Division of Water Quality to certify hydroelectric projects licensed by the Commission under the Federal Power Act.[1]

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[1] E.g., Alcoa Power Generating, Inc., 110 FERC ¶ 61,056, at 61,273, 61,306 (25 Jan. 2005) ("the North Carolina State Division of Water [Quality] . . . issued [a] timely water quality certification[] for the Tapoco Project"); Nantahala Power & Light, 98 FERC ¶ 62,214, at 64,436 (28 March 2002) ("This license is subject to the water quality certification conditions submitted by the North Carolina Department of Environment and Natural Resources under Section 401(a) of the Clean Water Act . . .."); Duke Power Co., 72 FERC ¶ 61,030, at 61,182 (13 July 1995) ("North Carolina [Department of Environment and Natural] Resources issued [a] water quality certification for the Spencer Mountain Project").

NC DENR submits that this project requires a water quality certification.[2] Therefore, NC DENR has authority to intervene as of right pursuant to Rule 214(a)(2).

ALTERNATIVE MOTION TO INTERVENE

In the alternative, NC DENR moves the Commission, pursuant to Rule 214(a)(3), to allow NC DENR to intervene. In support of this alternative motion, NC DENR shows the following:

I. GROUNDS FOR INTERVENTION

A. NC DENR Has a Right to Participate in this Proceeding

As stated above, NC DENR has a right to participate in this proceeding by virtue of its authority to certify federally-licensed projects pursuant to section 401 of the Clean Water Act. Rule 214(b)(2)(i).

B. NC DENR Has a Paramount Interest in the Waters of the State Which May Be Directly Affected by the Outcome of this Proceeding

NC DENR is a statutory department of the State of North Carolina. N.C. Gen. Stat. § 143B-279.1.

> It is hereby declared to be the public policy of this State to provide for the conservation of its water and air resources. Furthermore, it is the intent of the General Assembly ... to achieve and to maintain for the citizens of the State a total environment of superior quality.
>
> * * *
>
> It is the public policy of the State to maintain, protect, and enhance water quality within North Carolina.
>
> * * *
>
> It is the purpose of this Article to create an agency which shall administer a program of water and air pollution control and water resource management. It is the intent of the General Assembly, through the duties and powers

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[2] S. D. Warren Co. v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1843 (2006).

> defined herein, to confer such authority upon the Department of Environment and Natural Resources as shall be necessary to administer a complete program of water and air conservation, pollution abatement and control and to achieve a coordinated effort of pollution abatement and control with other jurisdictions. Standards of water and air purity shall be designed to protect human health, to prevent injury to plant and animal life, to prevent damage to public and private property, to insure the continued enjoyment of the natural attractions of the State, to encourage the expansion of employment opportunities, to provide a permanent foundation for healthy industrial development and to secure for the people of North Carolina, now and in the future, the beneficial uses of these great natural resources.

N.C. Gen. Stat. § 143-211(c). In furtherance of these policies NC DENR retains authority to:[3]

- Provide for the protection of the environment. N.C. Gen. Stat. § 143B-279.2.
- Implement the federal Clean Water Act by developing and applying water quality standards and issuing National Pollutant Discharge Elimination System Permits. N.C. Gen. Stat. §§ 143-214.1, 143-215.1 and 143B-282, and 33 U.S.C. §§ 1313 and 1342.
- Certify compliance of federally licensed activities with State law pursuant to section 401 of the Clean Water Act. N.C. Gen. Stat. § 143B-282, 15A N.C.A.C. 2H. 0500 and 33 U.S.C. § 1341.
- Manage water quality at the basinwide level and cooperate in local watershed protection. N.C. Gen. Stat. §§ 143-214.5 and 143-215.8B.
- Investigate the need for and affects of interbasin water transfers and make recommendations regarding approval of such transfers. N.C. Gen. Stat. § 143-215.22I.
- Investigate conditions of localized water depletion and make recommendations regarding regulations to coordinate, conserve, and apportion available supplies. N.C. Gen. Stat. § 143-215.11 et seq.

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[3] The duties of NC DENR exist by virtue of express legislative mandate, delegation from the EMC, and as NC DENR's function as staff to the EMC. See N.C. Gen. Stat. § 143-215.3.

- Coordinate statewide water supply planning by providing technical assistance to local government for development of local water supply plans and developing a state water supply plan. N.C. Gen. Stat. § 143-355.

- Assist in the development of rules for conservation of water during drought by, among other things, evaluating current water conservation measures and making recommendations regarding those measures. 2002 N.C. Sess. L. 167.

- Investigate fish kills. N.C. Gen. Stat. §§ 143B-279.7, 143B-282 and 143-215.3.

These authorities are merely representative. See, generally, e.g., N.C. Gen. Stat. ch. 143, art. 21; and ch. 143B, art. 7. In essence, NC DENR, in coordination with the EMC and the North Carolina Wildlife Resources Commission, retains broad authority and responsibility regarding water quality and natural resource issues. In addition, the State retains title to the beds of navigable waters and the navigable waters themselves are a public resource.[4]

The operation of this project may change the quantity and quality of fish habitat in the river, alter the chemical and physical properties of the river, affect the recreational opportunities in the river, affect submerged lands to which the State retains title, *etc.* Certainly, these outcomes will affect the implementation NC DENR's regulatory and other statutory authorities on behalf of the public, and its ability to carry out its legal mandates. See Rule 214(b)(2)(ii).

C. NC DENR's Participation in this Proceeding Is in the Public Interest

The mandates discussed above uniquely position NC DENR to oversee and manage water resources affected by this proceeding. As a governmental agency with broad

[4] E.g., Shepard's Point Land Co. v. Atlantic Hotel, 132 N.C. 517, 44 S.E. 39 (1903); State v. Narrows Island Club, 100 N.C. 477, 5 S.E. 411 (1888).

jurisdiction over public waters, NC DENR is well positioned to balance the interests of various users of this public resource. In the exercise of its authority, NC DENR often must resolve conflicts with regard to competing uses and pressures on water resources. See, e.g., N.C. Gen. Stat. § 143-214.1. The experienced and technically expert staff of NC DENR periodically monitors the status of the waters affected by this proceeding, including the operations of the project. NC DENR's mandate requires it to coordinate all of the information it receives in order to render advice, provide assistance, and make determinations regarding the best overall use of this limited resource. Therefore, the participation by NC DENR in this proceeding is in the public interest. See Rule 214(b)(2)(iii).

II. NC DENR SUPPORTS SETTLEMENT CONSISTENT WITH THE TERMS OF THE AGREEMENT IN PRINCIPLE AND ISSUANCE OF A LICENSE THAT ADOPTS THE LICENSE ARTICLES THAT THE PARTIES WILL PROPOSE IN THE SETTLEMENT AGREEMENT

NC DENR, the licensee, and many other interested stakeholders, including federal, State, tribal, and local government, local business and non-governmental organizations, have prepared a good faith Agreement in Principle ("AIP") to address the substantive matters involved in this proceeding. The parties intend to execute a settlement agreement that is consistent with and incorporates the substantive provisions of the AIP. The agreement will include proposed license articles that the parties will recommend should govern the relationship between the Commission and the licensee over the course of the new license, and other obligations and agreements to govern the interaction of the parties during that time as well. NC DENR supports the AIP and urges the Commission, when the agreement is

executed and filed, to approve the agreement in full and incorporate the proposed license articles into the new license for the project. Also, NC DENR intends to issue a water quality certification pursuant to section 401 of the Clean Water Act with conditions to be incorporated into the new license.

III. CONCLUSION

For all of the foregoing reasons, to the extent NC DENR is not eligible for intervention pursuant to Rule 214(a)(2), NC DENR respectfully requests that the Commission grant this Alternative Motion to Intervene pursuant to Rule 214(a)(3).

CONTACT INFORMATION

Please direct all communications to:

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N.C. Department of Environment
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Respectfully submitted, this the 22nd day of February 2007.

ROY COOPER
ATTORNEY GENERAL

By: /s/ Marc Bernstein

Marc Bernstein
Special Deputy Attorney General
N.C. Department of Justice
9001 Mail Service Center
Raleigh, NC 27699-9001
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Facsimile: (919) 716-6767
E mail: mbernstein@ncdoj.gov
Attorney for NC DENR

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

This the 22nd day of February 2007.

/s/ Marc Bernstein
Marc Bernstein
Special Deputy Attorney General
N.C. Department of Justice
9001 Mail Service Center
Raleigh, NC 27699-9001
Telephone: (919) 716-6600

RECEIVED
OCT 17 2011
FINANCIAL SERVICES OFFICE

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: Mitch Gillespie

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip) On File
# of round trips

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Trans Oversight

Number of days subsistence claimed for other meeting(s) 2

Car Mileage claimed for other meeting Yes ☑ No ☐

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OCT 17 2011
FINANCIAL SERVICES OFFICE

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: Carolyn Justice

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip) 298
# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Local Gourmet

Number of days subsistence claimed for other meeting(s) 1

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☒

RECEIVED
OCT 17 2011
FINANCIAL SERVICES OFFICE

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: William Brisson

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☐

RECEIVED
OCT 17 2011
FINANCIAL SERVICES OFFICE

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: Sen. Stan Bingham

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips 0

Stan Bingham
(Member's Signature)

David Rouzer
(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☑ No ☐

RECEIVED
OCT 17 2011
FINANCIAL SERVICES OFFICE

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: Ruth Samuelson

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip)
# of round trips 340 whatever (

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) _____

Car Mileage claimed for other meeting Yes ☐ No ☐

RECEIVED
OCT 17 2011
FINANCIAL SERVICES OFFICE

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: CHUCK MCGRADY

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip) 540
# of round trips

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☒

RECEIVED
OCT 17 2011
FINANCIAL SERVICING OFFICE

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: Fletcher Hartsell

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips —

Fletcher L. Hartsell Jr.
(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐



COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: Don East

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip) 270
# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) _____

Car Mileage claimed for other meeting Yes ☐ No ☐

RECEIVED
OCT 17 2011
FINANCIAL SERVICES OFFICE

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: Brent Jackson

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips 1

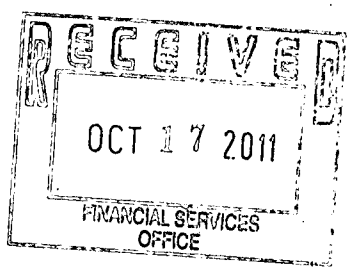
(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☒



COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: October 12, 2011

Member: DAVID ROUZER

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips 1

David Rouzer
(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

None

Number of days subsistence claimed for other meeting(s) —

Car Mileage claimed for other meeting Yes ☐ No ☒

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
November 9, 2011

The Environmental Review Commission (ERC or Commission) met on Wednesday November 9, 2011 at 9:00 a.m. in Room 544 of the Legislative Office Building. Representative Gillespie presided.

The following members were present: Senators David Rouzer, Co-Chair, Rep. Mitch Gillespie Co-Chair, Senator Stan Bingham, Senator Dan Clodfelter, Senator Don East, Senator Fletcher Hartsell, Senator Brent Jackson, Representative William Brisson, Representative Joe Hackney, Representative Carolyn Justice, Representative Pat McElraft, and Representative Chuck McGrady. Also present were: Mr. Jeff Hudson, Ms. Jennifer McGinnis, Commission Counsels; Ms. Jennifer Mundt, Commission Analyst; Ms. Mariah Matheson, Research Assistant; Ms. Cindy Hobbs, Commission Clerk; and Sergeants-at-Arms Bill Bass, Fred Hines, Bob Rossi, and John Fitchett. Attachments #1 and #2.

On October 31, 2011, notice was sent to members and interested parties via e-mail. A copy of the notice is included in the attachments to these minutes as Attachment #3. Copies of the agenda for the meeting and visitor registration sheets are included in the attachments to these minutes as Attachment #4 and Attachment #5, respectively.

Call to order and introductory remarks

Representative Gillespie called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized his Co-Chair, Senator Rouzer for introductory remarks. Senator Rouzer welcomed members, staff, and visitors in attendance. Representative Gillespie called for the approval of the minutes for the September 28, 2011 meeting, Attachment #6. There being no changes, Representative McGrady moved for approval. The commission received a disposition of reports submitted by Mariah Matheson, Attachment #7. Representative Gillespie then recognized Richard Whisnant, Associate Professor of Public Law and Government School of Government, University of North Carolina at Chapel Hill and William E. Holman, Director of State Policy, Nicholas Institute of Environmental Policy Solutions, Duke University to make their presentation.

Presentation on State water resources and water law

Messrs. Whisnant and Holman presented the state of the water resources and water law in the State. A copy of Messrs.' Whisnant and Holman's PowerPoint presentation is included in the attachments to these minutes as Attachment #8. Key recommendations from the presentation were:

1. Continue to develop and update hydrologic models of each river basin (per S.L. 2010-143).

2. Request reports on the Upper Neuse and Catawba-Wateree River Basins regarding future water shortages.
3. Integrate water quality and water quantity planning starting with Neuse River Plan in 2012 and Cape Fear River in 2013.
4. Not favoring one set of users over another until a better understanding of the "water budget" picture is clarified.
5. Work on design for multi-stakeholder process.
6. Preserve and increase water storage.
7. Support increased financial sustainability of public and private water utilities.
8. Increase water efficiency.

Messrs.' Whisnant and Holman received a number of questions and requests for further information including:

Representative Gillespie asked for additional information regarding acquiring water from Kerr Lake, a copy of Dr. Moreau's report, and asked about research on water desalination by Research Triangle Institute (RTI).

Representatives Hackney and Gillespie asked for the existing survey of abandoned quarries and that Commission staff follow up with the Division of Land Resources in the Department of Environment and Natural Resources (DENR) concerning the quarries.

Presentation on the permitting of drinking water reservoirs in North Carolina

Representative Gillespie recognized Tom Reeder, Director of the Division of Water Resources, DENR. A copy of Mr. Reeder's PowerPoint presentation is included in the attachments to these minutes as Attachment # 9. Mr. Reeder explained the differences between Clean Water Act Section 404 (federal) and Section 401 (State) permits. Mr. Reeder addressed the permitting process and associated timelines. Mr. Reeder also reviewed potential issues that would significantly extend the permit review process including: alternative and site selection; threatened and endangered species; interbasin transfer certificates; fish passage and migratory species; water supply/quality reclassification, and applicant decisions on study funding.

Mr. Reeder also presented and discussed a list of the reservoirs developed over the past 20 years. This list is included in the attachments to these minutes as Attachment #10.

DENR Assistant Secretary Robin Smith provided a historical account of the permitting process for Randleman Reservoir from the original proposal made in 1937 through the beginning of the dam's construction in 2001. Ms. Smith's History of Randleman Reservoir is included in the attachments to these minutes as Attachment # 11.

Mr. Reeder and Ms. Smith received a number of questions and requests for further information including:

Senator Clodfelter who had a question for Mr. Reeder about the Lancaster/Union project. Senator Clodfelter wanted to know if it was issued a general or an individual permit.

Representative Hackney asked whether local authorities can require efficiency standards (e.g., low-flow toilets, water saving inserts in faucets) vis-a-vis building code requirements.

Representative McElraft noted that lands were taken by eminent domain in 1991 for Randleman Dam and that there was a lag time between the "taking" and when the construction of the dam began in 2001. Representative McElraft wanted to know when the property owners had to move.

Representatives Gillespie and McGrady both indicated that there is a need to revisit House Bill 609 (perhaps in a 2012 Amend Environmental Laws Bill) to address the Department's liability when providing the assistance and cooperation to local governments that is required pursuant to the bill.

Report on the States 2011 Agricultural Water Use Survey

Representative Gillespie introduced Herb Vanderberry, Director, United States Department of Agriculture, National Agricultural Statistics Service North Carolina Field Office. Mr. Vanderberry reported that compared to withdrawals from all users, agricultural water use was less that 1% of all water withdrawals in 2010. Information for agricultural water use is available only for those 15 counties in the Central Coastal Plain Capacity Use Area (CCPCUA) and for water withdrawals of greater than 1 million gallons per day outside the CCPCUA. Attachments # 12, #13, #14, and #15.

Report on the transfer of the Division of Soil and Water Conservation, the Division of Forestry, the Sleep Products program and the Grade A Milk Inspection Program to the Department of Agriculture and Consumer Services

Representative Gillespie introduced David Smith, Chief Deputy Commissioner, Department of Agriculture and Consumer Services (DACS). Mr. Smith reported that the transfer of the divisions and programs to DACS was the largest transfer of assets and employees in the history of the State. A smooth transition was made within the first quarter of the fiscal year with no disruption of services. Representative Gillespie praised the Department and requested that Mr. Smith submit a list of statutory changes required to clarify or amend the transfers to DACS. Senator Jackson inquired about developing a handbook for the transfer of divisions and departments. Mr. Smith replied that the Office of State Budget and Management is working on guidelines for future transfers.

Annual report on the status of leaking petroleum underground storage tanks and the State cleanup (G.S. 143-215.94M)

Representative Gillespie introduced Dexter Matthews, Director of the Division of Waste management, DENR. Mr. Matthews discussed the status of the underground storage tank (UST) program, the status of funds available to businesses and homeowners, and recommendations for the future. Mr. Matthews received a number of questions and requests for further information including:

Representative McElraft asked about the status and number of third-party claims and the claim amounts.

Senator East requested a copy of the Program Evaluation Division's UST report and any past bills on USTs.

Representative Brisson requested follow up on his concern about a particular commercial site previously mentioned to the Department. Attachment # 16.

Representative Gillespie requested that a letter from the Division of Waste Management be sent to the commission requesting funding for the program.

There being no further business, the meeting was adjourned at 12:25 PM.

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Attest:

Cindy Hobbs, Commission Clerk

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
SENATOR STAN BINGHAM
SENATOR DANIEL G. CLODFELTER
SENATOR DON EAST
SENATOR FLETCHER L. HARTSELL, Jr.
SENATOR BRENT JACKSON
SENATOR BILL RABON
SENATOR MICHAEL P. WALTERS

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REPRESENTATIVE CHUCK MCGRADY
REPRESENTATIVE ROGER WEST

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(919) 733-2578

SUSAN S. IDDINGS
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JENNIFER L. McGINNIS
COMMISSION COUNSEL

JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

November 7, 2011

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Cindy Hobbs, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at 9:00 a.m. on Wednesday, November 9, 2011, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. The agenda for the meeting is expected to include presentations on State water resources and water law; the permitting of drinking water reservoirs; the 2011 Agriculture Water Use Survey; a report on the transfer of the Divisions of Soil and Water Conservation and Forestry from the Department of Environment and Natural Resources to the Department of Agriculture and Consumer Services; and the annual report on the Underground Storage Tank Program, including implementation of recent legislative changes to the Program. Please note this agenda is tentative and subject to change.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Cindy Hobbs, Commission Clerk, at (919) 733-5862

ATTENDANCE

Environmental Review Commission

DATES	11-9														
Sen. David Rouzer (Chair)	✓														
Rep. Mitch Gillespie (Co-Chair)	✓														
Rep. Ruth Samuelson (Co-Chair)															
Sen. Stan Bingham	✓														
Sen. Dan Clodfelter	✓														
Sen. Don East	✓														
Sen. Fletcher Hartsell	✓														
Sen. Brent Jackson	✓														
Sen. Bill Rabon															
Sen. Michael Walters															
Rep. William Brisson	✓														
Rep. Joe Hackney	✓														
Rep. Carolyn Justice	✓														
Rep. Pat McElraft	✓														
Rep. Chuck McGrady	✓														
Rep. Roger West															
Staff:															
Jeff Hudson	✓														
Susan Iddings															
Jennifer McGinnis	✓														
Jennifer Mundt	✓														
Mariah Matheson	✓														

#2

Committee Sergeants at Arms

NAME OF COMMITTEE ENVIRONMENTAL REVIEW COMM.

DATE: 11-09-2011 **Room:** 544

House Sgt-At Arms:

1. **Name:** BOB ROSSI
2. **Name:** FRED HINES
3. **Name:** BILL RASS
4. **Name:**
5. **Name:**

Senate Sgt-At Arms:

1. **Name:** JOHN FITCHETT
2. **Name:**
3. **Name:**
4. **Name:**
5. **Name:**

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
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SENATOR DON EAST
SENATOR FLETCHER L. HARTSELL, Jr.
SENATOR BRENT JACKSON
SENATOR BILL RABON
SENATOR MICHAEL P. WALTERS

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JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

October 31, 2011

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Cindy Hobbs, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at 9:00 a.m. on Wednesday, November 9, 2011, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. The agenda for the meeting is expected to include a report on State water resources and water law and the annual report on the Underground Storage Tank Program (including implementation of recent legislative changes to the Program). Please note this agenda is tentative and subject to change.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Cindy Hobbs, Commission Clerk, at (919) 733-5862

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

9:00 a.m. Wednesday, November 9, 2011
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Mitch Gillespie, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Approval of the minutes for the September 28, 2011 meeting of the Commission

5. Presentation on State water resources and water law *(1 hour)*
   Richard B. Whisnant, Associate Professor of Public Law and Government
   School of Government, University of North Carolina at Chapel Hill

   William E. Holman, Director of State Policy
   Nicholas Institute for Environmental Policy Solutions, Duke University

6. Presentation on the permitting of drinking water reservoirs in North Carolina *(20 minutes)*
   Thomas A. Reeder, Director
   Division of Water Resources, Department of Environment and Natural Resources (DENR)

7. Report on the 2011 Agriculture Water Use Survey (G.S. 106-24(b)) *(30 minutes)*
   Herb Vanderberry, Director
   United States Department of Agriculture, National Agricultural Statistics Service
   North Carolina Field Office

8. Report on the transfer of the Division of Soil and Water Conservation, the Division of Forestry, the Sleep Products Program, and the Grade A Milk Inspection Program to the Department of Agriculture and Consumer Services *(20 minutes)*
   David Smith, Chief Deputy Commissioner
   Department of Agriculture and Consumer Services

9. Annual report on the status of leaking petroleum underground storage tanks and the State cleanup fund (G.S. 143-215.94M) *(30 minutes)*
   Dexter Matthews, Director
   Division of Waste Management, DENR

10. Commission discussion and announcements

11. Adjourn

FUTURE MEETINGS:

The Environmental Review Commission will meet on the following date at 9:00 a.m. in Room 544 of the Legislative Office Building, Raleigh, North Carolina. **This schedule is tentative and subject to adjustment.** For planning purposes, however, please reserve this date.

Wednesday, December 14, 2011

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

VISITOR REGISTRATION SHEET

Environmental Review Commission — 11/9/11

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Robin Smith	DENR
Amy Pickle	Duke University Nicholas Institute
Crystal Penton	The Wooten Company
Gary Kreiser	DWQ
Amy Chapman	DWQ
Trina Ozer	DENR
Jim Simons	DENR
Steve Reed	DWR
Jim Mead	DWR
Dan Raxno	DWR
Linwood Pegg	DWR

VISITOR REGISTRATION SHEET

Environmental Review Commission — 11/9/11

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Laura DeVivo	WCSR
Doug Howey	NCPCM
Tammy Stevens	NCPC
Herb Vanderberry	USDA/NASS
RICHARD WHITEMANT	UNC
Chris Anderson	SELF
Mac Boxley	NC Aggregates
Dianne Beasley	Ag-Forestry
Mary Maclean Asbill	SELC
B Rogers	CWMTF
Kari Barsness	DENR

VISITOR REGISTRATION SHEET

Environmental Review Commission — 11/9/11

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Tom Fransen	DWR, NC DENR
T Reeder	" "
John Shaw	Sierra Club - Cap. Group
Elizabeth Robinson	NCBMA
Lisa Martz	NC HBA
Heather Barnett	Williams Mullen
Jessi Hayes	NCHBA
George Everett	Duke Energy
Preston Howard	MCC
Kathy Hawkins	Duke Energy
Joy Hicks	NCDACS

VISITOR REGISTRATION SHEET

Environmental Review Commission — 11/9/11

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Vernon Cox	NCDACS
Anne Coan	NC Farm Bureau Federation
Gary Harris	NCPCM
Beth Warren	AGO
Mitch Peele	NCFB
Pat Harris	NCDA&CS
Thomas Moore	EWM
[illegible]	Bayer CropSc NC
[illegible]	CSS
Ken Melton	K.M.A.
Dean Plunkett	PS
Jon Metcalf	PG

ERC
11-9-11

NAME	FIRM OR AGENCY
PAUL Meyer	NCLM
BOLT J-	WM
[illegible]	BCS
[illegible]	NCDENR Division of Waste Management
GROVER NICHOLSON	NC DENR - DIV OF WASTE MANAGEMENT
Neil Inman	Citizen
Erin Wynia	NCLM
Tom Bean	EDF, NCWF
Joyce Peters	[illegible]
Bruce Thomas	PARKER POE
Terry Pierce	NC Citizen

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
September 28, 2011

The Environmental Review Commission (ERC or Commission) met on Wednesday September 28, 2011 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Gillespie presided.

The following members were present: Senators David Rouzer, Chair, Rep. Mitch Gillespie Co-Chair, Representative Ruth Samuelson, Co-Chair, Senator Stan Bingham, Senator Dan Clodfelter, Senator Don East, Senator Fletcher Hartsell, Senator Brent Jackson, Senator Bill Rabon, Representative William Brisson, Representative Joe Hackney, Representative Pat McElraft, and Representative Chuck McGrady. Mr. Jeff Hudson, Ms. Jennifer McGinnis, and Ms. Susan Iddings, Commission Counsels; Ms. Jennifer Mundt, Commission Analyst; Ms. Mariah Matheson, Research Assistant; and Ms. Cindy Hobbs, Commission Clerk, Sargent-at-Arms Bill Bass, Garland Shepheard, Jessie Hayes, Ernie Sherrill, Dedrick Anders and Steve Wilson. Attachment #1 and #2.

On September 19, 2011, notice was sent to members and interested parties via e-mail. A copy of the notice is included in the attachments to these minutes as Attachment #3. Copies of the agenda for the meeting and visitor registration sheets are included in the attachments to these minutes as Attachment #4 and Attachment #5, respectively.

Call to order and introductory remarks

Representative Gillespie called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized his Co-Chairs, Senator Rouzer and Representative Samuelson, for introductory remarks. Senator Rouzer and Representative Samuelson also welcomed members, staff, and visitors in attendance. Representative Gillespie asked the members of the Commission and staff of the Commission to introduce themselves. He also introduced the Sergeant-at-Arms, Bill Bass, Garland Shepherd, Jessie Hayes, Ernie Sherrill, Dedrick Anders, and Steve Wilson, and the Commission Clerks, Susan Phillips, Sarah Neunzig, and Cindy Hobbs. Representative Gillespie recognized Mr. Jeff Hudson, Commission Counsel, to provide an overview of the meeting agenda. Mr. Hudson reviewed the agenda and brought to the members' attention the following handouts: Summaries of Substantive Environmental and Natural Resources Ratified Legislation: 2011 Regular Session, 2011 General Assembly and the September 28, 2011 memorandum of reports received by the Commission. Copies of these handouts are included in the attachments to these minutes as Attachment #6 and Attachment #7, respectively. Representative Gillespie brought to the members' attention a handout that he had provided; the handout contains language from H773, the Studies Bill (not enacted), that would have directed the Department of Environment and Natural Resources to study implementation of the State and federal rules related to emissions of toxic air pollutants. A copy of this handout is included in the attachments to these minutes as Attachment #8.

Report on the State Air Toxics Program

Representative Gillespie recognized Ms. Sheila C. Holman, Director, Division of Air Quality (DAQ), Department of Environment and Natural Resources (DENR) to provide a report on the State Air Toxics Program. Ms. Holman provided information on the history of the State and federal programs for regulating toxic air pollutants, the amount of toxic air pollutants emitted by sources in North Carolina annually, the differences between the State and federal programs, examples of how sources of toxic air pollutants have complied with State regulations, and a comparison of the North Carolina air toxics program with the South Carolina and Virginia programs. A copy of Ms. Holman's PowerPoint

presentation is included in the attachments to these minutes as Attachment #9. Ms. Holman received a number of questions and requests for further information about the State air toxics program. These questions and requests included the following:

Senator Bingham

- Provide a list of regulated toxins, quantities emitted, and areas in which they're emitted. Specifically, the 25% that are not regulated or the small quantity toxins that don't meet the threshold.
- What is the worldwide tonnage? For example: mobile sources, coal-fired power plants, China's emissions, etc.

Senator East

- How do we know that DAQ is being effective?
- How much reduction have we seen as a result of the toxics program?
- Total cost to the State for administering the program?
    - Representative Gillespie directed staff of the Fiscal Research Division to provide this information.
- Are auto manufacturers and tire re-cappers heavy polluters?

Representative Gillespie

- Expense of modeling and frequency? Is the modeling cost a disadvantage?
- Field trip: Facility walk-through on the process of testing.
- Provide public health statistics in comparison with other states.
- Examples of small facilities?
    - Sushma Musemore with DAQ responded that asphalt plants, concrete plants, and furniture manufacturing facilities are typical examples of small facilities in North Carolina.
- What is the trigger point for the small facilities?
- List of the applicable federal rules and State rules.
- Is measurement of toxins emitted from the property line or fence line? Does the measurement trigger disadvantage sources with smaller parcels of property? What about measuring from the source itself?

Representative Hackney

- Asked whether the Commission could receive information on the science behind and health benefits of the State program.

Senator Hartsell

- Provide list of 21 substances that are covered by the State program, but not the federal program.

Senator Jackson

- What toxins come specifically from agricultural activities?
- Provide a breakdown between emissions from agricultural activities or facilities, such as grain elevators and agricultural sources of soil dust and sulfur dioxide, and traditional industry.
- Provide a breakdown between toxic and non-toxic pollutants from agricultural sources.

Representative McElraft

- How does 38 million pounds compare to other states, not just the Southeast?

- How is that calculation made and who makes it? Per Ms. Holman, it comes from estimates provided by the sources themselves.
- What co-benefits in reductions have we received with maximum achievable control technology (MACT)?
- Doesn't the EPA take public health into consideration when doing the MACTs? Where is NC's expertise?

Senator Rabon

- What are some disadvantages to the State program?

Senator Rouzer

- How do neighboring states handle the 21 toxins?
- What was the emissions figure 20 years ago?
- What percentage do wildfires (for instance recent fire in Great Dismal Swamp) and mobile sources contribute?

Representative Samuelson

- What triggers the State program?
- Are there some facilities subject to the federal government and the State? How can someone be subject to the federal program and not the State?
- Does the industry have to model too often?

Report on the State Water Supply Plan

Representative Gillespie recognized Mr. Thomas A. Reeder, Director, Division of Water Resources (DWR), DENR to provide the annual report on the State Water Supply Plan and other information related to water resources in the State. Mr. Reeder provided information on DWR, the State Water Supply Plan, the status of hydrologic modeling in the State, the development of water supplies in the State, efforts to improve water use efficiency, interbasin transfers (IBTs), the Central Coastal Plain Capacity Use Area (CCPCUA), and drought conditions. Copies of Mr. Reeder's PowerPoint presentation and the State Water Supply Plan are included in the attachments to these minutes as Attachment #10. and Attachment #11, respectively. Mr. Reeder received a number of questions and requests for further information about water supply. These questions and requests included the following:

Representative Gillespie

- Is there liability to the State on being a co-applicant for a water resource project, as authorized under the legislation enacted earlier this year? Do we need language to limit NC's co-applicant liability?
    - Mr. Reeder responded that there is liability, at least in terms of non-compliance, so modifications to the legislation may be needed to address the issue. Representative Gillespie asked for a recommendation from DENR on this issue.
- Provide a presentation on the Randleman Dam litigation at a subsequent meeting.
- Provide notification to the General Assembly of IBT requests.

Senator Hartsell

- Has the Department intervened in the Randleman Dam lawsuit?
- Provide information on water rights in the State at a subsequent meeting?

Commission discussion and announcements

Senator Hartsell informed the Commission that he had submitted a letter to Attorney General Roy Cooper concerning the ownership of the submerged bed of the Yadkin River at the site of the Yadkin Hydroelectric Project. A copy of the letter is included in the attachments to these minutes as Attachment #12.

Representative Gillespie recognized Mr. Hudson for comments on the next meeting of the Commission. Mr. Hudson informed the Commission that the following topics would likely be on the agenda for the next meeting of the Commission: follow-up on the State air toxics program, a presentation on the science behind and health benefits of the air toxics program, a presentation from entities regulated under the air toxics program, an update on the DENR study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State, and a report on the State Leaking Underground Storage Tank Program.

Representative Gillespie thanked the members and staff, announced the next meeting to be held would be October 12, 2011 at 9:00AM.

Adjournment: The meeting was adjourned at 12:10PM.

_____
Chair Senator David Rouzer

_____
Co-Chair Representative Mitch Gillespie

_____
Co-Chair Representative Ruth Samuelson

Attest:

_____
Cindy Hobbs, Committee Clerk

Attachments: #12

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

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REPRESENTATIVE WILLIAM D. BRISSON
REPRESENTATIVE JOE HACKNEY
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JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

November 9, 2011

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on October 12, 2011. All reports are available online on the Commission website: **(http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received)**. If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or **mariahm@ncleg.net** for assistance.

A. The following report has been submitted by the Department of Agriculture and Consumer Services (DACS) and is being distributed in connection with today's agenda as follows:

Report on the 2011 Agricultural Water Use Survey. July 1, 2011. Statutory Authority: G.S. 106-24(b). ***Agenda Item 7***

B. The following report has been submitted by the Department of Environment and Natural Resources (DENR) and is being distributed in connection with today's agenda as follows:

Revised annual report on the status of leaking petroleum underground storage tanks, the State cleanup fund, and the Groundwater Protection Loan Fund. September 1, 2011. Statutory Authority: G.S. 143-215.94M, as amended by S.L. 2002-148, Sec. 7. ***Agenda Item 9***

C. The following reports have been submitted by DENR and may be distributed in conjunction with a presentation at a future meeting of the Commission.

a. Annual report on implementation of the Resident Inspectors Program at commercial hazardous waste facilities. October 1, 2011. Statutory Authority: G.S. 130A-295.02(m).

b. Annual report on the Effectiveness of the Brownfields Property Reuse Act. October 1, 2011. Statutory Authority: G.S. 130A-310.40.

c. Annual report on the cost of the Title V program. November 1, 2011. Statutory Authority: G.S. 143-215.3A(c).

d. Annual report on the Dry-Cleaning Solvent Cleanup Act of 1997. October 1, 2011. Statutory Authority: G.S. 143-215.104U.

e. Annual report on the development of basinwide hydrologic models. November 1, 2011. Statutory Authority: G.S. 143-355(o)(9), as amended by S.L. 2010-143, Sec. 2.

f. Annual report on the State Water Infrastructure Fund. November 1, 2011. Statutory Authority: G.S. 159G-26.

g. Report on agency planning and regulatory program information related to climate change. November 1, 2011. Authority: S.L. 2010-180, Sec. 13.(a).

Water law and water scarcity in North Carolina and other states

A Briefing for the NC General Assembly's Environmental Review Commission

By the Principal Investigators of the ERC's Water Allocation Study
Richard Whisnant, University of North Carolina School of Government and Bill Holman, Duke University's Nicholas Institute for Environmental Policy Solutions
Nov. 9, 2011



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Water use is rising faster than population growth…

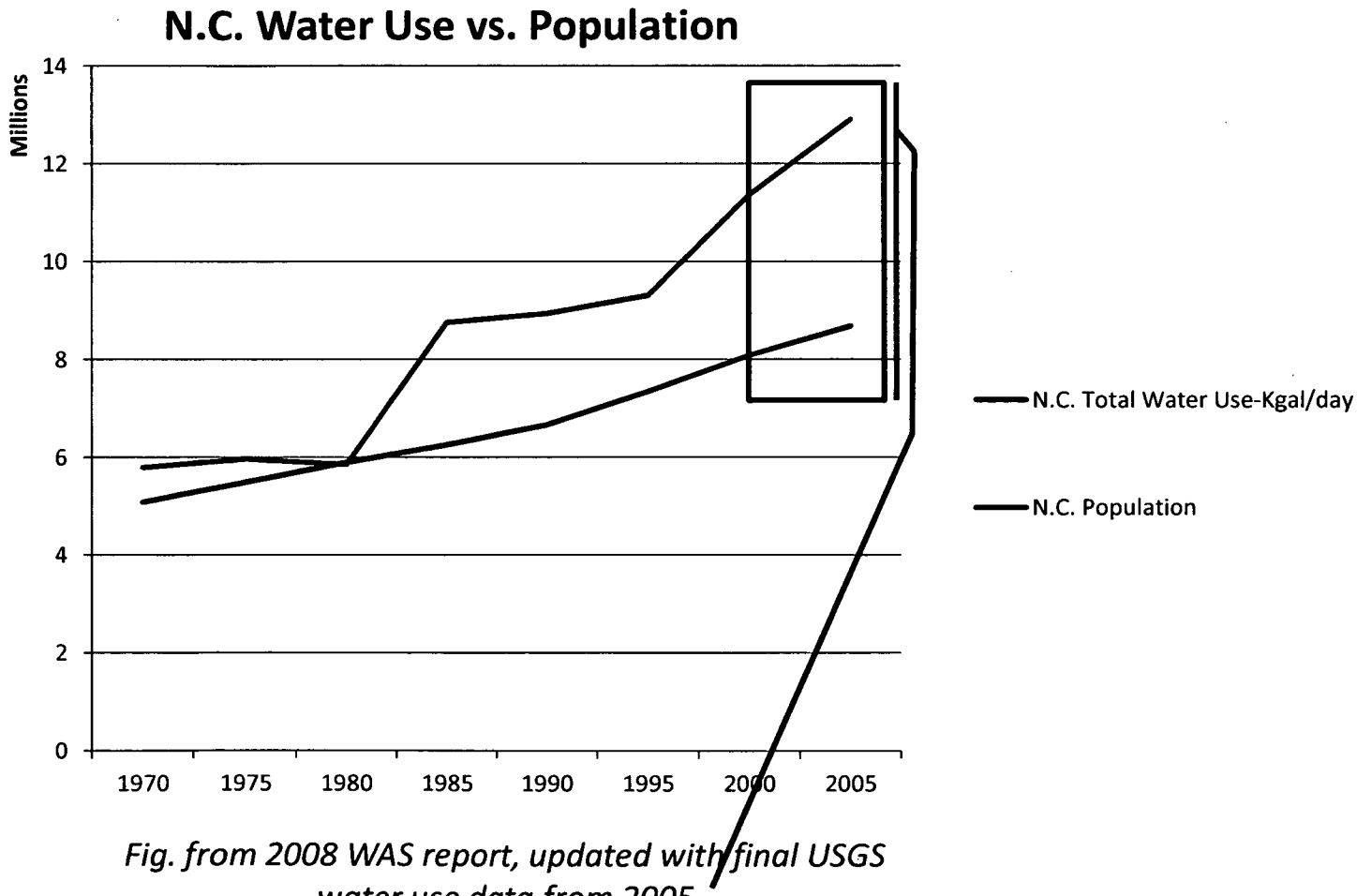


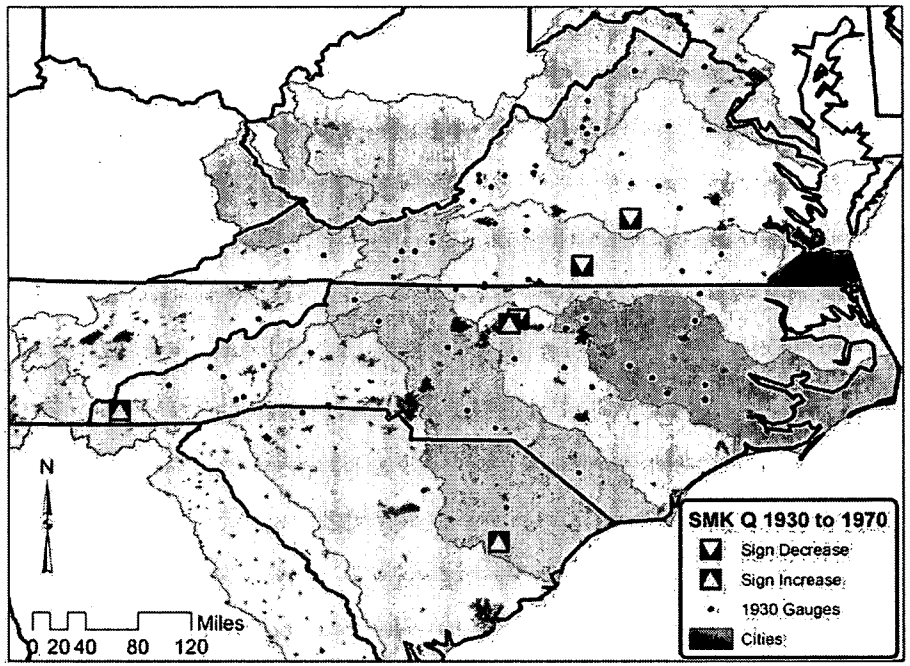
Fig. from 2008 WAS report, updated with final USGS water use data from 2005

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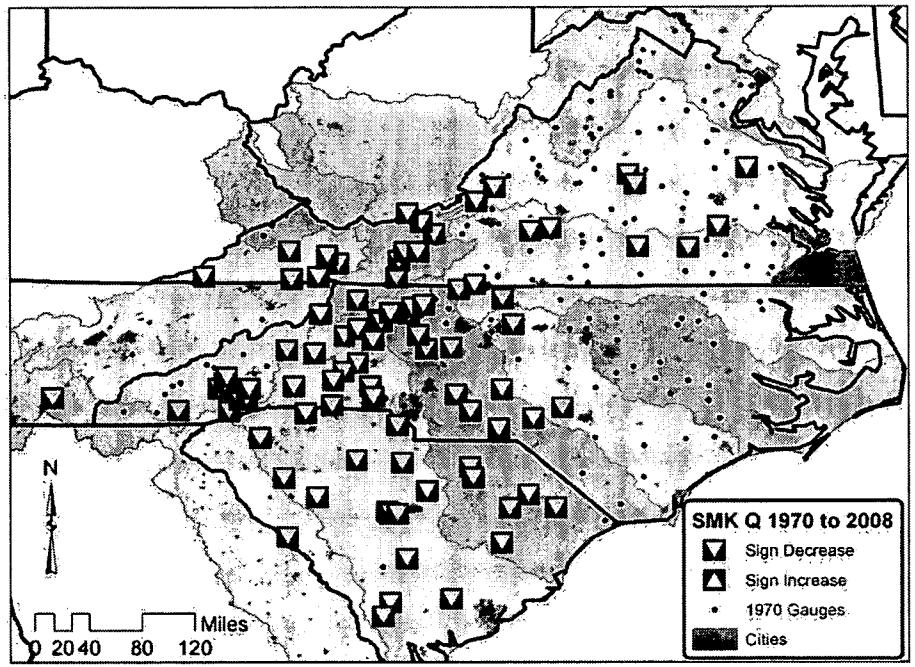
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...while supply is ***finite*** and quite possibly *shrinking*

1930-1970



1970-2008



Changes in regional streamflow

Seasonal Mann Kendall statistic; statistically significant (inflated $P<0.05$ - more conservative) gauges have a direction, otherwise gauges are represented as a dot. Patterson, Lauren (UNC-CH, ongoing dissertation research 2010).

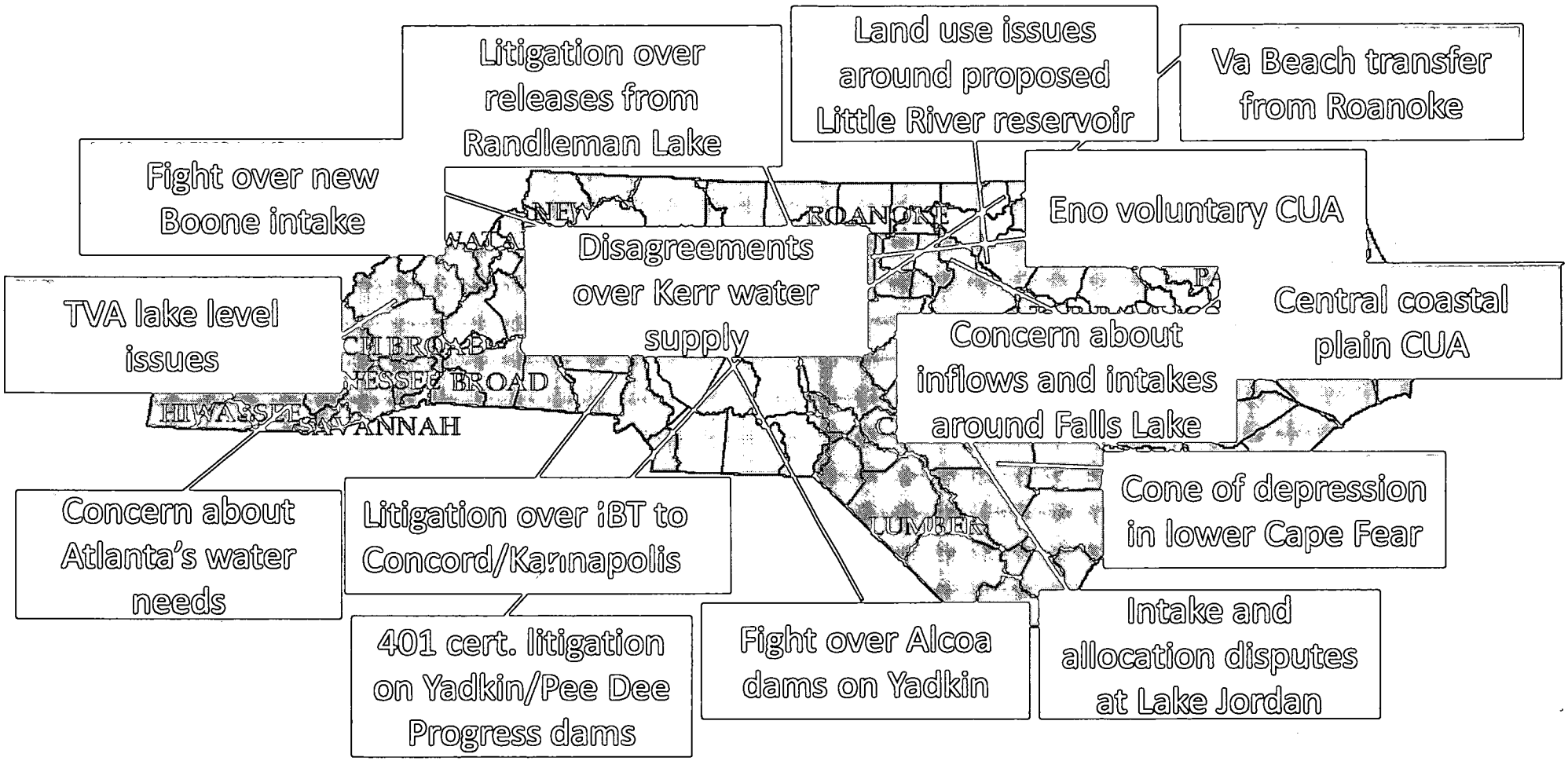
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Shortfalls in water budgets vary widely

- **Duke Energy's Catawba/Wateree model**: *likely shortages in 30-40 years*
- **Neuse basin modeling results**: *"six systems may not be able to withdraw the amounts of water needed to fully meet their demands in the 2050 demand scenario [assuming historical flows continue]" (also not considering ecological flow needs or drought response plans)*
- **Yet other systems and users have adequate water**

Water conflict is rising and will keep rising

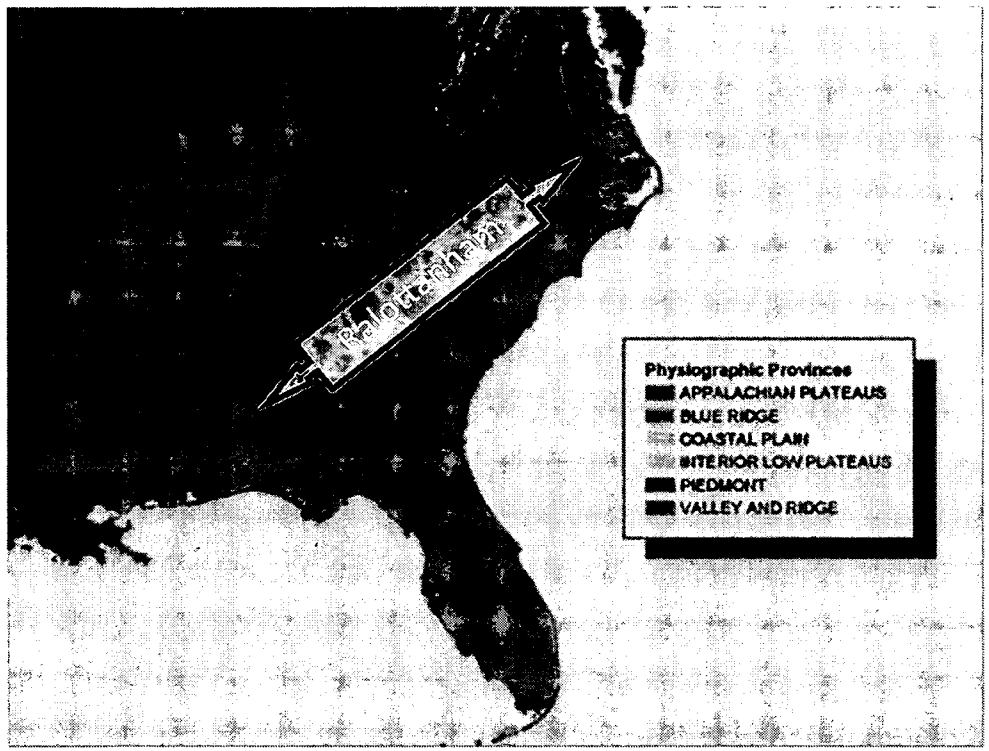


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This is a shared problem across the southeast

A huge percentage of the South's population, growth and economic prospects lies in the piedmont . . .



. . . a region with good average precipitation, but small streams and low yields from groundwater.

Result: low resilience; high susceptibility to drought; almost certain escalation in conflict over water unless growth stops.

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Southeast Water Update

- Georgia
  - State Water Plan Approved in 2008
  - Water Stewardship/Efficiency Act of 2010
  - 10 Water Planning Councils submitted regional plans to EPD in fall 2011
  - Conflict over agricultural withdrawals in the Flint River Basin



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Southeast Water Update

- South Carolina
  - Rules proposed to implement SB 452, Water Withdrawal Permitting Act of 2010
  - Savannah River management w/ Georgia
- Virginia
  - Local/regional water supply plans submitted to DEQ
  - Interstate Commission on the Potomac River Basin
- Tennessee
  - Hydrologic models

Southeastern Drought

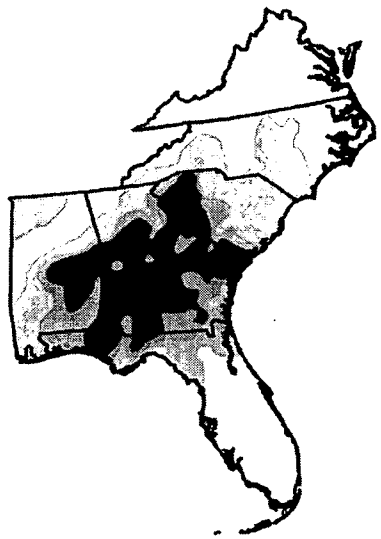
U.S. Drought Monitor

November 1, 2011
Valid 7 a.m. EST

Southeast

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	41.84	58.16	44.93	32.80	21.45	0.00
Last Week (10/25/2011 map)	43.36	56.64	42.52	31.27	21.45	0.00
3 Months Ago (08/02/2011 map)	18.12	81.88	61.00	40.94	22.04	0.93
Start of Calendar Year (12/28/2010 map)	23.01	76.99	51.84	23.55	5.63	0.00
Start of Water Year (09/27/2011 map)	42.24	57.76	41.82	31.77	23.48	0.00
One Year Ago (10/26/2010 map)	28.44	71.56	41.85	15.36	2.93	0.00



Intensity:

- *D0 Abnormally Dry*
- *D1 Drought - Moderate*
- *D2 Drought - Severe*
- *D3 Drought - Extreme*
- *D4 Drought - Exceptional*

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu

USDA

Released Thursday, November 3, 2011
Brian Fuchs, National Drought Mitigation Center

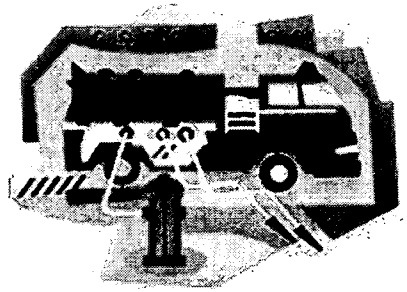
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Currently, courts are not the best way to resolve these conflicts

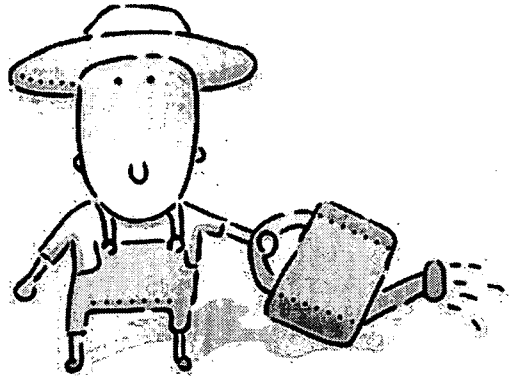
- Riparian rights + present statutes: unpredictable results. Risky for major users.
- North Carolina could be not just a place of adequate precipitation and minimal regulatory intrusion, but also BEST IN CLASS GLOBALLY for water security.
- This will require changes in NC water law.

The best way: careful legislative work

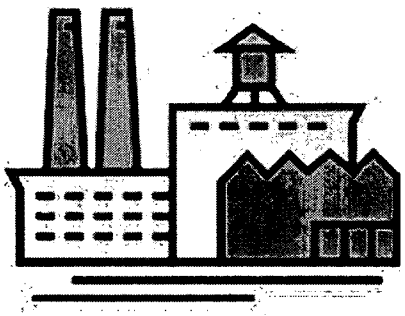


Public water supply





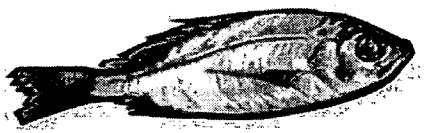
Agriculture



Self supplied industry



Electric utilities



Instream users

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We recommend...

- Continue to develop and update hydrologic models for each river basin per SL 2010-143
- Request reports on the Upper Neuse and Catawba-Wateree regarding future shortages
- Integrate water quality and quantity planning starting with the Neuse River Plan in 2012 and the Cape Fear River Plan in 2013

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We recommend…

- Don't favor one set of users over another until we understand the "water budget" picture
- Work on design for multi-stakeholder process
  - Report for NC Chamber
  - AgH2O Update
  - Water utilities
  - Electric utilities
  - Conservation organizations



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We recommend…

- Preserve and increase water storage
  - Acquire NC's share of Kerr Lake's water supply
  - Status of existing dams and reservoirs
  - Evaluate potential for off-line storage (GA)
  - Reduce sedimentation/preserve capacity
  - Direct DENR to consider stormwater capture and reuse as part of its stormwater regulatory programs
  - Provide authority to preserve reservoir sites

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And finally we recommend

- Increase financial sustainability of public and private water utilities
  - Water rates
- Increase water efficiency
  - Water prices affect water consumption
  - High value water for high value uses
  - Reclaimed water is a resource
  - GA Water Stewardship Act
  - Stormwater for low value uses

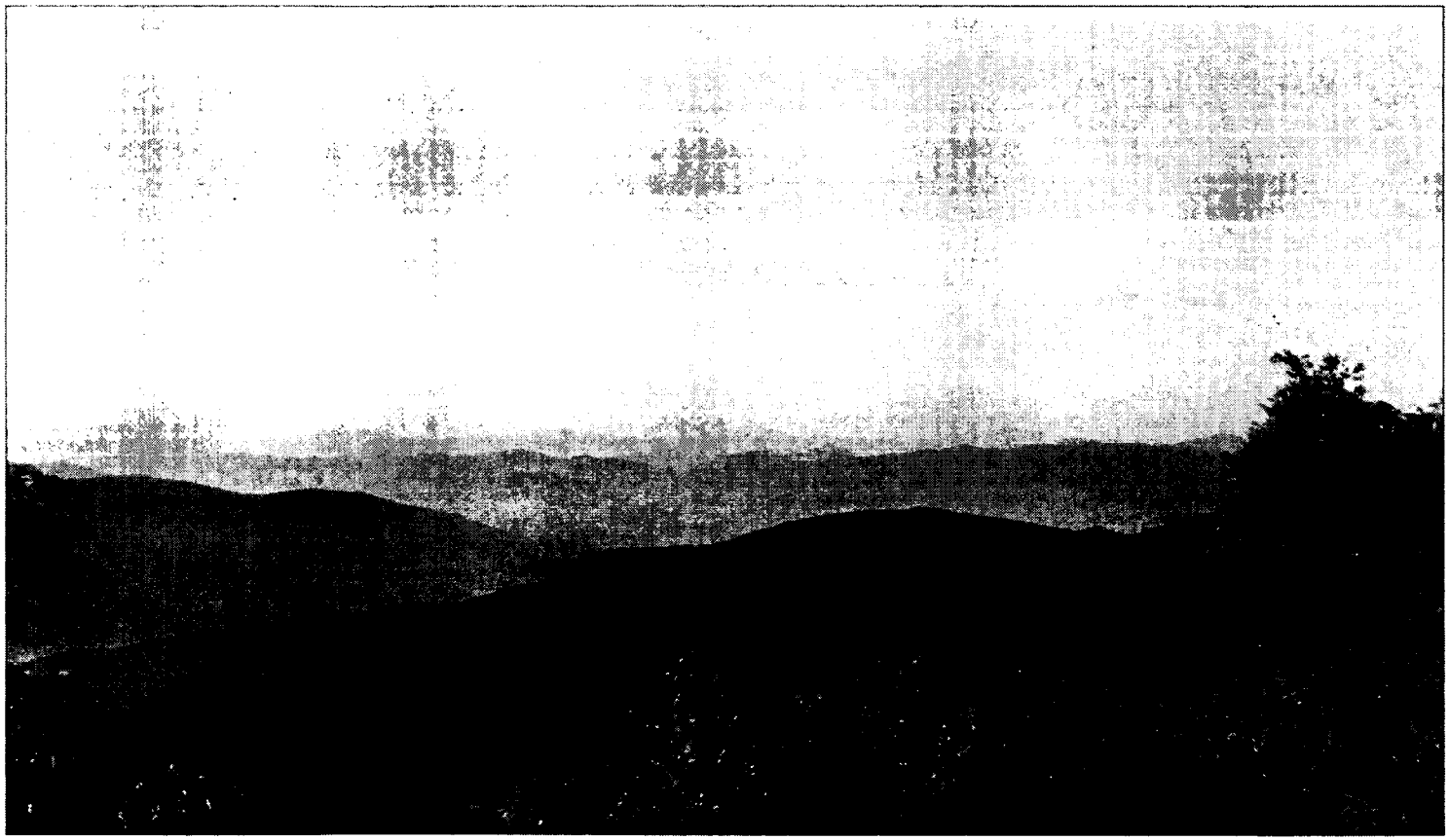


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Questions?



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Water Supply Reservoir Permitting Process

Environmental Review Commission

November 9, 2011

Potential Permits Required

- Clean Water Act, section 404 (Federal Permit)
  - US Army Corps of Engineers
  - Mitigation
- Clean Water Act, section 401 (State Permit)
  - DWQ
  - Wetlands, mitigation, downstream flow
- Approval to construct treatment plant/use for public water supply (State Permit)
  - DWR, Public Water Supply Section

2

Potential Permits Required cont'd

- Water Supply Water Quality Reclassification (State)
  - DWQ
  - Critical area delineated
  - Water supply watershed protection measures
  - Rulemaking process, 2 years or more
  - Could be started early
- Local Government(s)
  - Adopt ordinances for water supply watershed protection, and to mitigate impacts

3

Potential Permits Required cont'd

- Interbasin Transfer Certificate (State Certificate)
  - DWR
  - As applicable
  - ~5 year process
- NC Dam Safety permit (State Permit)
  - Division of Land Resources
  - Often last, since review of engineering design
  - Also includes requirements for amount and water quality of downstream release

4

1st Step–Analyze Purpose & Need

- Examine projected need of system
  - Defendable demand estimates
- Evaluate:
  - Water loss
  - Water efficiency
  - Water reuse

5

Identify Potential Options

(listed below from least to most difficult to permit)

- Interconnection / Regional System
- Groundwater sources (in capacity use area)
- Additional surface water intakes
- Side stream reservoir
- Mainstem reservoir

6

Initial Steps (~ 18 months)

- Document the Purpose and Need for the project
- Initial list of alternatives
- Developing env. documents for permit decisions
- Scoping – identifying issues and stakeholders
- Will it require an EA or EIS / SEPA or NEPA
  - Can the project be permitted under a Nationwide or General Permit from the Corps?
- Form Project Review Team (for NEPA)

7

Studies (~36 months)

- Varies depending on project specific factors.
- Initial site screening, including:
  - Geotechnical studies
  - Affected dwellings, roads, utilities, etc.
  - Agricultural lands flooded
  - Land acquisition issues

8

Studies cont'd

- Hydrologic Modeling
  - Determine yield of reservoir
  - Provide input to evaluate downstream flows
- Effects of the Impoundment
  - Wetlands lost
  - Riverine habitats lost
  - Terrestrial habitats lost
  - Threatened or Endangered Species
- Effects on Downstream Aquatic Resources
  - Downstream flows
  - Fish passage? Threatened or Endangered Species?

9

Studies cont'd

- Water Quality
  - In the reservoir, algae concerns etc.
  - Suitability for water supply use
  - Downstream release (dissolved oxygen, temperature, etc.)
- Initial mitigation measures analysis - sufficient to compare alternatives
- Costs - sufficient to compare alternatives

10

Preferred Alternative (~24 months)

- Review of Alternatives
  - Study results
  - Project Review Team
  - Agency consultation
- Develop Preferred Alternative
- Least Environmentally Damaging Practicable Alternative (LEDPA) (Corps decides under NEPA)
- Secondary and Cumulative Impacts related to water supply expansion and growth
- Mitigation Plans for direct and indirect impacts

11

Environmental Documents (~18 months)

- Draft EIS (developed to Army Corps specs)
  - Local govt pays but contractor works for Corps
- Agency/Stakeholder review
  - Federal – EPA, Fish & Wildlife Service, National Marine Fisheries Service
  - State – DENR, Wildlife Resources Commission
  - Other stakeholders
- Subsequent Drafts if needed
- Final EIS
- Public Comment
- Record of Decision

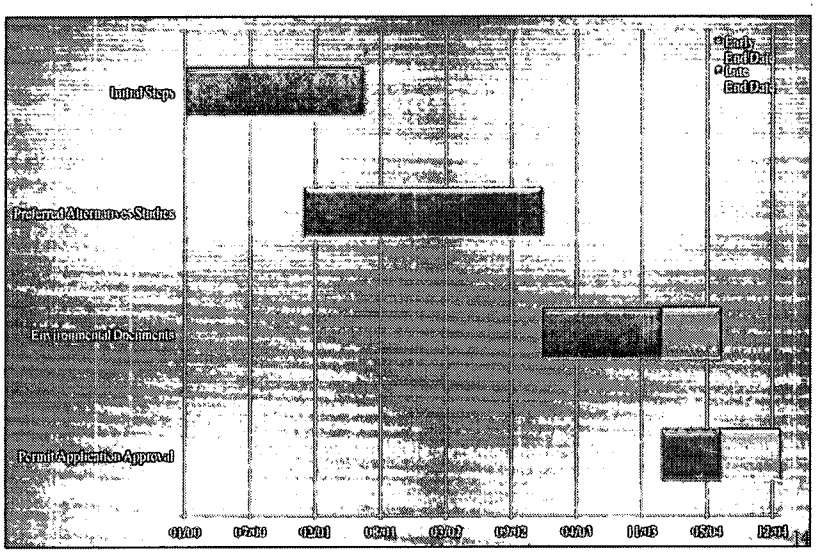
12

Issues with the Potential to Extend the Review Process Significantly

- Alternative and site selection
  - Not the LEDPA?
- Threatened & Endangered Species
- Interbasin Transfer Certificate
- Fish Passage for Migratory Species
- Water Supply Water Quality Reclassification
  - Concerns from other local governments
- Applicant decisions on study funding
  - Consultant experience and level of staffing
  - Simultaneous or sequential work?

13

Reservoir Development Process Under Favorable Circumstances



Recent Reservoir Projects in NC

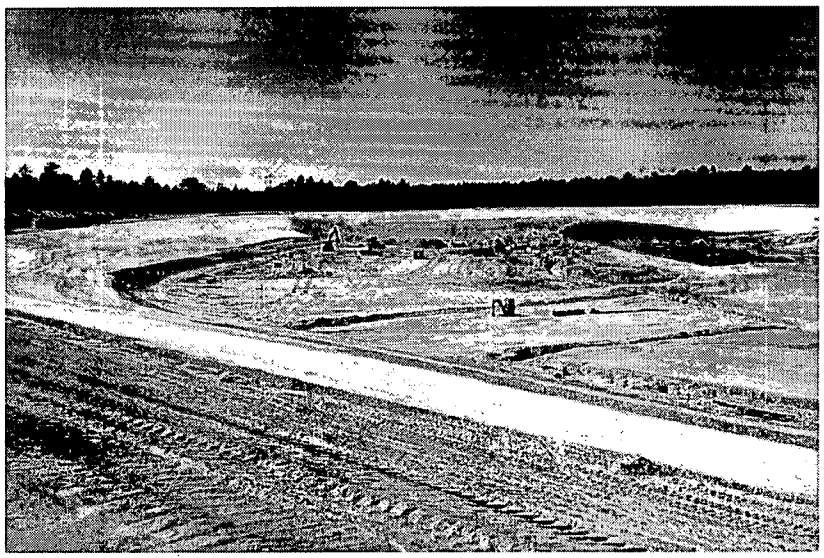
- Randleman Dam
- Rocky River Expansion
- Horse Creek
- Nicks Creek
- West Fork Eno
- Buckhorn Dam
- Lake Tabor
- Mackintosh Reservoir
- Lake Howell
- Stewarts Creek
- Back Creek Reservoir

15

Side Stream Reservoirs

- Viable alternative to mainstem reservoirs
- Provides tangible, quantifiable water storage
- Quicker permitting times
- Much less expensive
- Often requires Env. Assessment vs. EIS
- Horse Creek Reservoir permitted in 2 years

16



Horse Creek Reservoir Under Construction

17

Contact Information

Tom Reeder
Director, NC Division of Water Resources
919-715-3045
tom.reeder@ncdenr.gov

DWR
Division of Water Resources

DENR
November 8, 2011

North Carolina Reservoirs developed within the last 20 years:
compiled on September 26, 2011
The following information is based on records maintained by the Division of Water Resources.

2009 Rocky River Lower Reservoir Expansion - Charles L. Turner Reservoir (Siler City)
Siler City increased the impounded area of an existing reservoir from 24 acres to 162 acres by constructing a new dam downstream of the existing one. Consultation on the proposed project began in 1989. A draft Environmental Assessment was submitted in November 2001 and the final EA was submitted in 2002. DENR issued a water quality certification, a mandatory precursor to receive the necessary federal permit, in May 2006. The project was completed and the town obtained final approval to impound water in October 2009. This impoundment, in combination with another reservoir upsteam, provides storage for 440 million gallons of water with an estimated yield of 4 million gallons per day.

2008 Horse Creek Reservoir (Southern Pines -water pumped from Drowning Creek)
May 2007 planning began for an off-stream raw water storage reservoir. An Environmental Assessment was submitted for the project. A finding of no significant impact (FONSI) and permission for construction were issued in December 2008. The impoundment covers 36 acres and provides off-stream storage for 140 million gallons of water.

2002 Nicks Creek Reservoir Modifications (Town of Carthage)
In the summer of 2002 reservoir modifications were completed under temporary permits issued because of extreme drought conditions. The temporary permits expired in 2003. Subsequent applications and review led to a final permit being issued in 2005. The impoundment provides on-stream storage of 1 million gallons of water.

2000 West Fork Eno Reservoir (Town of Hillsborough)
Hillsborough constructed a new on-stream water supply reservoir on the West Fork of the Eno River. Consultation and scoping for an Environmental Impact Statement began in June 1993 and a final EIS was submitted in June 1994. In 1998, an "Approval to Construct" was issued by DENR Division of Land Resources. This reservoir was completed and permission to impound water was granted in October 2000. The impoundment covers about 206 acres providing on-stream storage for 786 million gallons of water with an estimated yield of 1.8 million gallons per day.

1999 Buckhorn Dam and Reservoir Expansion (City of Wilson)
The City of Wilson expanded an existing reservoir on Contentnea Creek by constructing a dam downstream. In May 1990 Wilson submitted preliminary plans for operation of an expanded reservoir. In June 1991 DWR confirmed previously recommended minimum flow requirements and provided guidance for the Environmental Assessment. Design

began in 1996 and in 1998 construction began. The project was completed in 1999. Buckhorn Reservoir covers over 2300 acres providing storage for 6.7 billion gallons of water with an estimated yield of 26.7 million gallons per day.

1993 Burlington's Mackintosh Reservoir
The City of Burlington constructed a water supply reservoir on Big Alamance Creek. Consultation meetings between Burlington, the Office of Water and Air Resources, and US Army Corps of Engineers began at least as early as 1972. In 1976 DWR provided minimum flow recommendations for the proposed impoundment. In 1987 the COE requested agency review of the documentation submitted to support the request for a dredge and fill permit. The permit was issued sometime after that and construction began in 1991. Lake Mackintosh reservoir was completed in 1993. The impoundment covers over 1100 acres and provides storage for 7 billion gallons of water with an estimated yield of 36 million gallons per day

1993 Lake Howell (Cabarrus County/Water & Sewer Authority of Cabarrus County)
Cabarrus County constructed a water supply reservoir on Coddle Creek. During 1985 the department consulted with the county and DWR supplied minimum flow recommendations in July 1985. After review of environmental impact evaluations and acquisition of necessary permits the impoundment was constructed in 1992-1993. Lake Don T. Howell encompasses 1300 acres and provides over 5 billion gallons of storage that is estimated to reliably yield 28 million gallons per day.

1992 Stewarts Creek Reservoir Expansion (Mount Airy)
The height of an existing barrier was raised to increase the capacity of the pumping pool for the Town of Mount Airy's water treatment plant. Request for expansion was submitted in 1989 and DWR provided minimum release recommendations in October 1989 and a permit to construct was issued April 1992. The impoundment provides on-stream storage for 300 million gallons of water with an estimated yield of 14 million gallons per day.

1991 Back Creek Reservoir (Graham-Mebane Water Supply)
The cities of Graham and Mebane constructed a water supply reservoir on Back Creek. Consultation meetings were held November 1986. DWR provided minimum release recommendation in February 1987. The reservoir was completed in 1991. The impoundment covers about 650 acres and provides on-stream storage for 2.8 billion gallons of water with an estimated yield of 12 million gallons per day.

#11

DENR
November 8, 2011

HISTORY OF RANDLEMAN RESERVOIR
(state approvals are highlighted)

As a federal flood control project:

1937 – US Army Corps of Engineers proposed dam on the Deep River above Randleman as part of a flood control project for the Cape Fear River

1968 – Congress authorized $11 million dollar/ 3,000 acre Randleman Lake project for flood control, water supply and recreation

1976 – First U.S. Army Corps of Engineers Environmental Impact Statement

1987 – After spending $6.1 million on engineering, surveying, planning and environmental impact statements, the Corps of Engineers withdrew its support for the federal project because the costs would outweigh the flood control benefits. By that date, the estimated costs of the project had reached $135 million.

As a regional water supply project:

1987-1988 – Piedmont Triad Regional Water Authority proposed a smaller project to be funded by local government as a water supply. Estimated cost: $67 million for a 6,000 acre project.

1988 – Sierra Club, Clean Water Fund of N.C., Audubon Society, Deep River Coalition, Conservation Council of N.C., and League of Women Voters asked the administration of Gov. Jim Martin to order a new environmental impact statement for the project arguing that the 1975 Corps of Engineers EIS was "inadequate and out of date".

1990 – The Piedmont Triad Regional Water Authority received a water quantity/quality study from consultants that concluded the proposed reservoir could produce water acceptable for use as a public water supply.

1991 – The Water Authority released a revised Draft EIS; biological and aquatic studies began on the project area.

1991 – Based on the DRAFT EIS, the Environmental Management Commission authorized the Authority to use the power of eminent domain to acquire land for the reservoir and also approved a transfer of water from the Deep River to the Haw River.

1994 – Piedmont Triad Regional Water Authority prepared an initial wetland mitigation plan to satisfy requirements of both Section 404 (the Corps of Engineers permitting program) and Section 401 (state water quality certification) of the Clean Water Act.

1995 – Preliminary design work on the dam began.

1996 – Archaeological and architectural studies of the project area began. Dam design and land acquisition continued.

1997 – Revised Draft EIS released for public comment.[1]

1998 – Piedmont Triad Regional Water Authority consultants completed studies of the contaminated Seaboard Chemical and Landfill sites adjacent to the Deep River and concluded concentrations of toxins would be within drinking water standards.

1998 -- N.C. Environmental Management Commission (EMC) completed a rulemaking to classify all waters of the Randleman Lake Watershed for water supply uses, designate the area as Critical Water Supply Watershed and put in place standards to protect the proposed water supply from excess nutrients.

1998 -- The Authority submitted an application to the N.C. Division of Water Quality for a Section 401 Water Quality Certification.

1999 –In March of 1999, the N.C. Division of Water Quality issued the Section 401 Water Quality Certification for the project. (The Corps of Engineers cannot issue a Section 404 Clean Water Act permit to fill waters and wetlands – required for dam and reservoir construction – unless the state certifies under Section 401 of the Clean Water Act that the project will meet state water quality standards.)[2]

2000 – In December 2000, the Corps of Engineers published the final EIS/Record of Decision on the Randleman Reservoir project.

2001 – April 6, 2001, the Corps of Engineers issued the Section 404 Clean Water Act permit for filling waters and wetlands to construct the Randleman dam. Construction began in August of 2001.

[1] Since the Corps of Engineers' Section 404 permit for the dam required an EIS under the National Environmental Policy Act, the Corps ultimately had responsibility for the adequacy of the Randleman Dam EIS. As a result, the Corps determined when the Draft EIS was complete; published the revised Draft EIS for public comment; responded to comments; and published the Final EIS and Record of Decision (the selection of the preferred project alternative from the alternatives described in the EIS).

[2] The American Canoe Association and the Deep River Coalition appealed the approval of the Section 401 Certification. The legal challenge ended with a 2004 N.C. Court of Appeals decision upholding the state action.

Steve Troxler
Commissioner

North Carolina Department of Agriculture and Consumer Services

July 1, 2011

Honorable Members of the Environmental Review Commission:

On behalf of the Statistics Division of the North Carolina Department of Agriculture and Consumer Services, I respectfully submit to you the results of the 2010 Agricultural Water Use Survey. As in 2009 and 2010, this report was prepared to fulfill the requirements of N.C. Gen. Stat. § 106-24(b), as amended by Session Law 2008-143.

As required by 7 U.S.C. § 2276, the report includes aggregated data for the entire state. In the coming weeks, the Department will also release aggregated county and river basin water use data, where such information can be produced with accuracy and in compliance with federal law.

This year, about 3600 farms were contacted with a 92% response rate showing 1,400 farms that withdrew 10,000 gallons or more of water per day. We are now in our third year of collecting data from agricultural users, at a threshold for reporting which is well below that of any other sector. The data continues to support the assertion that, when comparing historic total ground and surface statewide withdrawals of water for agricultural production with total withdrawals from all users (nonagricultural and agricultural combined, as recorded by the Department of Environment and Natural Resources and currently reported on their website), the survey demonstrates that agricultural use in 2010 on an average daily basis accounted for less than 1% of all withdrawals.

I hope that the information supplied here is useful as you continue to discuss legislation and policy which has implications for our farmers and agribusinesses. Our staff is available to answer questions regarding the survey and its results, and I trust you will call upon them as needed. They are extraordinary, and their work is made much easier as a result of the partnerships we have with the Department of Environment and Natural Resources and the many agricultural organizations across North Carolina who have promoted this survey. I look forward to working with each of you to preserve and promote the agricultural industry in the months and years ahead.

Sincerely,

Steve W. Troxler

cc: Tom Reeder, NC Department of Environment and Natural Resources
Herb Vanderberry, Director, NC Field Office, National Agricultural Statistics Service

Steve.Troxler@ncagr.gov • www.ncagr.gov
1001 Mail Service Center Raleigh NC 27699-1001 • (919) 707-3000 • Fax (919) 733-1141
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Table 1: Total & Average Daily Water Withdrawn 1
2010 North Carolina Water Use by Month

Month	# Operations (count)	Monthly Total Ground (gallons)	Monthly Total Surface (gallons)	Average Across All Days-Ground (gallons)	Average Across All Days-Surface (gallons)
January	875	327,746,853	443,718,548	10,572,479	14,313,502
February	914	306,896,139	408,396,413	10,960,576	14,585,586
March	1007	429,059,324	650,423,885	13,840,623	20,981,416
April	1102	587,000,892	897,557,431	19,566,696	29,918,581
May	1202	736,126,685	1,462,543,675	23,746,022	47,178,828
June	1354	957,486,641	2,794,574,636	31,916,221	93,152,488
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November	938	366,143,125	570,731,451	12,204,771	19,024,382
December	870	305,086,729	504,999,747	9,841,507	16,290,314
Annual Average				**19,543,563**	**43,774,974**

Operations:

1420 Total Operations

Daily Withdrawal Capacity (incl. ground & surface):

1,094,941,408 (gallons)

1 Users of 10,000 gallons or more per day. Averages reported in this table reflect the average water withdrawn across all days of the month. Does not include farms that have reported their withdrawals directly to DENR by July 1, 2011. The monthly number of operations will not add to the total. Some operations reported both surface and ground water withdrawals, which are counted twice in the monthly number of operations. However, the total number of operations represents operations that withdrew water at any time during the year, regardless if withdrawn from multiple sources.

Table 2: Demand Use for Days Applied [1]
2010 North Carolina Water Use by Month

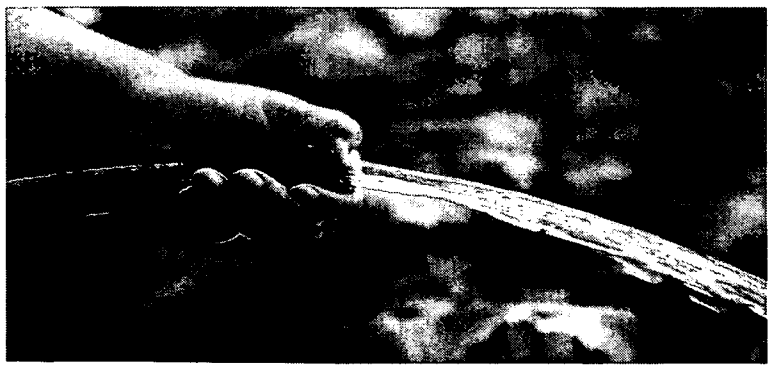
Month	Average Days Applied Ground (days)	Average Days Applied Surface (days)	Total Avg. Daily Ground (gallons)	Total Avg. Daily Surface (gallons)	Total Max Daily Ground (gallons)	Total Max Daily Surface (gallons)
January	28	21	14,128,112	17,727,629	16,453,433	19,348,289
February	25	18	15,459,206	19,100,220	20,286,659	21,297,486
March	27	17	37,822,513	48,805,093	42,858,438	50,350,902
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Annual Average			**35,715,602**	**86,205,294**		

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Agricultural Water Use

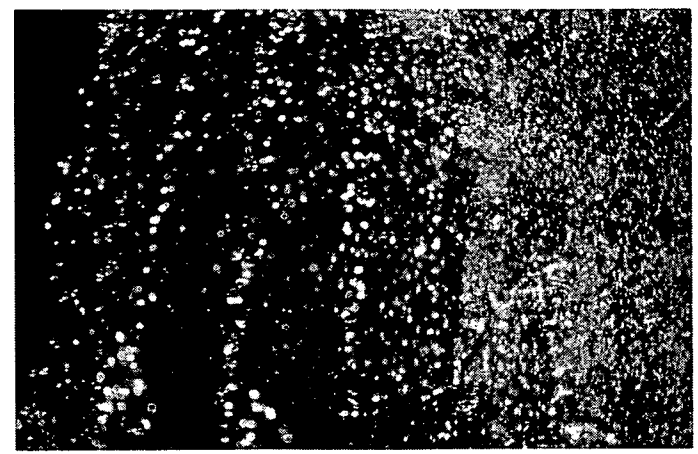
2010

- Drought in 2007-08 raises awareness of water supplies in North Carolina
- Legislation is discussed to better manage the state's water resources
- Information for agricultural water use is available for the CCPCUA (15 counties) but not statewide (except over 1 mil GPD)
- SL2008-0143 is passed in 2008 – Section 2 outlines collection of agricultural water use data



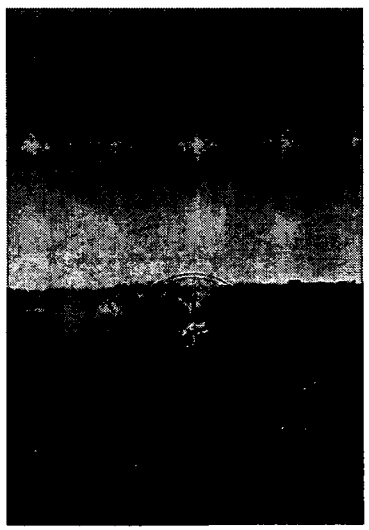
Legislation Requirements

- Annually collect water use data from operations using 10,000 GPD or more
- Collaborate with DENR in design of form
- Publish results by July 1
- Voluntary and Confidential



Survey Promotion

- Statewide WebCast September 2008
  - Commissioner Troxler, NCDA
  - Larry Wooten, President, NC Farm Bureau
  - All Commodity & Ag Organizations invited
- Commodity meetings
- County meetings
- Extension Offices



WATER USE ESTIMATION GUIDE

USE THIS GUIDE ONLY IF YOU ARE UNABLE TO COMPLETE TABLE 1 OR 2 (please return with your questionnaire)

*Name on Survey Label*_____ *DATE*_____

1. HOGS If you had hogs, please tell us:
   - What was the maximum number of hogs and pigs you had **at one time** in all of this operation's houses. _____
   - Please check below the description(s) which apply to your operation.
     _____Nursery
     _____Finish Only
     _____Farrow to Wean
     _____Farrow to Feeder
     _____Farrow to Finish

2. POULTRY If you had poultry, please tell us:
   - What was the maximum number of birds you had **at one time** in all of this operation's houses. _____
   - Please check below the description(s) of the birds on your operation.
     _____Broiler
     _____Layers
     _____Turkeys
   - On average, how many **consecutive** weeks are the houses **full?**_____
   - On average, how many **consecutive** weeks are the houses **empty?**_____
   - What were the dates that your houses were last empty?
     _____

3. CROPS If you used DRIP IRRIGATION, and don't know how many inches were applied, please tell us the following:
   - How many feet between rows_____
   - How many inches (spacing) between emitters_____
   - Flow rate per hour per emitter_____

If you prefer personal guidance, please wait, and one of our phone enumerators will call you in late February or March.

WATER USE ESTIMATION TOOL

*(USED **ONLY** FOR RESPONDENTS WHO DON'T HAVE METERS)*

*NAME*_____ *POID* _____ *DATE* _____

Capacity

- What was your water source.... Ground or Surface?
- Tell me the pumping capacity of each of your motors (example: 30 gallons/minute and 500 gal/min).... (here's the math...30gal/min x 60min x 24 hours)+ (500gal/min x 60min x 24 hours)=(43,200+720,000)=763200

MOTOR NOTES:

HOGS

- What was the peak number of hogs and pigs you had **at one time** in ALL of this operations houses TOTALED together. _____
- What type of hog operation do you have (nursery, finish only, farrow to wean, farrow to feeder, farrow to finish) _____
    - How many **CONSECUTIVE** weeks are the houses full? _____
    - How many **CONSECUTIVE** weeks are they empty? _____
    - When were the empty weeks? _____

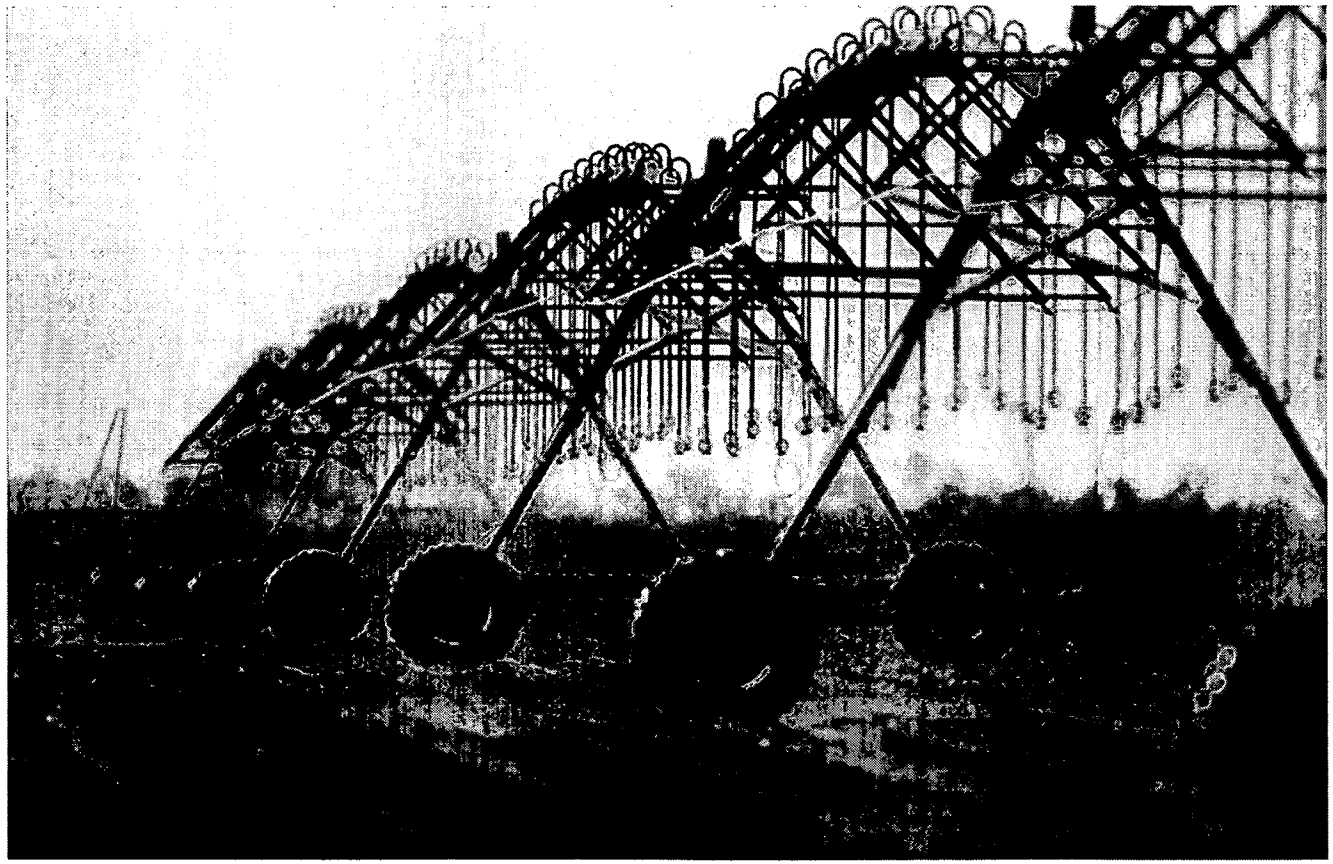
POULTRY

- What was the peak number of birds you had **at one time** in ALL of this operations houses TOTALED together._____
- What type of poultry operation do you have (broiler, layers, turkeys) _____
    - How many **CONSECUTIVE** weeks are the houses full?_____
    - How many **CONSECUTIVE** weeks are they empty?_____
    - When were the empty weeks? _____

CROPS

- What months did you irrigate in? _____
- How many days did you irrigate in XXX (month name)? _____
- What was the maximum # of inches you applied on one acre in one day? _____
    - IF DRIP IRRIGATION.. and they don't know inches.. ask the following
        - How many feet between rows_____
        - How many inches (spacing) between emitters_____
        - Flow rate per hour per emitter_____
- What was the total # of inches you applied on one acre for XXX (month name)?
- What do you think the average # of acres were that you irrigated in one day?_____

Survey Results - 2010

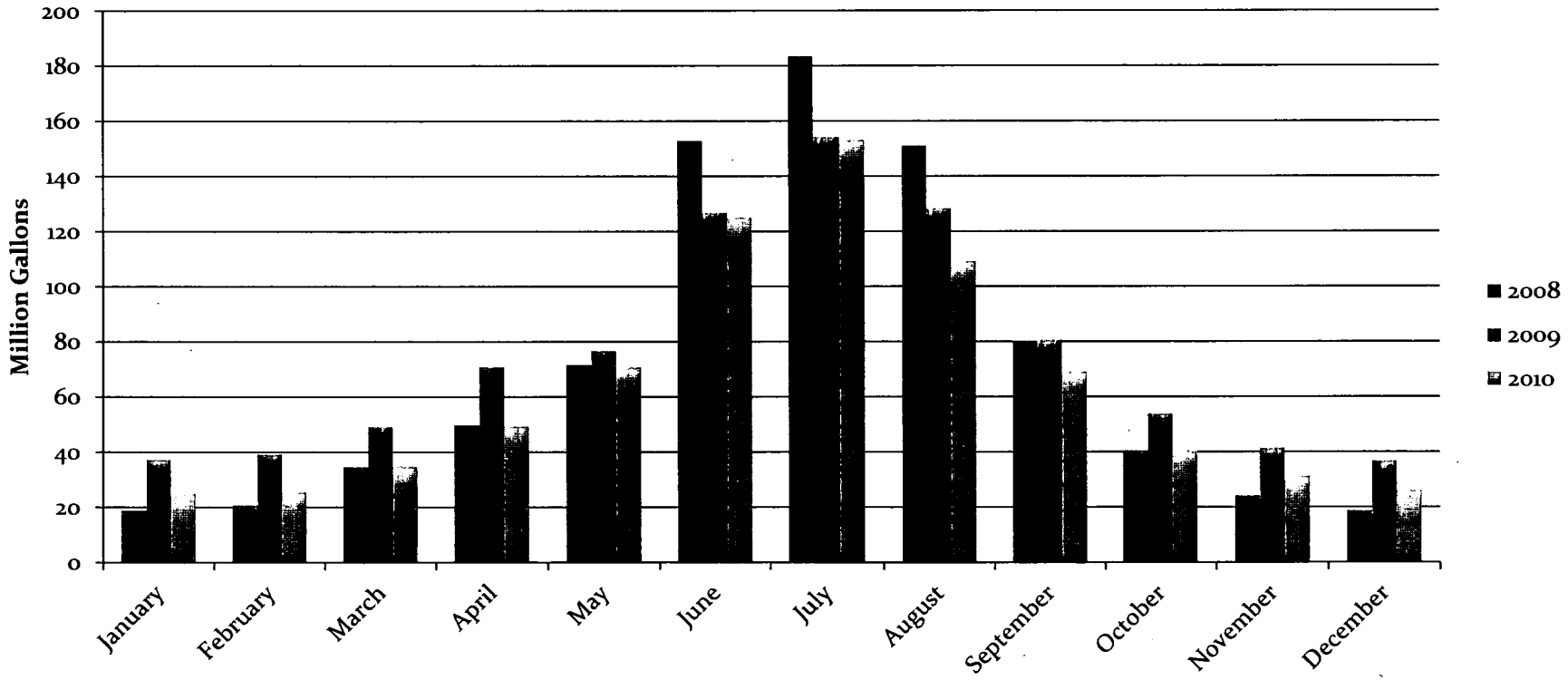


Highlights

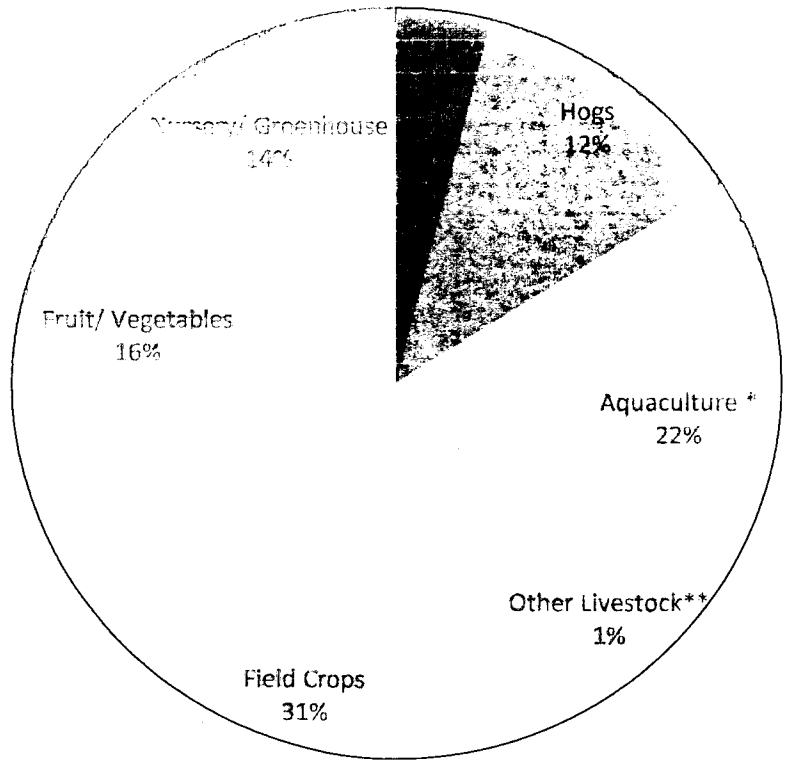
- 92% Response Rate
- New Defensibility Statement
- # of Operations using 10,000 +
  - 2010 – 1420
  - 2009 – 1372
  - 2008 - 1498
- Average Daily Use
  - 2010 – 63.3 million gallons
  - 2009 – 74.6 million gallons
  - 2008 – 70.5 million gallons

Historical Comparison by month

Average Across All Days
Ground & Surface Water Withdrawals
2008 - 2010

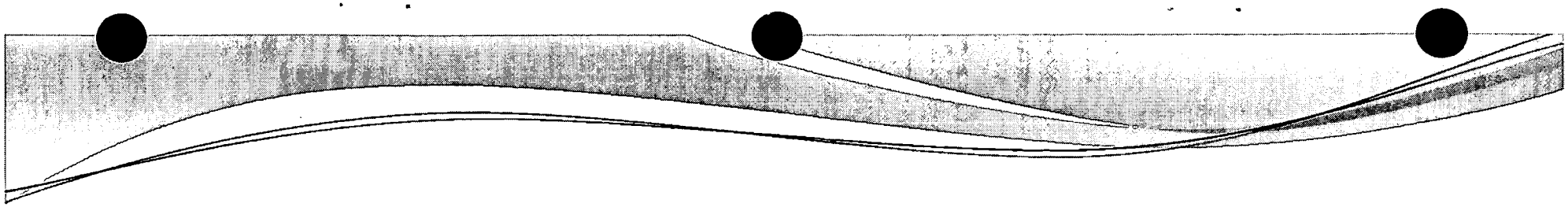


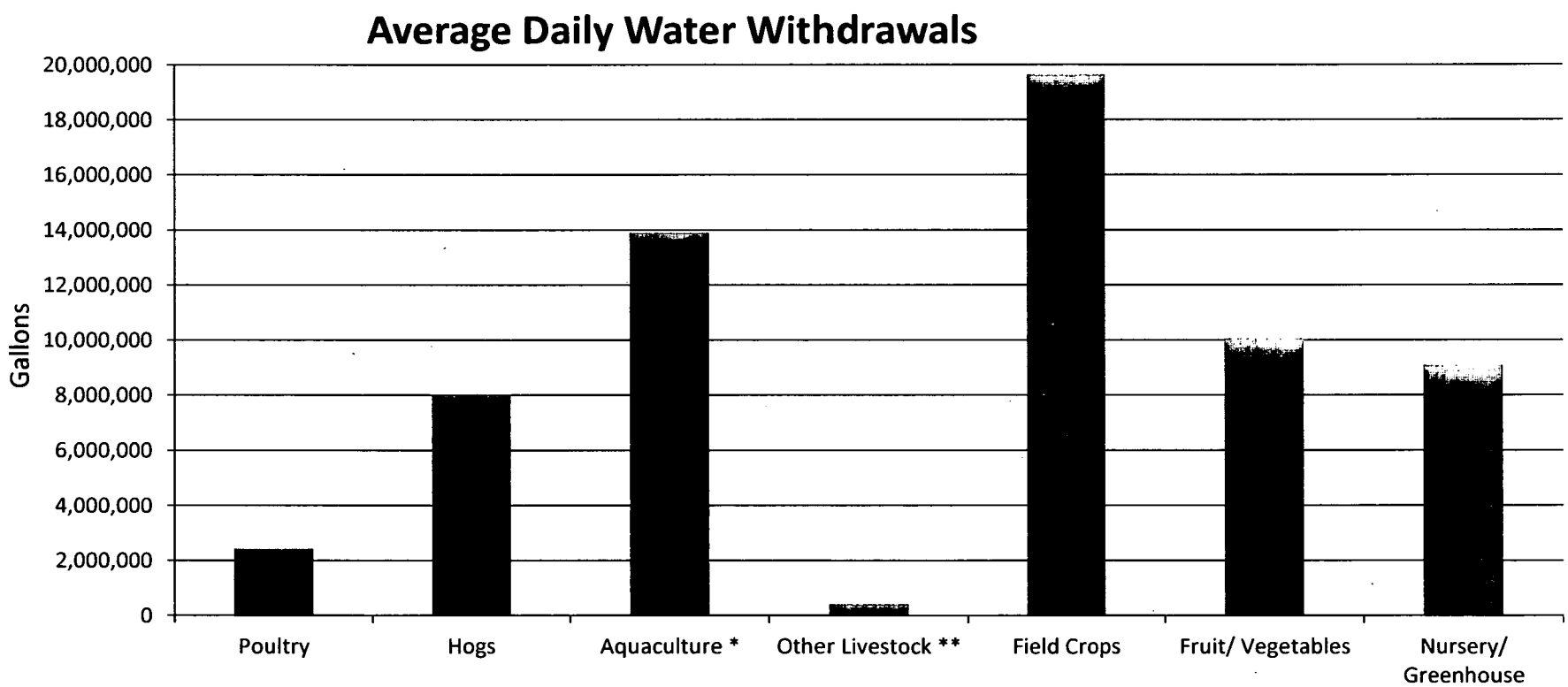
Annual Water Withdrawals by Percent



* 97% of aquaculture water withdrawals occur in western counties from rivers and streams and are typically flow through.

** Other Livestock includes cattle, horses, goats, sheep etc.

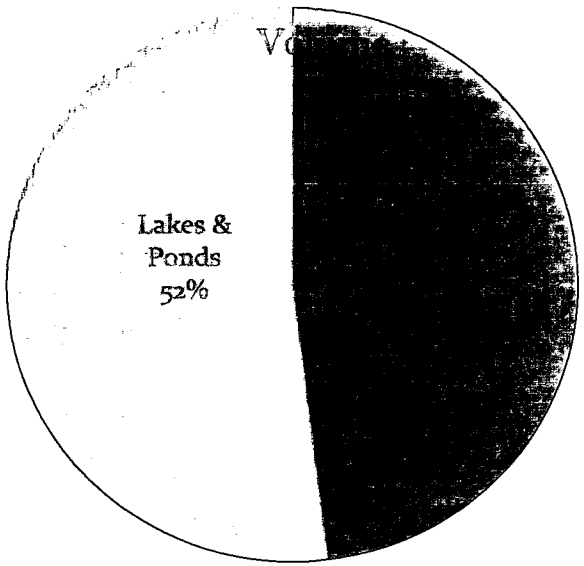




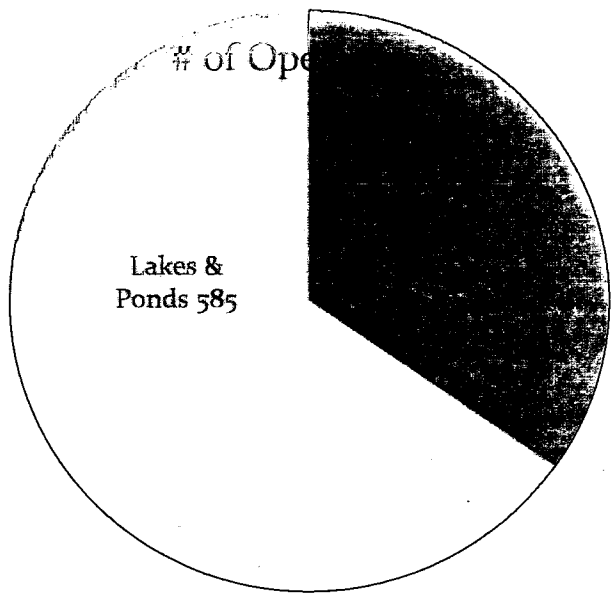
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Annual Surface Water Withdrawals

Volume



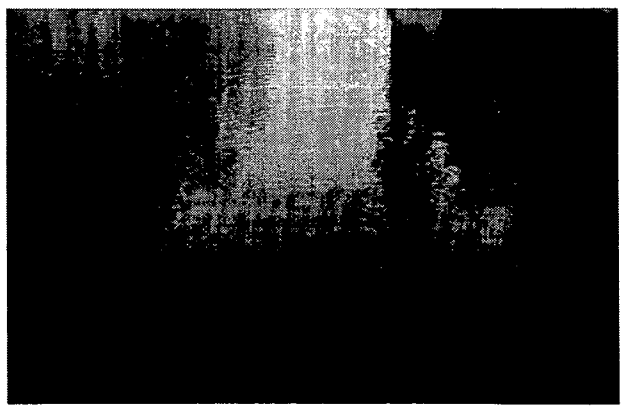
Of Operations



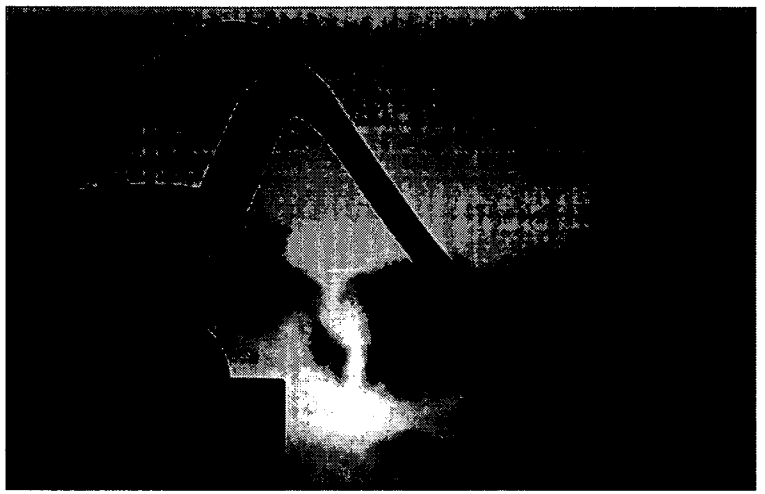
[1] **33% of River & Stream Withdrawals are made by aquaculture operations from the western portion of the state and are typically flow through.**

Benefits

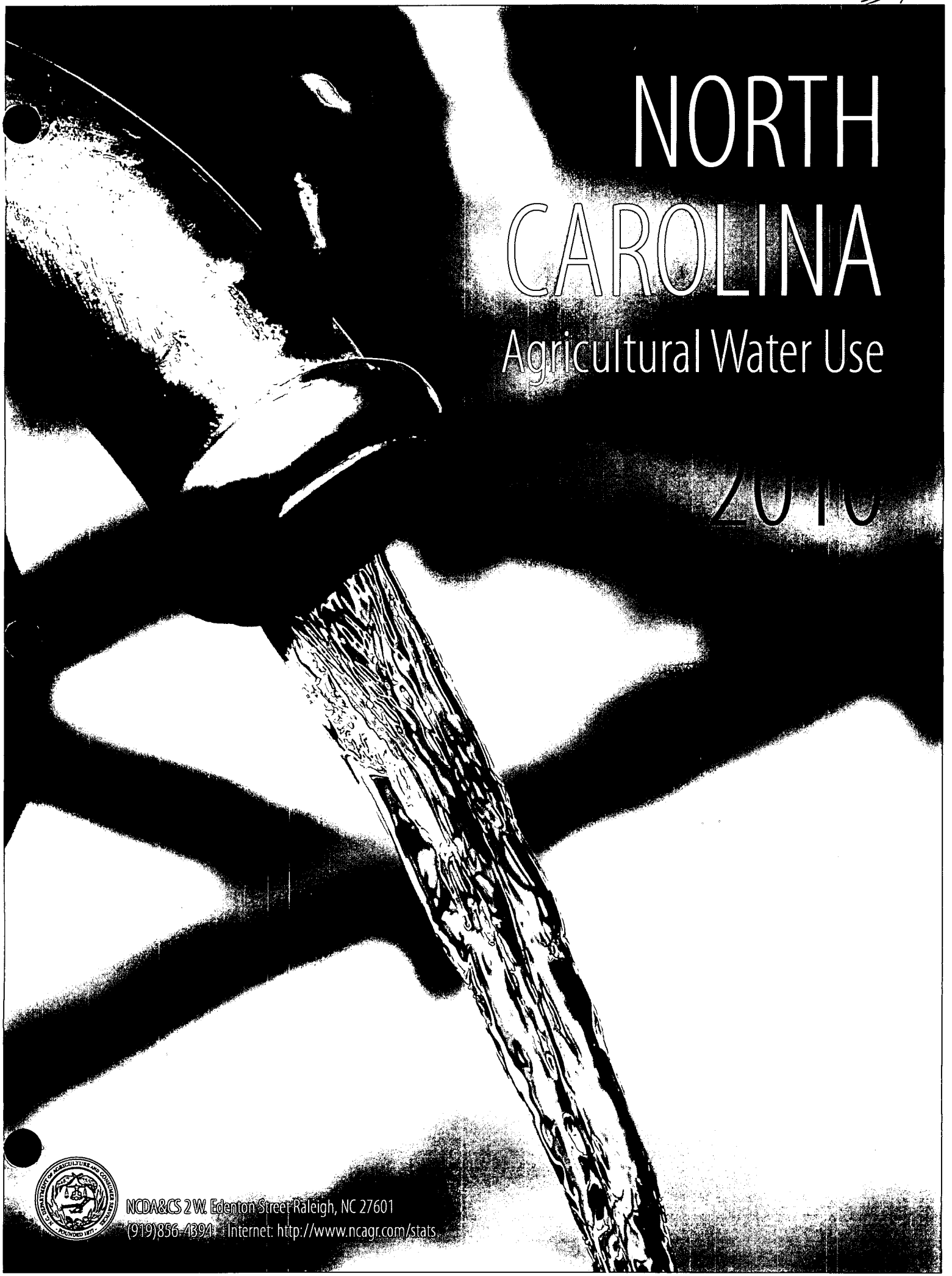
- Statewide agricultural water use data
  - Survey based
  - Defensible
  - Confidential
- Public/private collaboration
- Farmer awareness of use
- Document individual farm water needs



Appreciation



- NCDA&CS
- Farm Bureau
- Commodity Associations
- NC Cooperative Extension
- NCSU
- NC Foundation for Soil and Water Conservation



NORTH CAROLINA

Agricultural Water Use

2018

NCDA&CS 2 W. Edenton Street Raleigh, NC 27601
(919)856-4394 | Internet: http://www.ncagr.com/stats

NORTH CAROLINA
2010 Agricultural Wateruse

The third statewide survey was conducted to document water use for the agricultural sector during 2010. As directed in legislation enacted in 2008 (SL2008-0143), the North Carolina Department of Agriculture and Consumer Services, Agricultural Statistics Division, is required to collect annual information from farmers who withdraw 10,000 gallons or more in any one day. Individual responses remain confidential and are only used in combination with other reports to produce totals.

Farmers who use over 1,000,000 gallons in any one day are required to report their water usage directly to the Department of Environment and Natural Resources (DENR). DENR's report can be found on **http://www.ncwater.org/whichsystem.php .**

When looking at agricultural water use from a total volume withdrawn perspective, table 1 on page 3 is most representative of total water use. Because farms that withdraw the largest amounts of water do not make those withdrawals every day, the average daily use across all 365 days of the year is most representative of relative volumes used. On average, farm operations that use irrigation will withdraw water about 20 days each month. Field crop operations use water even less often, primarily to supplement rainfall. Western states rely on irrigation more frequently and in larger volumes throughout the year. To help put North Carolina water use in perspective, there were about 150,000 acres of farm land irrigated in 2008, compared to nearly 9 million total acres of land in farms. While there are other agricultural users of water, including livestock and poultry producers, aquaculture farms, and others, the largest volume of water use is from irrigators. The average North Carolina farm that uses water does so infrequently and in relatively small amounts. Table 2 displays "demand" use, which is calculated by dividing the total water withdrawn for the month by the days applied.

The results of this survey reflect water withdrawals from ground and surface sources. Many comparisons across sectors will incorporate an estimate of consumptive use of withdrawals. The definition of a consumptive use varies depending on the source. Most experts in agricultural sciences consider consumptive use to be the amount of water that is either taken up by plants, or evaporated. According to an Economic Research Service (USDA) report, irrigation consumptive use on farms is about 61 percent of total withdrawals nationally. This can vary greatly between regions depending on the type of system used and efficiency of the irrigation equipment.

Of the farms surveyed in the state, 1420 withdrew over 10,000 gallons of water in any one day. The year began with the entire state experiencing normal moisture conditions. The central & eastern portions briefly experienced abnormally dry conditions in late April but quickly recovered to normal. Abnormally dry conditions began creeping back into the state in late June from the perimeters of the state's mountain, coastal, and northern counties. These conditions spread and worsened throughout the state in July to include all but the south central piedmont. Conditions improved in many counties in August but worsened in September to wrap most of the state in abnormally dry conditions with the southern Piedmont experiencing moderate drought. October found conditions improving in the eastern counties while moderate drought and abnormally dry conditions continued in the Piedmont and Western areas of the state. July was the largest water use month in 2010, averaging 153.1 million gallons daily, with a maximum daily withdrawal of 356.9 million gallons. The annual average daily water use for 2010 was 63.3 million gallons. The daily withdrawal capacity for the 1420 operations totaled 1094.9 million gallons in 2010.

A questionnaire was mailed to operations which had potential for large water usage. Operations that did not respond were contacted by telephone follow-up. In addition, livestock and poultry contractors in the state were contacted by email, phone, or mail.

The unique number of operations, the annual average daily ground and surface usage, as well as the capacity is published by county and by hydrologic unit codes (HUC). The capacity is the potential amount of ground and/or surface water that could be withdrawn in a 24-hour period. The published capacity represents the sum of capacities for all reporting operations in that county or HUC. In nearly all cases, this capacity was never met. Data was not disclosed if there were less than three operations in any category or if one report comprised 60 percent or more of the total.

One survey instrument was used to gather data for the whole state as well as for the Central Coastal Plain Capacity Use Area (CCPCUA). Results for the CCPCUA are summarized and published in a separate table. Caution should be used in comparing the 2010 summary with summary data prior to 2007 due to the impact of a more comprehensive source of names, primarily from the 2007 Census of Agriculture.

Table 1: Total & Average Daily Water Withdrawn[1]
2010 North Carolina Water Use by Month

Month	# Operations	Monthly Total-Ground	Monthly Total-Surface	Average Across All Days-Ground	Average Across All Days-Surface
	(count)	*(gallons)*	*(gallons)*	*(gallons)*	*(gallons)*
January	849	327,746,853	443,718,548	10,572,479	14,313,502
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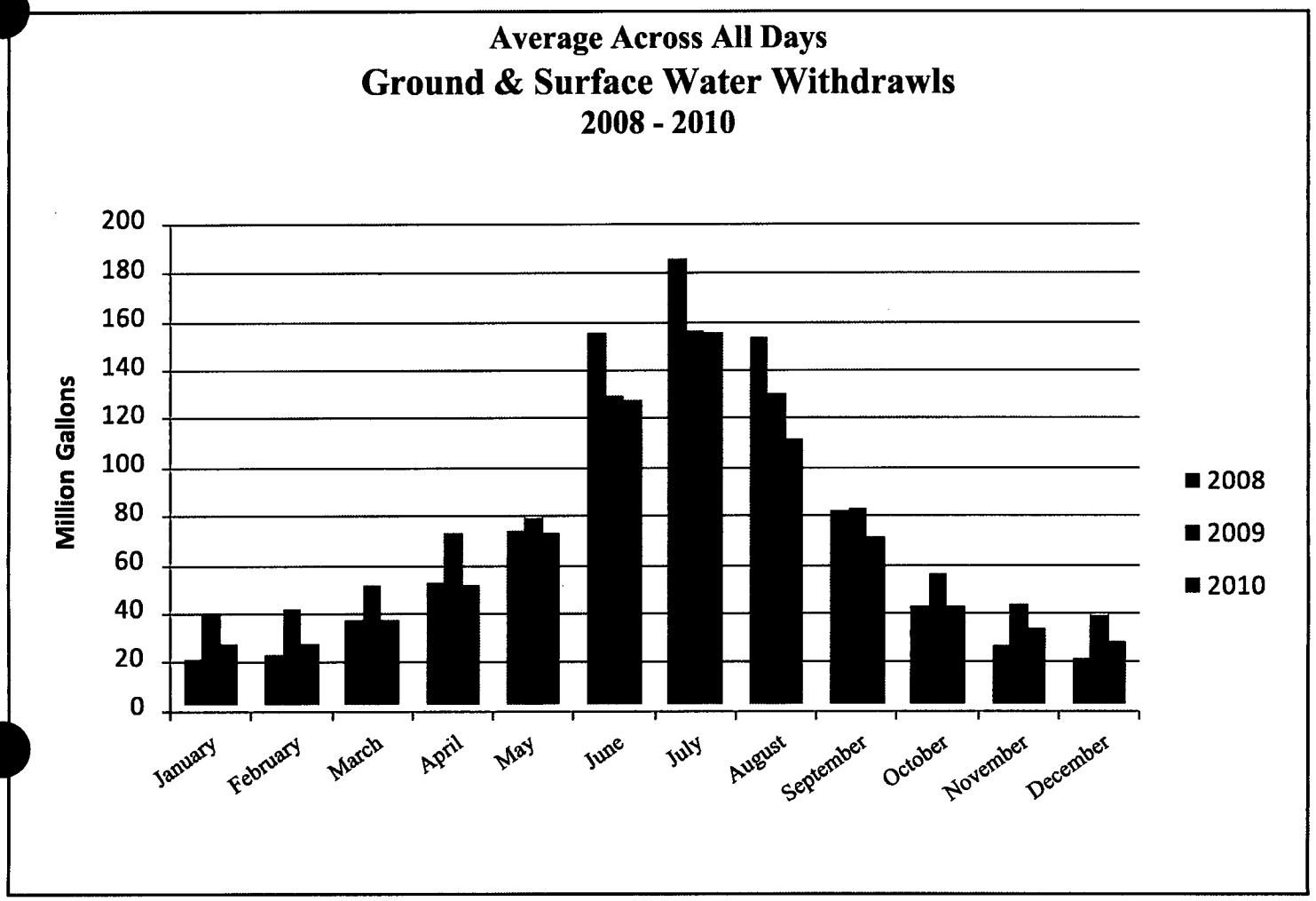
Operations[2]:

1420 Total Operations

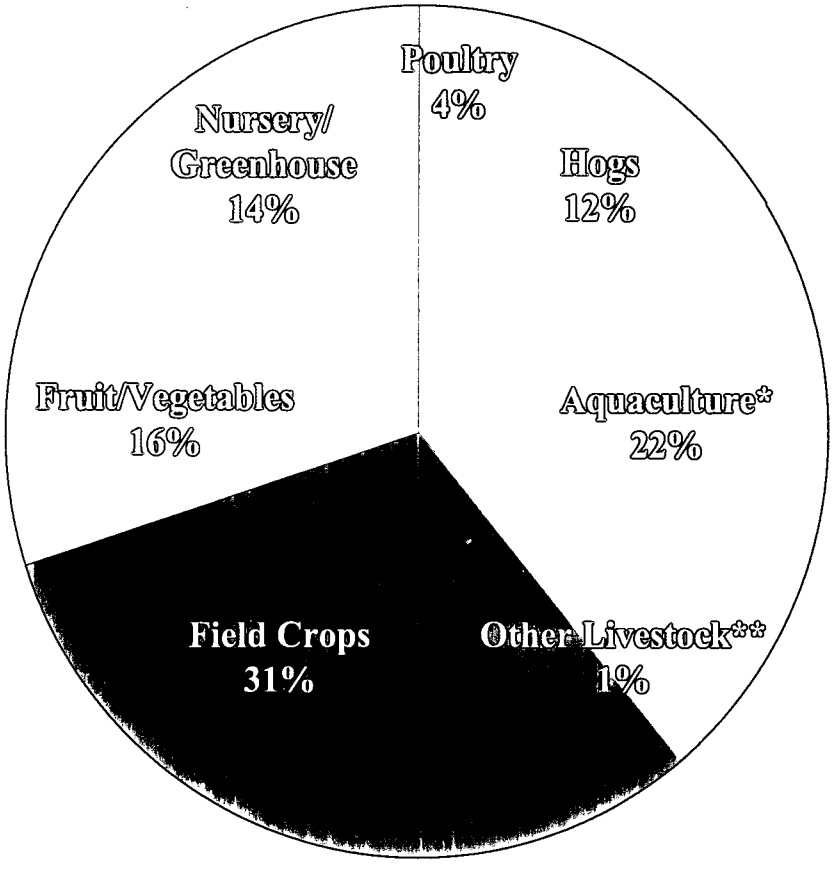
Daily Withdrawal Capacity (incl. ground & surface):

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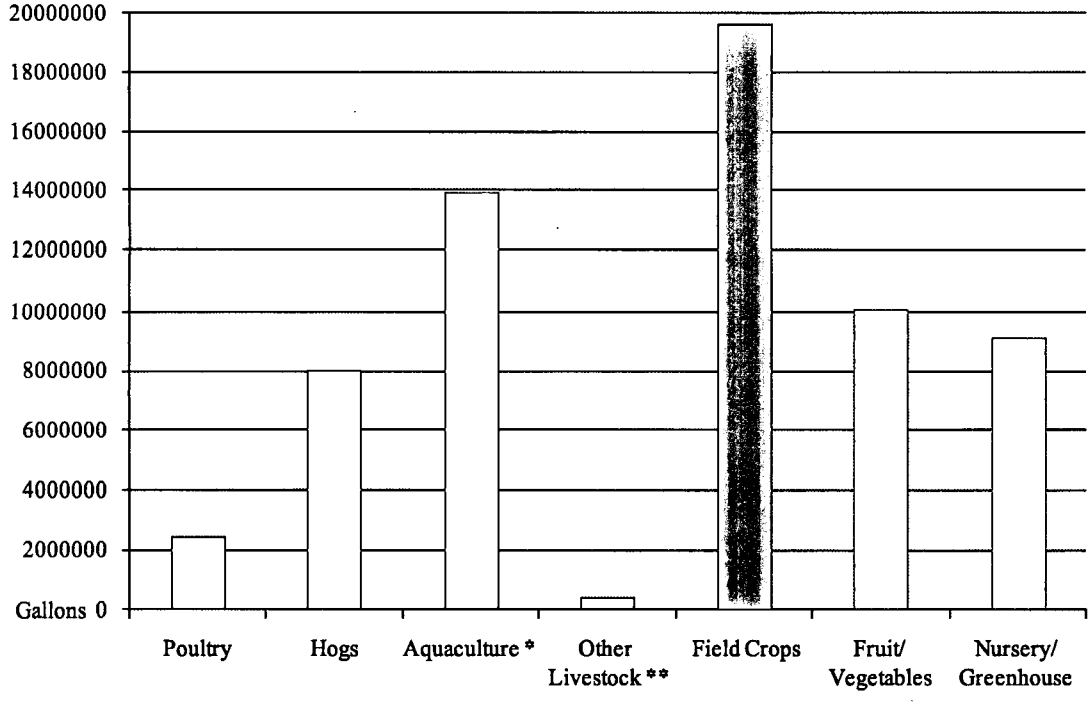


Annual Water Withdrawls by Percent Ground and Surface



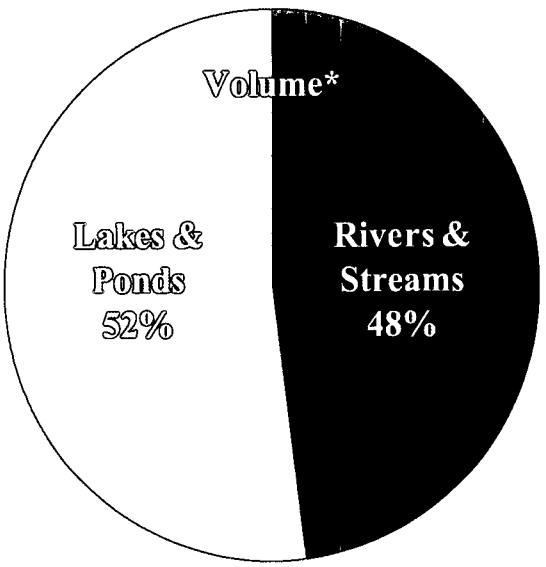
***97 % of aquaculture water withdrawls occur in western counties from rivers and streams and are typically flow through/non-cosumptive.** **Other Livestock includes cattle, horses, goats, sheep, etc.

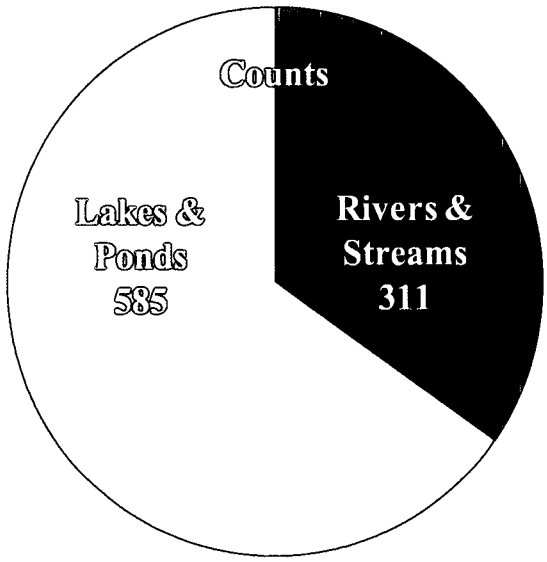
Average Daily Water Withdrawals Ground and Surface



*97 % of aquaculture water withdrawls occur in western counties from rivers and streams and are typically flow through/non-cosumptive. **Other Livestock includes cattle, horses, goats, sheep, etc.

Total Surface Water Withdrawn Annually





* 33% of River & Stream Withdrawals are made by aquaculture operations from the western portion of the state and are typically flow through/non-consumptive.

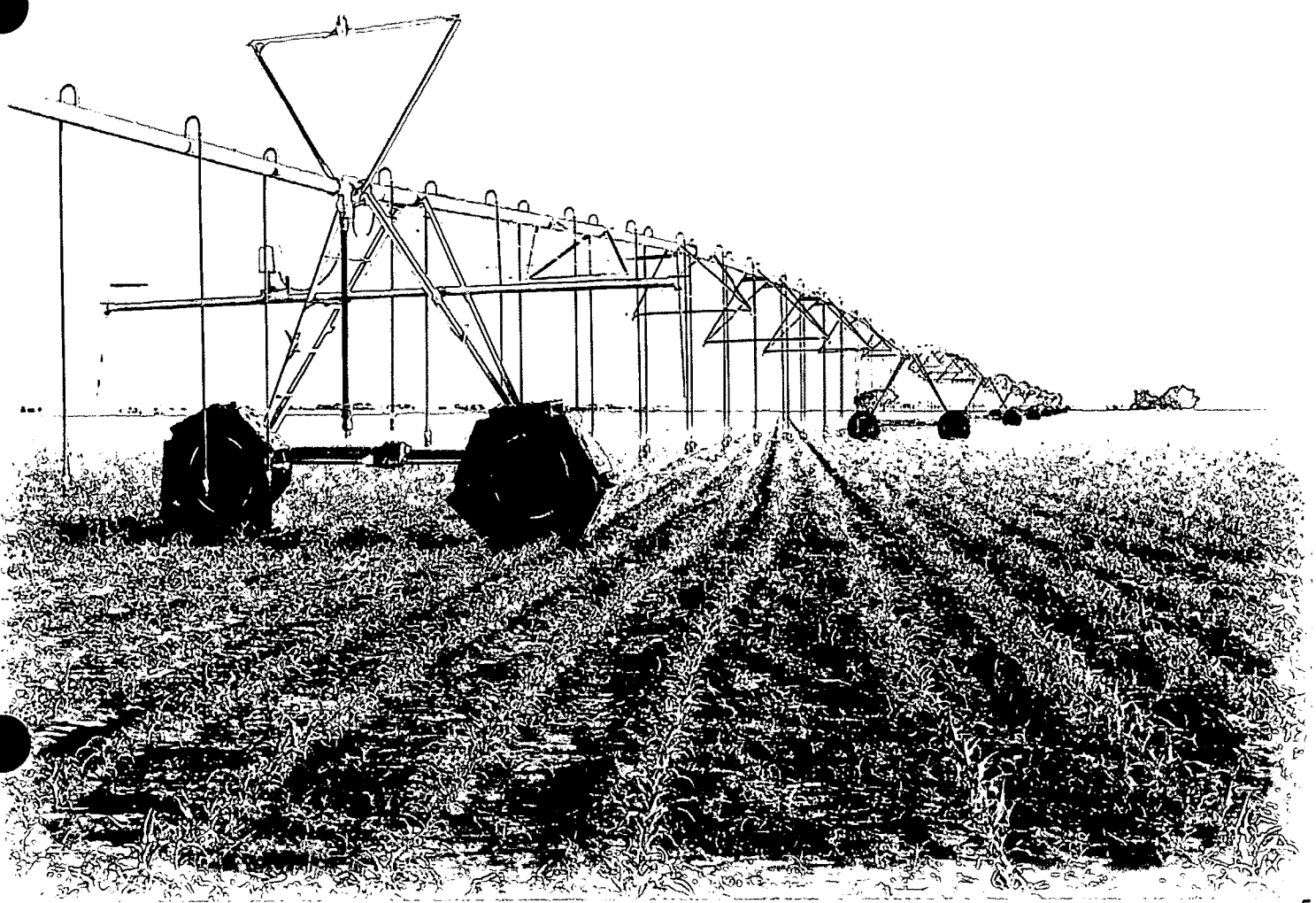


Table 2: Demand Use for Days Applied [1]
2010 North Carolina Water Use by Month

Month	Average Days Applied Ground	Average Days Applied Surface	Total Avg. Daily-Ground	Total Avg. Daily-Surface	Total Max Daily-Ground	Total Max Daily-Surface
	(days)	*(days)*	*(gallons)*	*(gallons)*	*(gallons)*	*(gallons)*
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Annual Average			**35,715,602**	**86,205,294**		

Users of 10,000 gallons or more per day. Averages reported in this table reflect the average water withdrawn during the days of application. Does not include farms that have reported their withdrawals directly to DENR by July 1, 2011.

2010 North Carolina
Water Use - County Summary

County	Unique Operations[1]	Annual Average Daily [2] Ground	Annual Average Daily [2] Surface	Daily Withdrawal Capacity [3]
	(count)	*(gallons)*	*(gallons)*	*(gallons)*
Alamance	9	*	141,223	12,396,360
Alexander	7	19,578	*	1,079,600
Anson	9	73,265	*	2,103,480
Ashe	3	*	21,241	3,885,000
Bertie	18	129,548	2,082,145	32,286,400
Bladen	88	1,283,878	724,550	128,822,179
Brunswick	5	54,768	*	1,363,000
Buncombe	5	*	248,202	1,401,080
Cabarrus	7	41,187	*	1,923,520
Caldwell	8	*	125,305	5,894,700
Caswell	17	*	193,196	9,826,200
Catawba	8	*	569,551	11,435,800
Chatham	12	90,855	*	956,440
Cleveland	9	63,812	22,578	2,714,080
Craven	9	119,335	*	5,434,646
Davidson	9	21,662	*	6,158,440
Duplin	135	2,023,176	*	32,060,904
Durham	6	*	40,270	937,520
Edgecombe	16	*	1,093,956	23,296,173
Franklin	18	*	500,669	20,861,060
[illegible]nville	19	425,448	346,321	17,876,300
Greene	31	411,009	*	38,807,824
Halifax	8	*	257,348	7,132,880
Harnett	25	136,975	137,124	10,464,754
Henderson	11	*	310,796	4,370,600
Johnston	48	*	878,120	26,506,380
Jones	14	161,988	*	3,294,410
Lee	20	61,563	216,146	13,539,100
Lenoir	15	162,021	*	5,866,800
Lincoln	9	109,524	*	9,559,400
Montgomery	18	65,468	*	13,993,400
Moore	33	*	536,992	22,507,600
Nash	29	133,943	1,641,659	28,514,040
Northampton	11	279,531	*	18,726,400
Onslow	10	88,232	*	1,699,400
Orange	10	*	73,724	5,424,000
Pender	30	698,489	1,390,793	43,176,680
Person	13	12,391	364,956	13,267,440
Pitt	26	533,710	591,338	12,013,806
Randolph	30	209,627	401,890	11,265,180
Richmond	17	158,391	237,734	14,770,157
Robeson	49	2,570,340	*	29,464,829
[illegible]kingham	32	161,705	475,787	30,064,712
Rowan	7	21,510	*	17,264,800
Sampson	134	2,451,430	617,798	49,259,842
Stanly	5	33,977	*	1,482,900
Stokes	5	*	33,166	4,927,200
Union	25	258,188	*	22,281,940
Vance	13	*	618,327	18,643,000
Wake	41	143,055	1,477,433	28,822,416
Warren	14	*	480,902	10,173,000
Washington	8	92,446	*	1,251,661
Wayne	43	521,274	*	13,472,093
Wilkes	11	117,176	*	3,242,600
Yadkin	5	28,426	*	1,943,200
Other Counties[4]	203	5,574,661	26,923,733	235,034,082
STATE	**1420**	**19,543,563**	**43,774,974**	**1,094,941,408**

** disclosure - one operation is greater than 60% of total or less than 3 operations.*
[1] represents the unique # of operations which withdrew surface and or ground water. [2] represents the average across all 365 days of the year. [3] includes ground and surface. [4] includes non-disclosed data from the table above and all data for Alleghany, Avery, Beaufort, Burke, Camden, Carteret, Cherokee, Chowan, Clay, Columbus, Cumberland, Currituck, Dare, Davie, Forsyth, Gaston, Gates, Graham, Guilford, Haywood, Hertford, Hoke, Hyde, Iredell, Jackson, McDowell, Macon, Madison, Martin, Mecklenburg, Mitchell, New Hanover, Pamlico, Pasquotank, Perquimans, Polk, Rutherford, Scotland, Surry, Swain, Transylvania, Tyrrell, Watauga, Wilson, Yancey, as well as non-disclosed data from the published counties.

2010 North Carolina Water Use - Hydrologic Unit Code Summary

Hydrologic Unit Code	Unique Operations[1]	Annual Average Daily[2] Ground	Annual Average Daily[2] Surface	Daily Withdrawal Capacity[3]
	(count)	*(gallons)*	*(gallons)*	*(gallons)*
03010103	24	266,584	252,839	15,960,832
03010104	24	13,561	438,197	19,634,500
03010107	26	326,243	2,208,780	45,061,320
03010203	17	106,837	2,248,631	39,360,640
03010204	7	*	416,997	8,468,000
03010205	20	137,242	159,036	7,568,861
03020101	65	886,386	3,075,455	89,315,060
03020102	17	42,186	600,753	14,807,340
03020103	31	424,205	1,324,302	24,312,049
03020201	104	502,561	2,638,249	57,724,113
03020202	46	602,395	*	15,072,601
03020203	70	697,429	1,672,639	60,521,462
03020204	10	76,857	*	1,847,468
03020302	9	94,616	*	1,547,000
03030002	53	180,000	1,129,425	41,660,216
03030003	63	322,423	674,437	25,429,600
03030004	54	718,771	988,229	33,122,736
03030005	27	499,697	*	65,572,757
03030006	186	2,961,101	1,777,068	143,175,529
03030007	182	3,210,713	2,533,488	62,093,494
03040101	47	289,266	*	22,158,480
03040102	9	46,371	*	10,232,640
03040103	13	46,612	*	14,732,360
03040104	19	78,188	508,820	13,775,280
03040105	40	2,465,154	*	45,052,540
03040201	4	34,644	*	204,597
03040203	67	1,449,686	*	39,409,649
03040204	42	1,521,097	*	27,478,887
03040206	28	480,264	*	4,610,297
03050101	23	75,834	295,193	20,563,200
03050102	11	134,423	797,234	15,030,400
03050105	16	81,744	162,885	4,353,480
05050001	4	*	32,932	6,045,000
Other Counties4	62	770,475	19,839,384	99,039,020
STATE	**1420**	**19,543,563**	**43,774,974**	**1,094,941,408**

** disclosure - one operation is greater than 60% of total or less than 3 operations. [1] represents the unique # of operations which withdrew surface and or ground water. [2] represents the average across all 365 days of the year. [3] includes ground and surface. [4] includes non-disclosed data from the table above and all data for 03010102, 03020104, 03020105, 03020301, 03050103, 06010103, 06010105, 06010106, 06010108, 06010202, 06010203, 06020002*

2010 Central Coastal Plain Total Water Use by Month[1]

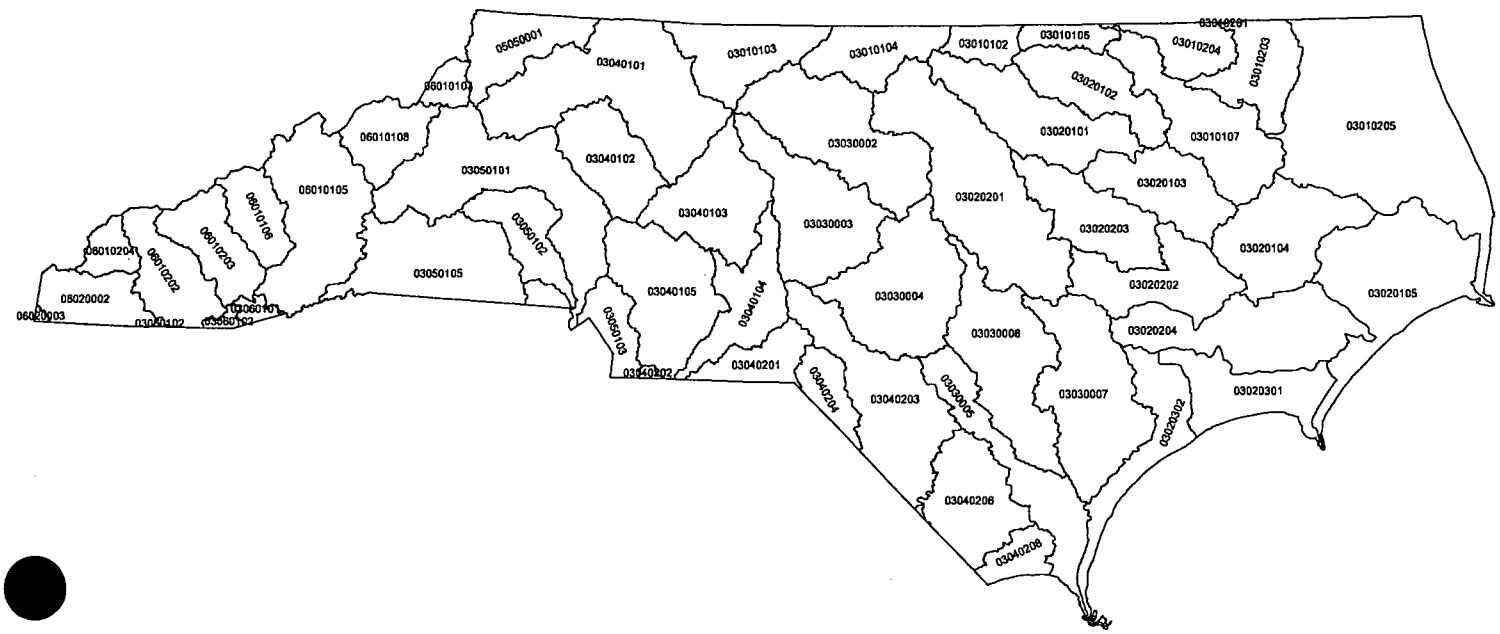
Month	# Operations	Average Across All Days-Ground	Average Across All Days-Surface	Total Max Daily-Ground	Total Max Daily-Surface
	(count)	*(gallons)*	*(gallons)*	*(gallons)*	*(gallons)*
January	239	3,537,598	294,256	3,887,137	294,256
February	251	3,533,106	344,938	3,953,919	1,015,012
March	263	3,626,941	1,100,661	5,715,174	8,573,743
April	279	4,645,105	3,033,573	8,934,876	18,864,568
May	283	5,873,241	8,955,717	11,087,206	24,728,485
June	312	8,396,879	12,327,650	15,349,735	33,568,911
July	315	8,157,323	12,938,152	14,595,624	44,655,400
August	292	5,704,553	7,575,963	10,642,046	19,536,103
September	269	4,505,271	4,051,830	6,868,854	8,415,543
October	256	4,068,977	1,538,254	4,825,419	2,834,434
November	245	3,501,994	869,069	3,929,687	1,383,762
December	238	3,255,490	294,256	3,634,794	294,256
Annual Average		**4,900,540**	**4,443,693**		

Operations:
335 Total Operations

Daily Withdrawal Capacity (incl. ground & surface):
156,697,219 (gallons)

[1] *Users of 10,000 gallons or more per day. Averages reported in this table reflect the average water withdrawn across all days of the month. Does not include farms that have reported their withdrawals directly to DENR by July 1, 2011. The number of operations represents operations that withdrew water at any time during the year.*

Hydrologic Unit Codes (HUC)



Statistical Defensibility:

The North Carolina Department of Agriculture and Consumer Services' Agricultural Statistics Division conducted a census of all known farm operations in North Carolina which had farming types that could potentially use more than 10,000 gallons in one day. More than 3600 such operations were contacted and included farms with a history of withdrawing more than 10,000 gallons on any one day. Also included were operations with large numbers of poultry, hogs, cattle, aquaculture, fruits, vegetables, nursery/ greenhouse crops, tobacco, or other field crops which are often irrigated. A 92% response rate was attained via mail, phone, or electronically via the web or email. Historical data for all respondents was reviewed to insure comparability with previous surveys. Operations were offered work sheets which assisted them, if necessary, in reporting their withdrawals.

The Census of Agriculture List, the most comprehensive source of farms, was used as the basis for this survey. Although no under-coverage estimator has been applied, the list of NC farmers is expanded on a daily basis as new operations are discovered through routine list building activities. Since agricultural operations that withdraw at least 10,000 gallons of water per day tend to be larger, more intensive farms, under-coverage for this survey is minimal based on historic surveys with similar operations.

Taking the above steps, including conducting a census of all known farm operations that use 10,000 gallons of water on any one day, results in zero sampling error around the estimates and minimal non-sampling and coverage error. Prior to the 2008 NC Agricultural Water Use Survey, there was no official statistically defensible data set to represent agricultural water use in North Carolina.

REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION ON THE NORTH CAROLINA UNDERGROUND STORAGE TANK PROGRAM

November 9, 2011

UST Program Influences

***Federal Law** – In 1984, Congress amended the Resource Conservation and Recovery Act to create a regulatory program for both new and existing petroleum underground storage tanks (USTs).

***Federal Rules** – The first federal rules were adopted by EPA in 1988. The rules set standards for UST systems and also required that commercial UST owners show that they had financial resources (through an insurance policy, for example) to cover the costs of addressing a leak from the system.

***State UST Trust Funds** – Like a number of other states, North Carolina stepped in to help commercial UST Owners meet the federal financial responsibility requirements by creating the Commercial UST Trust Fund in 1988. Instead of buying private insurance, commercial UST owners meet the federal financial responsibility requirement by participating in the state Commercial Fund which pays most of the cost of assessing and cleaning up leaks from UST systems. (The tank owner generally pays a $20,000 deductible.) The Commercial Fund currently receives approximately 60 % of its revenue from motor fuel and kerosene tax and approximately 40% from owners and operators annual operating fees. North Carolina also created a Noncommercial UST Trust Fund that pays the full cost of assessing and cleaning up petroleum releases from smaller tanks (such as home heating oil tanks). Those tank owners do not pay fees or deductibles.

***Environmental and Public Health Impacts** -- In FY 2011 the program provided alternative water supplies to replace 126 contaminated water supply wells. Since the program's inception 17,731 releases from UST systems have been cleaned up. Another 6,257 petroleum releases from regulated UST systems and 1,516 releases from unregulated systems (such as home heating oil tanks) remain to be cleaned up. Approximately 725 new releases were reported last year.

Implementation of Session Law 2011-394 (H 119)

*Tank owner/operators are now eligible for reimbursement for actions ordered by the Department to determine if a tank system has leaked, whether or not a release has occurred from the system: Implemented July 1, 2011

*Simplifies the deductible for Tank owner/operators who have a release that has become mixed with a separate release for which the owner/operator is not responsible: Implemented retroactively to January 1, 2009

*Directs the Environmental Management Commission to adopt rules setting financial hardship criteria that would make the owner/operator eligible for additional assistance in meeting assessment and cleanup obligations. The Department may use up to $1,000,000 from the Commercial Fund and $100,000 from the Noncommercial Fund annually for assistance: The Department has begun drafting rules; the rulemaking process will likely take at least 6-8 months.

*A tank owner who owns more than one tank may request that tank fees owed to the state be paid quarterly instead of annually: Implemented July 1, 2011

*Underground storage tanks may be replaced and provided secondary containment without having to provide replacement and secondary containment on other non-tank components of the underground storage tank system. In addition, non-tank metallic components that are unprotected from corrosion may have corrosion protection added as an alternative to replacement if the component does not have visible corrosion and passes a tightness test: Implemented July 1, 2011

*Clarifies that the distance between a petroleum release and a water supply well should not increase the risk ranking of a UST site if the release is unlikely to affect the well because of groundwater flow direction: This is a clarification of a rule already in place and already being implemented

*Extends the deadline for upgrading existing UST systems that cannot meet required setbacks (such as a setback from a public water supply well) from January 1, 2016 to January 1, 2020: Implemented on July 1, 2011

*Directs the EMC to create a process for granting variances from the secondary containment upgrade requirement by January 1, 2014. The variance process should allow for a lesser setback based on a finding that it will not endanger public health and welfare or groundwater: The Department has begun drafting rules; the rulemaking process will take an estimated 6-8 months.

*Notwithstanding EMC rules, DENR shall not prohibit the use of tanks that are constructed of steel and cathodically protected as provided in federal rules in order to meet the external corrosion protection standards: Implemented July 1, 2011

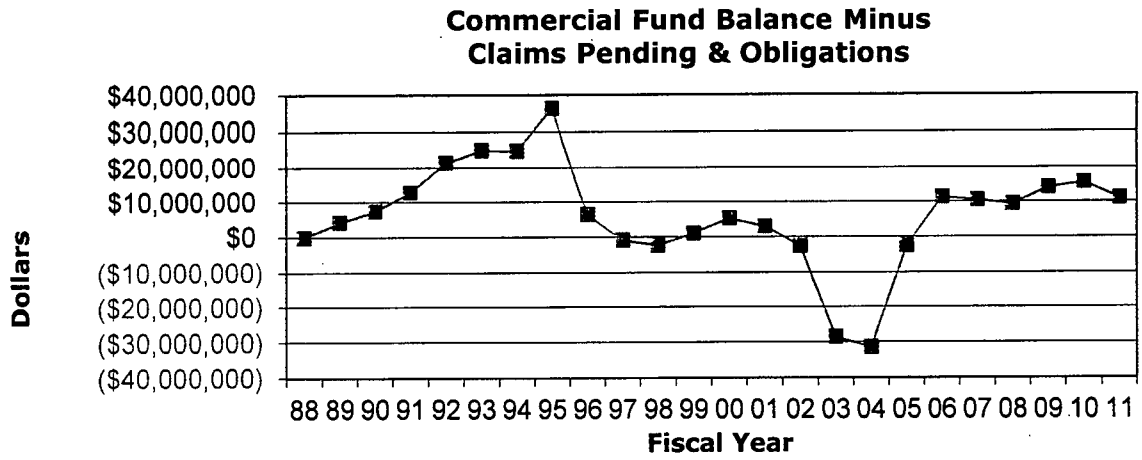
The Commercial Cleanup Fund

For FY 2011

Starting balance	$63,445,967
Receipts	26,951,504
Disbursements for cleanups and third-party claims	31,697,736
Legislatively set program costs & other costs	3,859,161
Present unpaid obligations	43,926,271
Balance	$10,914,303

Sources of revenue for the Commercial Fund in FY 2011

Motor Fuel & Gasoline Excise Tax	$ 15,423,613
Operating Fees	10,680,351
Motor Fuel & Kerosene Inspection Tax	0
Cost Recovery & Interest	847,540
Total	$ 26,951,504

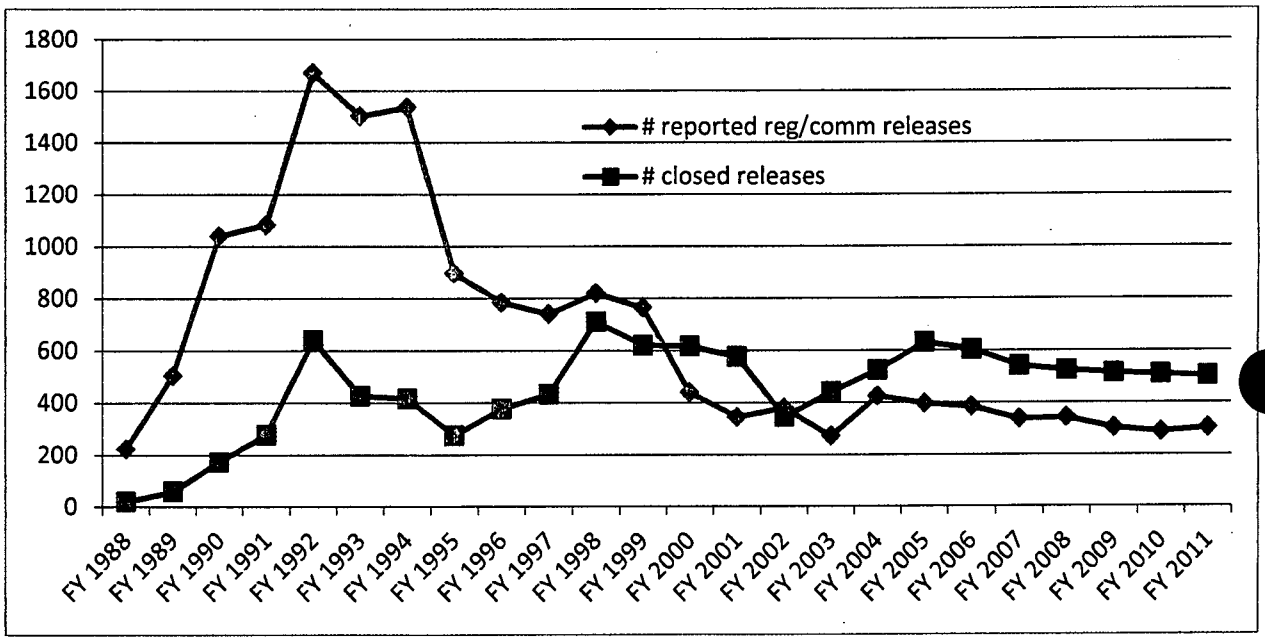


The Future of the Commercial Cleanup Fund

Session Law 2004-124 prohibited the Department from ordering cleanup of a UST petroleum release unless the Commercial UST Trust Fund could reimburse the tank owner for those expenses within 90 days. (The law responded to a cash flow problem in the UST Commercial Trust Fund that had led to long delays in providing reimbursement.) Although Session Law 2004-124 enabled the department to maintain a positive cash balance in the Commercial Cleanup Fund during the past five years, the long-term fiscal condition of the Fund remains uncertain because of the backlog of known releases waiting to be cleaned up and the addition of new releases every year that will need cleanup. The department can estimate the costs of cleaning up all known commercial UST releases by multiplying the average cost to the Fund per release ($82,000) by the

number of known commercial releases needing cleanup (6,257) for a total future obligation of about $513 million, an amount that includes about $44 million obligated for cleanups already underway. With a present balance of about $55 million, the Fund will need an additional $458 million to clean up all presently known commercial UST releases. At the present rate revenue comes into the Fund ($28 million per year on average), it will take 17 years to generate the cash to pay for this obligation. This estimate does not account for the costs of cleaning up releases not yet reported (future releases). Since approximately 300 new commercial UST releases are discovered and reported each year, an additional $25 million per year can be added to the total obligation.

Regulated UST Releases Reported Versus Closed by Fiscal Year



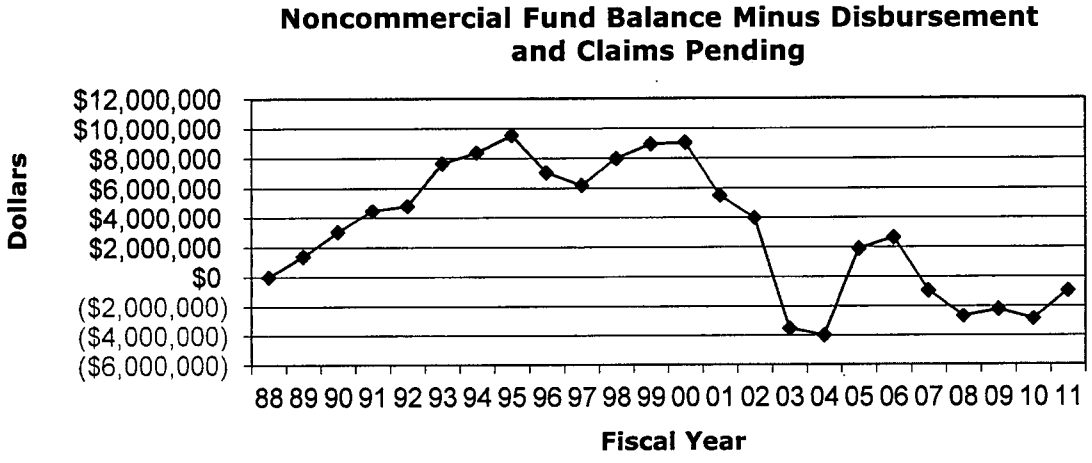
The Non-Commercial Cleanup Fund

For FY 2011

Starting balance	$3,233,230
Receipts	6,388,636
Disbursement for cleanups and third-party claims	5,922,935
Legislatively set program costs & other costs	1,518,243
Present unpaid obligations	3,163,402
Balance	$ (982,714)

Sources of revenue for the Noncommercial Fund in FY 2011

Motor Fuel & Gasoline Excise Tax	$ 2,436,811
Motor Fuel & Kerosene Inspection Tax	3,946,303
Cost Recovery & Interest	5,522
Total	$ 6,388,636



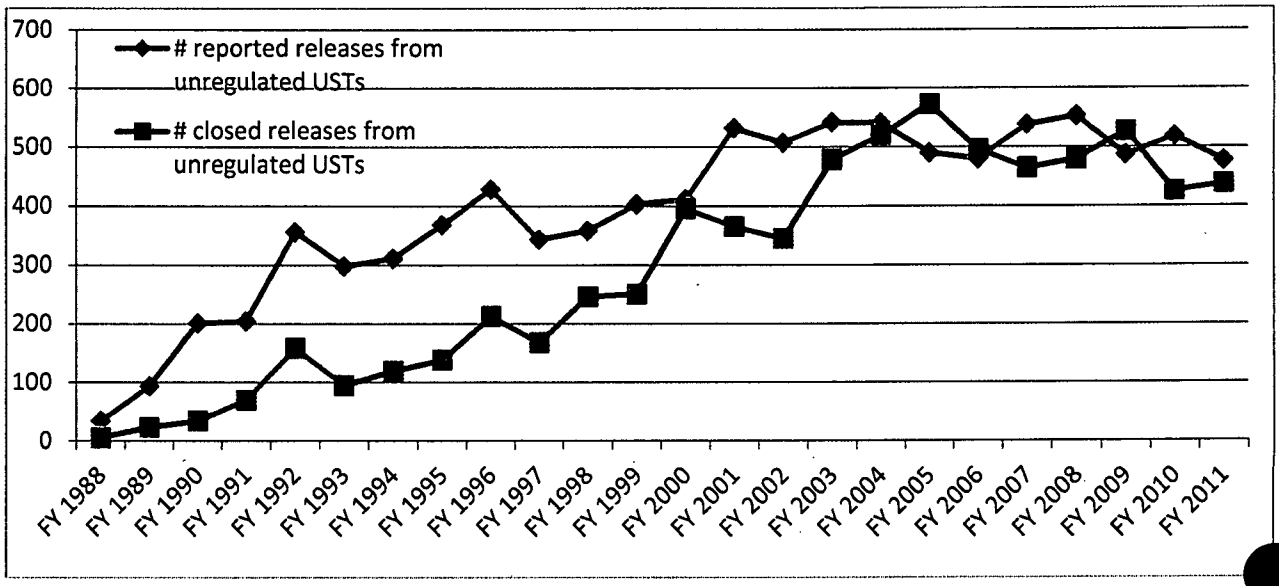
The future of the Noncommercial Cleanup Fund

Compared to the previous fiscal year, both claims against and reimbursements from the Noncommercial Fund have increased. This trend is most likely the result of increased environmental awareness on the part of buyers and lenders during sales of residential properties, where most unregulated tanks (heating oil USTs) are located. Many of the releases from unregulated USTs are discovered during property transfers. The department expects this trend to continue. In addition, the allocation of a portion of the motor fuels inspection tax into the Noncommercial Fund ended in July 2011. That allocation provided about 62 % of the Funds revenue. The increase in claims against the Fund and the decrease in revenues into the Fund will eventually cause a stoppage of directed cleanups of releases from home heating oil tanks, increasing the backlog of known releases needing cleanups, and lengthen the times homeowners must wait for reimbursements of the costs of initial response and abatement activities.

The department can estimate the costs of cleaning up all known noncommercial UST releases by multiplying the average cost to the Fund per release ($12,804) by the number of known noncommercial releases needing cleanup (1,516) for a total future obligation of about $19.4 million, an amount that includes about $2.9 million obligated for cleanups already underway. With a present balance of about $171,600, the Fund will need an additional $19.2 million to clean up all presently known noncommercial UST releases. At the present rate revenue comes into the Fund (down from $6.4 million per year to $2.5 million per year on average after the end of the inspection tax allocation), it will take

about 7.5 years to generate the cash to pay for this obligation. This estimate does not account for the costs of cleaning up releases not yet reported (future releases). Since approximately 425 new noncommercial UST releases are discovered and reported each year, an additional $5.4 million per year can be added to the total obligation.

Unregulated UST Releases Reported Versus Closed by Fiscal Year



The Universe of Underground Storage Tanks (as of 30 June 2011)

*In North Carolina, there are 26,916 regulated USTs at 8,387 facilities. Owners of these Tanks are eligible for reimbursements from the Commercial Cleanup Fund.

*Approximately one out of every four regulated USTs in NC is more than 29 years old.

*Approximately 6% of the regulated USTs are double walled.

*There are also 2,152 unregulated commercial heating oil USTs at 1,618 facilities in North Carolina. Owners of these tanks are eligible for reimbursements from the Commercial Fund.

*There are an estimated 250,000 home heating oil tanks in the state. Owners of these tanks are eligible for reimbursements from the Noncommercial Cleanup Fund.

*The number of regulated USTs and UST facilities continues to decline.

The UST Program's Compliance Progress

*The UST program has 20 inspectors to assure compliance at 8,387 UST facilities, or an average of 419 facilities per inspector.

*The federal Energy Policy Act of 2005 requires a compliance inspection of each facility at least once every three years and training/testing for UST operators. Compliance rate is now about 62%.

The UST Program's Corrective Action Progress (as of 30 June 2011)

*Since the program's inception, there have been 25,504 incidents of leaking tank systems reported.

*Of those reported, 17,731 of these incidents have been cleaned up. There remain 6,257 releases from regulated USTs and 1,516 releases from unregulated USTs to clean up.

*During the last five years, on average, about 751 new releases were reported each year. The majority of these new releases (about 60%) were from home heating oil tanks.

*In addition, there have been 6,955 tank systems closed without evidence of petroleum releases (clean closures).

*The UST program is currently closing out slightly more releases than have been reported annually, decreasing the backlog of open releases.

Pay For Performance (PFP)

On October 15, 2001, House Bill 1063 gave DENR the authority to allow performance-based cleanups of UST releases whose owners volunteered for the program. Implementation was slow because sufficient unobligated funds were not available and because the program was voluntary. HB 897 corrected the funding issue but volunteers for the pilot were still not forthcoming. Eventually, two releases were cleaned up using the PFP concept and the data show some cost savings. However, no other UST owners have volunteered to use the PFP concept for their cleanup. HB 2498 (Session Law 2008-195) set an expiration date for the program and it expired on October 1, 2011.

Recommendations

*Transition from (and ultimately terminate) the Commercial UST Trust Fund. In place of a state-subsidized fund, owners and operators of regulated, commercial USTs should use other financial responsibility mechanisms (such as private insurance, bonding, letters of credit, or self-insurance). This action will initially reduce and ultimately end the use of public funds to clean up most new releases. A state fund will continue to be needed to clean up the legacy of existing petroleum releases; to clean up new releases from UST systems owned or operated by parties

that lack financial resources; and to cleanup sites where a responsible party cannot be identified. Transitioning to other approved financial responsibility mechanisms will also help to reduce the number and severity of releases by giving tank owners and operators additional economic incentives to prevent releases and clean up releases before contamination reaches the state's soil and groundwater.

*Identify additional funding sources for the Noncommercial Leaking Underground Storage Tank Cleanup Fund such as establishing a deductible amount applicable to all noncommercial tank owners or landowners accessing the fund. Session Law 2011-145 Section 28.25A(b) amended G.S. 119-18(b) by eliminating the allocation of a portion of the inspection tax to the Leaking Underground Storage Tank Cleanup Funds. Before the recent amendment, this allocation supplied approximately 60% funds available to reimburse homeowners and land owners for the costs of cleaning up contamination from home heating USTs. The Noncommercial Fund already had a negative unobligated balance of approximately $1 million as of July 1, 2011. Without this allocation, DENR projects that no funds will remain available for reimbursement to homeowners or landowners by the end of calendar year 2011 for remediation beyond initial abatement.

*Consideration should be given to changing the UST annual report due date. Generally, budget information only becomes available in mid-August (after budget year close-out) which makes it difficult to collect budget information and complete the report by the current due date of September 1.

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
December 14, 2011

The Environmental Review Commission (ERC or Commission) met on Wednesday, December 14, 2011 at 8:30 a.m. in Room 544 of the Legislative Office Building. Senator Rouzer presided.

The following members were present: Senator David Rouzer, Co-Chair, Representative Mitch Gillespie, Co-Chair, Representative Ruth Samuelson, Co-Chair, Senator Stan Bingham, Senator Don East, Senator Fletcher Hartsell, Senator Brent Jackson, Senator Bill Rabon, Senator Michael Walters, Representative William Brisson, Representative Joe Hackney, Representative Chuck McGrady and Representative Roger West. Mr. Jeff Hudson, Ms. Jennifer McGinnis and Susan Iddings, Commission Counsels; Ms. Jennifer Mundt and Ms. Mariah Matheson, Research Assistants; Ms. Sarah Neunzig, Commission Clerk, Sergeants-at-Arms Jim Blackburn, John Brandon, Larry Elliot, John Fitchett and Martha Gaddison also attended. Attachments #1 and #2.

On December 7, 2011, notice was sent to members and interested parties via e-mail. An additional reminder e-mail was sent on December 13, 2011. A copy of the notice is included in the attachments to these minutes as Attachments #3 and #4. Copies of the agenda for the meeting, visitor registration sheets and memorandum regarding the disposition of reports are included in the attachments to these minutes as Attachments #5, #6 and #7 respectively.

Call to order and introductory remarks

Senator Rouzer called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized his Co-Chairs, Representative Gillespie and Representative Samuelson, for introductory remarks. Senator Rouzer recognized Mr. Jeff Hudson, Commission Counsel, to provide an overview of the meeting agenda. Mr. Hudson explained that the agenda consisted of (i) housekeeping matters encompassing the approval of previous meeting minutes and Commission budget, (ii) presentations on the North Carolina Parks and Conservation Matters, (iii) presentations from the Department of Environment and Natural Resources (DENR) on vegetative buffers for the protection of water quality and the use of ecological flow in hydrologic modeling and (iv) the tentative schedule for 2012 meetings of the Commission.

Approval of the minutes for the October 12, 2011 meeting of the Commission

Representative McGrady offered a motion to approve the minutes, Senator Walters seconded the motion. The Commission as a whole approved the October 12, 2011 minutes; Attachment #7.

Adoption of the Commission budget

Representative McGrady offered a motion to approve the Commission budget, Representative Samuelson seconded the motion. The Commission as a whole approved the Commission's budget; Attachment #8.

Presentations on Parks and Conservation Matters

Parks and Recreation Trust Fund

Senator Rouzer recognized Mr. Lewis Ledford, Director of the Division of Parks and Recreation of DENR to present the annual report on the Parks and Recreation Trust Fund. A copy of the presentation is included in the attachments to these minutes as Attachment #9, the annual report for 2010-2011 as Attachment #10 and the 2011 annual report as Attachment #11.

Representative Samuelson asked about the four dollar per capita funding that puts North Carolina at 45th in the United States for funding its State Park System. She asked Mr. Ledford for a comparison on a national stage regarding state park systems, and asked if there was anything the State needed to do to acquire a higher ranking regarding funding. Mr. Ledford responded, North Carolina's main strength in the State Park System is the local projects for small communities, which the Trust Fund enables. Other states such as Alabama and West Virginia have a more resort-type atmosphere IN their state parks. It is very expensive to attain a resort atmosphere by doing such things as building lodges on site, and thereby increases these states per capita funding rankings compared to North Carolina. North Carolina State Parks retain a natural atmosphere.

Senator Bingham asked about the COPS program and asked what is the respective interest rate payback period. Mr. Ledford responded the State Treasurer secured the rate many years ago along with university bonds, but he is unsure of the exact interest rate. He did confirm a payback period of 20 years.

Senator East asked about the maintenance of State Parks utilities. Mr. Ledford responded that the State Park System has tried to tie into the local municipalities if possible for more efficient utilities. It is an ongoing process to negotiate ways to tie certain utilities to the town, such as water and sewer systems.

Commission was then shown a video about the State Park System.

North Carolina Natural Heritage Trust Fund

Senator Rouzer recognized Ms. Lisa Riegel, Executive Director of the North Carolina Natural Heritage Trust Fund to present the annual report on awards from the North Carolina Natural Heritage Trust Fund. A copy of the presentation is included in the attachments to these minutes as Attachment #12 and #13.

Senator East asked how she arrived at the estimate that the income of the Trust Fund for the current year will equal the income for next year with the continued decline in the real estate market and the income that comes from the real estate transfer tax. Ms. Riegel referenced a graph trend that is tracking on target, this resulted in her forecasting the value of $8 million for next year.

Senator East then asked fiscal staff what percent of the real estate transfer tax is allocated to the Trust Fund. Lanier McGree from the Fiscal Research Division responded that she does not know the amount of the real estate conveyance tax, but the State portion of the tax breakdown is 75% to the Parks and Recreation Trust Fund and 25% to the Natural Heritage Trust Fund. The State gets approximately 50% of the real estate conveyance tax. She will follow up with the Commission for the exact amount the State gets and the exact real estate conveyance tax.

Representative Samuelson asked Katy Thomas from the NC Association of Realtors to respond. She answered that the real estate transfer tax is $2 per every $1,000 in a real estate transaction. Fifty percent of that goes to the counties and the other 50% goes to the two trust funds, which are split 75% for the Parks and Recreation Trust Fund and 25% for the Natural Heritage Trust Fund.

Senator Bingham asked if the public can visit the Arnett Branch Long Leaf Pine Forest. Ms. Riegel assured him that the public can visit and it will be managed through the NC Zoo.

Senator Bingham also asked about federal grants, aside from those from the US military, and wanted to know what conditions were tied to those grants. Ms. Riegel responded in most areas federal grants are focused on preserving the natural habitat and the grant funds are used for purposes similar to those of the Parks and Recreation Trust Fund.

Senator Bingham asked if there is a close relationship between the Boards of the two Trust Funds. Ms. Riegel assured him that there is a very close relationship and lots of regular communication; over the past few years this has proven very successful.

Senator Rouzer asked how many projects are funded through COPS dollars. Ms. Riegel responded that she knows the dollar amount but she doesn't know the number of projects. She will report back to him with that answer. He then asked if there were any projects where dollars were allocated yet the project was not finished. She responded that one project did fall though, and the funds need to be reallocated. Senator Rouzer asked about the process for reallocation. She responded that there will be a meeting to evaluate other projects and then reallocate funds in the standard manner by allowing all applicants the chance to submit projects and apply for the Trust Funds.

Clean Water Management Trust Fund

Senator Rouzer recognized Mr. Richard Rogers, Jr., Executive Director of the Clean Water Management Trust Fund. He presented the annual report on the implementation of the Clean Water Management Trust Fund. A copy of the presentation is included in the attachments to these minutes as Attachment #14, the 2011 annual report as Attachment #15, and a list of projects not funded in the 2011 awards cycle as Attachment #16.

Representative Samuelson asked about the number of applications in 2011 and how applications for that number compares to past years. Mr. Rogers responded that two years ago there was a high: $249 million applications. In 2011 there were applications for more than $157 million. The numbers are down from two years ago as a reflection to the reduction of funding to the Clean Water Management Trust Fund. The distribution of awards remains about the same: 5% of the land acquisition and 5% for infrastructure. The demographics of the types of applications are the same.

Representative Samuelson asked about the matching portion and who is matching the dollars. Mr. Rogers answered that the majority of the matching funds comes from the federal state revolving funds. Typically loan funds are paid off over the next 20-30 years with their fees.

Senator Rabon asked if he could see in one document all the land and the two trust funds own in order to determine whether the trust funds can be consolidated. Mr. Rogers said that can be done and provided to his office.

Senator Bingham asked if cities come to you to get assistance when filling out applications. Mr. Rogers responded, the large municipalities have staff to assist, and smaller municipalities usually hire someone to help. His staff is required by the Trustees to help applicants fill out the document in an effort for applicants to receive the help they might need.

North Carolina Development and Farmland Preservation Trust Fund Committee

Senator Rouzer recognized Mr. Dewitt Hardee, Environmental Program Manager for the Department of Agriculture and Consumer Services. A copy of the presentation is included in the attachments to these minutes as Attachment #17 and the 2010-2011 annual report as Attachment #18.

Senator East asked staff to compare what amount of monies were returned to the General Fund for the State budget from the Agricultural Development and Farmland Preservation Trust Fund (ADFPTS) versus others in the State. Mr. Dewitt responded that the ADFPTS was appropriated $2 million for the 2010-2011 fiscal year. That same year, $2,173,989 was returned at the request of the Office of State Budget and Management to help balance the budget. Fiscal Research Staff Lanier McGee responded that the Clean Water Management Trust Fund returned over $100 million and the Natural Heritage Trust Fund and the Parks and Recreation Trust Fund were also used by the legislature to balance the budget in the amount of $8 million each. She will report a complete history of those budget reversions to the Commission.

Update on Land for Tomorrow

Senator Rouzer recognized Mr. Tom Cors, Director of Government Relations for The Nature Conservancy, North Carolina Chapter. A copy of the presentation, and update on Land for Tomorrow, is included in the attachments to these minutes as Attachment #19. Land for Tomorrow is a partnership of citizens, businesses, and interest groups that support and promote the four conservation trust funds reported here today.

Representative Samuelson asked if there is redundancy among these four trust funds and how the trust funds work together. Mr. Cors answered, the different agencies complement each other because each trust fund addresses different issues within conservation to specifically address a direct constituency.

Presentation on the use of vegetative buffers for the protection of water quality

Senator Rouzer recognized Ms. Coleen Sullins, Director of the Division of Water Quality in DENR. A copy of the presentation is included in the attachments to these minutes as Attachment #20.

Senator Rouzer asked if soil type makes a difference in buffers; clay versus sandy soil. Ms. Sullins does not know that but can get an answer later.

Representative Samuelson asked if these studies looked at the different types of plants in the buffers such as grasses versus trees. Ms. Sullins responded the studies did look into differing plant types and found that trees are important in de-nitrifying the water as it moves through the soil. Trees have a deeper root base than grasses and the studies specifically looked at that and found a much higher activity level in the buffers with trees than grasses.

Representative McGrady asked how protecting existing buffers compare with other pollution control strategies in terms of cost effectiveness and effectiveness in protecting water quality. Ms. Sullins responded that existing buffers are the least expensive approaches; if removed, you must build structures to treat the stormwater run-off and then maintain those structures over their lifetime, which would prove to be more expensive.

Representative McGrady asked how buffers can add or detract from land values. Ms. Sullins responded that she is not aware of any research that has been done in North Carolina, but she will ask her staff to look into that as there have been academic studies done in other states. He then asked if there has been any negative impact on property values found in these reports. She answered that data shows good water quality has a significant positive effect on property value, but no information has been found regarding the buffers hindering property value. In general, good water quality improves land values.

Representative Samuelson asked about the 1995/1996 incident regarding fish kills and algal blooms due to excessive nitrogen in The Neuse River and if anything was special to those years to cause it. Ms. Sullins responded that the system is affected by wet and dry weather. In 1995 there was a dry spring season followed by a very wet June, which caused lots of nutrients to be flushed into the system. Her staff is continuing to look into that issue to learn more, but there is a linkage between wet weather and nutrients being washed into the water system.

Presentation on the use of ecological flow in hydrologic modeling

Senator Rouzer recognized Mr. Thomas Reeder, Director of the Division of Water Resources in DENR. A copy of the presentation is included in the attachments to these minutes as Attachment #21.

Representative Samuelson asked what role, if any, do prior things that were done to waterways effect ecological flow in the present. Mr. Reeder stated that whatever is in place now will stay and they will work with it. Representative Samuelson then asked about invasive species and if they will try to preserve those as well. Mr. Reeder mentioned that when they spray invasive species to remove them, they only spray the plants that are not native to North Carolina.

Representative Samuelson asked Mr. Reeder to explain 7Q10 and what it means. Mr. Reeder explained it is a hydrologic standard that applies when dealing with wastewater discharge permits. 7Q10 is the low flow one can expect for 7-10 days once every ten years. It is a very low flow that is not suited for the long term survival of rivers.

Senator Rabon asked about inter-basin transfers and the rules used to treat these in the various counties and what suggestions Mr. Reeder can offer. Mr. Reeder responded that this program is created by the General Assembly because it is for North Carolina only, not federally mandated. He believes NC has the most stringent program in the country.

Commission discussion and announcements

Senator Hartsell informed the Commission that he had submitted a letter to Attorney General Roy Cooper seeking an Attorney General opinion concerning the ownership of the submerged bed of the Yadkin River at the site of the Yadkin Hydroelectric Project. He stated today, he has not received a response from the Attorney General and would like to submit the motion to intervene submitted by the Attorney General on behalf of DENR in the Yadkin Hydroelectric Project reauthorization. The basis for intervention stated in the motion is that the State retains title to navigable waters under the public trust doctrine and that the navigable waters themselves are a public resource. This is important to determine who has control of the surface waters and the ecological flows of a river basin. The motion is included in the minutes as Attachment #22.

Senator Rouzer thanked the members and staff, and announced the next meetings to be held would be Thursday, January 26, 2012, at 9:00 a.m. in room 643 LOB. The dates and times are subject to change and notice will be given if they change.

Adjournment

The meeting was adjourned at 11:35 am.

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Attest:

Sarah Neunzig, Committee Clerk

ATTENDANCE

Environmental Review Commission

DATES	Dec. 14th	payshet													
Sen. David Rouzer (Chair)	✓														
Rep. Mitch Gillespie (Co-Chair)	✓	X													
Rep. Ruth Samuelson (Co-Chair)	✓	X													
Sen. Stan Bingham	✓	X													
Sen. Dan Clodfelter															
Sen. Don East	✓	X													
Sen. Fletcher Hartsell	✓	X													
Sen. Brent Jackson	✓	X													
Sen. Bill Rabon	✓	X													
Sen. Michael Walters	✓	X													
Rep. William Brisson	✓	X													
Rep. Joe Hackney	✓	X													
Rep. Carolyn Justice															
Rep. Pat McElraft															
Rep. Chuck McGrady	✓	X													
Rep. Roger West	✓	X													
Staff:															
Jeff Hudson	✓														
Susan Iddings															
Jennifer McGinnis	✓														
Jennifer Mundt	✓														
Mariah Matheson	✓														

Committee Sergeants at Arms

NAME OF COMMITTEE ENVIRONMENTAL REVIEW COMM.

DATE: 12-14-11 **Room:** 544

House Sgt-At Arms:

1. **Name:** LARRY ELLIOTT
2. **Name:** JOHN BRANDON
3. **Name:** MARTHA GADISON
4. **Name:** _____
5. **Name:** _____

Senate Sgt-At Arms:

1. **Name:** Jon Fitchett
2. **Name:** DEDRICK ANDERS
3. **Name:** _____
4. **Name:** _____
5. **Name:** _____

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
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COMMISSION COUNSEL

JENNIFER L. McGINNIS
COMMISSION COUNSEL

JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

December 7, 2011

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Sarah Neunzig, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at **8:30 a.m.** on Wednesday, December 14, 2011, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. ***(Please note the earlier starting time.)*** The agenda for the meeting is expected to include presentations on the State Parks System and State land conservation efforts, water quality buffers, and the use of ecological flow in hydrologic modeling. Please note this agenda is tentative and subject to change.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Sarah Neunzig, Commission Clerk, at (919) 733-5748.

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
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JENNIFER R. F. MUNDT
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MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

December 13, 2011

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Sarah Neunzig, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at **8:30 a.m.** on Wednesday, December 14, 2011, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. ***(Please note the earlier starting time.)*** The agenda for the meeting is expected to include presentations on the State Parks System and State land conservation efforts, water quality buffers, and the use of ecological flow in hydrologic modeling. Please note this agenda is tentative and subject to change.

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State Legislative Building
Raleigh, North Carolina

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REPRESENTATIVE RUTH SAMUELSON

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JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

8:30 a.m. Wednesday, December 14, 2011
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Senator David Rouzer, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Approval of the minutes for the October 12, 2011 meeting of the Commission

5. Adoption of the Commission budget

6. Parks and Conservation Matters *(1 hour 30 minutes)*

   a. Annual report on the Parks and Recreation Trust Fund, Fiscal Year 2010-2011 (G.S. 113-44.15(c)) *(30 minutes)*
      Lewis R. Ledford, Director
      Division of Parks and Recreation
      Department of Environment and Natural Resources (DENR)

   b. Annual report on awards from the North Carolina Natural Heritage Trust Fund, Fiscal Year 2010-2011 (G.S. 113-77.9(e)) *(15 minutes)*
      Lisa D. Riegel, Executive Director
      North Carolina Natural Heritage Trust Fund, DENR

c. Annual report on the implementation of the Clean Water Management Trust Fund (G.S. 113A-257) *(20 minutes)*
Richard E. Rogers, Jr., Executive Director
Clean Water Management Trust Fund

d. Annual report on the activities of the North Carolina Development and Farmland Preservation Trust Fund Committee (G.S. 106-744(i)) *(15 minutes)*
D. Dewitt Hardee, Environmental Program Manager
Department of Agriculture and Consumer Services

e. Update on Land for Tomorrow *(10 minutes)*
Tom Cors, Director of Government Relations
The Nature Conservancy, North Carolina Chapter

7. Presentation on the use of vegetative buffers for the protection of water quality *(30 minutes)*
Coleen H. Sullins, Director
Division of Water Quality, DENR

8. Presentation on the use of ecological flow in hydrologic modeling *(15 minutes)*
Thomas A. Reeder, Director
Division of Water Resources, DENR

9. Commission discussion and announcements

10. Adjourn

FUTURE MEETINGS:

The Environmental Review Commission will meet as follows in the Legislative Office Building (LOB), Raleigh, North Carolina. **This schedule is tentative and subject to adjustment.** For planning purposes, however, please reserve these dates.

Thursday, January 26, 2012 at 9:00 a.m. in Room 643 LOB.
Thursday, February 23, 2012 at 9:00 a.m. in Room 643 LOB.
Thursday, March 22, 2012 at 9:00 a.m. in Room 544 LOB.
Thursday, April 26, 2012 at 9:00 a.m. in Room 544 LOB.

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

VISITOR REGISTRATION SHEET

ERC — Dec. 14, 2011

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
CHRIS DILLON	NCWRC
BRAD LOVIN	NCMHA
Cameron Hunley	Electricities of NC
Tommy Stevens	NCPC
CALVIN PECK	BALD HEAD ISLAND
John Palumbo	NCAPA
Phil CARTER	WASTE INDUSTRIES
Lindsay Quant	RSG Engineers
Dewitt Hardee	NCDA&CS ADFP Trust Fund
John Huisman	NCDENR - DWQ
Karen Higgins	NCDENR - DWQ

VISITOR REGISTRATION SHEET

ERC — Dec. 14, 2011

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Amy Chapman	DWQ
Ian McMillan	DWQ
Beth Warren	Attorney General's Office
Ray Starling	NC Dept of Ag + Consumer Services
Daniel Ambrose	NCLM
Allison Wallace	NMPS
Mac Boxley	NC Aggregates
Jack Cozort	NSS
Erin Wynia	NCLM
Mitch Peele	NCFB
GORDON MYERS	NCWRC

VISITOR REGISTRATION SHEET

ERC — Dec. 14, 2011

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Carol Tingley	DENR, Parks
Elizabeth Taylor	Kocharek Law Group
Maggie Monast	Environmental Defense Fund
Grady McLaurin	NC Conservation Network
Sam Pearsall	ENV. Defense Fund
Tom BEAN	EDF, NCWF
David Knight	DENR
Trina Ozer	DENR
Robin Smith	DENR
Coleen H. Sullins	DENR/DWQ
Kari Barsness	DENR

VISITOR REGISTRATION SHEET

ERC — Dec. 14, 2011

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
R Rogers	NCCWMTF
L Riegel	N.C NHTF
T Reeder	NC DWR
S Reed	NCDWR
D Conrad	NCCN
C Burns	The Nature Conservancy
Tom Cors	TNC
Jay Leutze	SAHC
Justin Boner	The Conservation Fund
Amy SIMES	DENR
Crystal Penton	The Wooten Company

VISITOR REGISTRATION SHEET

ERC — Dec. 14, 2011

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
John Shaw	CAP. GROUP SIERRA CLUB
Cady Thomas	NCAR
Lisa Martin	NSC HBA
Jessi Hayes	
Doug Lassiter	NCSEA
Sandy Sands	UNC
Allen Hardison	CRSWMA
Preston Howard	MCIC
Rick Techini	Progress Energy

VISITOR REGISTRATION SHEET

ERC — Dec. 14, 2011

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Scott McLendon	US Army Corps of Engineers
Pat Harris	NCDA&CS
Amy Fullbright	KL Gates

General Assembly of North Carolina

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COMMISSION CLERKS

December 14, 2011

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on November 9, 2011. All reports are available online on the Commission website: **(http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received)**. If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or mariahm@ncleg.net for assistance.

A. The following reports have been submitted by the Department of Environment and Natural Resources (DENR) and are being distributed in connection with today's agenda as follows:

a. Annual report on the Parks and Recreation Trust Fund, Fiscal Year 2010-2011. October 1, 2011. Statutory Authority: G.S. 113-44.15(c). ***Agenda Item #6a***

b. Annual report on acquisitions made from the Natural Heritage Trust Fund. October 1, 2011. Statutory Authority: G.S. 113-77.9(e), as amended by S.L. 2009-484, Sec. 14. ***Agenda Item #6b***

B. The following report has been submitted by the Clean Water Management Trust Fund and is being distributed in connection with today's agenda as follows:

Annual report on the implementation of the Clean Water Management Trust Fund. December 1, 2011. Statutory Authority: G.S. 113A-257. ***Agenda Item #6c***

C. The following report has been submitted by the Department of Agriculture and Consumer Services and is being distributed in connection with today's agenda as follows:

Annual report on the activities of the North Carolina Agricultural Development and Farmland Preservation Trust Fund Committee. October 1, 2011. Statutory Authority: G.S. 106-744(i), as amended by S.L. 2009-484, Sec. 12. ***Agenda Item #6d***

D. The following reports have been submitted by DENR and may be distributed in conjunction with a presentation at a future meeting of the Commission.

a. Annual report on fish kills in the previous year. December 1, 2011. Statutory Authority: G.S. 143B-279.7 (c).

b. Annual report on the implementation of the Ecosystem Enhancement Program and use of the Ecosystem Enhancement Fund, including inventory of property and easements. November 1, 2011. Statutory Authority: G.S. 143-214.13.

c. Annual report on the Inactive Hazardous Sites Program. October 1, 2011. Statutory Authority: G.S. 130A-310.10.

d. Revised annual report on implementation of the Resident Inspectors Program at commercial hazardous waste facilities. October 1, 2011. Statutory Authority: G.S. 130A-295.02(m).

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
October 12, 2011

The Environmental Review Commission (ERC or Commission) met on Wednesday, October 12, 2011 at 9:00 a.m. in Room 544 of the Legislative Office Building. Senator Rouzer presided.

The following members were present: Senator David Rouzer, Co-Chair, Representative Mitch Gillespie, Co-Chair, Representative Ruth Samuelson, Co-Chair, Senator Stan Bingham, Senator Don East, Senator Fletcher Hartsell, Senator Brent Jackson, Representative William Brisson, Representative Carolyn Justice, and Representative Chuck McGrady. Mr. Jeff Hudson and Ms. Jennifer McGinnis, Commission Counsels; Ms. Mariah Matheson, Research Assistant; Ms. Sarah Neunzig, Commission Clerk, Sergeants-at-Arms Dedrick Anders, Ernie Sherrell, Martha Gadison, Martha Parrish, and Bill Bass. Attachments #1 and #2.

On October 5, 2011, notice was sent to members and interested parties via e-mail. A copy of the notice is included in the attachments to these minutes as Attachment #3. Copies of the agenda for the meeting and visitor registration sheets are included in the attachments to these minutes as Attachment #4 and Attachment #5, respectively.

Call to order and introductory remarks

Senator Rouzer called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized his Co-Chairs, Representative Gillespie and Representative Samuelson, for introductory remarks. Senator Rouzer recognized Mr. Jeff Hudson, Commission Counsel, to provide an overview of the meeting agenda. Mr. Hudson explained that the agenda consisted of (i) a continuation of the discussion of the State Air Toxics Program (State Program) from the September 28, 2011 meeting, including follow-up information from the Department of Environment and Natural Resources (DENR), a presentation on the science and health benefits of the State Program, and, at Representative Gillespie's request, comments from the regulated community regarding the impacts of the State Program on them; (ii) an update from DENR on the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State; and (iii) a report from the Chair of the Environmental Management Commission (EMC) on the EMC's activities for the last year.

Follow-up and discussion of the State Air Toxics Program

Response to request for additional information on the State Air Toxics Program

Senator Rouzer recognized Ms. Sheila C. Holman, Director, Division of Air Quality (DAQ), DENR and Robin Smith, Assistant Secretary for Environment, DENR, to provide a follow-up report on the State Air Toxics Program. Ms. Smith provided a basic overview of the State Program and explained the differences between the State and federal programs. A copy of the presentation is included in the attachments to these minutes as Attachment #6.

Representative Samuelson asked if there were multiple sources at a facility would emissions from sources covered by the federal program be included in calculating emissions from the entire facility. Ms. Smith responded that they would. Under the State Program, emissions from sources covered by the federal program are still considered when determining if emissions from the facility as a whole meet the State's health-based air toxics standards.

Senator Bingham asked about the measurement of the levels of air toxics emitted from a facility. Ms. Smith explained that under the State Program levels of air toxics are measured at the property line of a facility in order to determine what levels of air toxics could be affecting nearby people and businesses. Senator Bingham asked why there are 21 air toxics that are included in the State Program that are not included in the federal program. Ms. Smith explained that the federal program covers air toxics that present problems at the national level. Some air toxics that aren't a problem at the national level can be problematic at the State level. An example of an air toxic that is problematic at the State but not national level and that is included by the State Program but not the federal program is ammonia. Such air toxics make up the 21 air toxics that are covered by the State Program but not the federal program.

Ms. Holman and Ms. Smith then provided information in response to questions that were asked about the State Program at the September 28, 2011 meeting. This information is included as Attachment #7.

Senator East asked about how agricultural dust is treated under the State Program. Ms. Smith explained that generally, agricultural activities are exempted from the State Program and the federal program. This would not be true if an agricultural operation had some type of industrial type source of emissions such as a combustion source. This type of source could potentially be covered by the State Program and federal program. Senator East asked about air quality monitors near agricultural facilities. Ms. Smith explained that these monitors are not monitoring for toxic air pollutants.

Senator Rouzer asked how many monitors there are in the State. Ms. Holman answered that there are approximately 65 monitoring stations. Senator Rouzer asked about how their location is determined. Ms. Holman explained that the location is based on guidance from the United States Environmental Protection Agency (EPA). Senator Rouzer asked if the monitors are located on both public and private property. Ms. Holman responded that the monitors tend to be located on public property, such as a school or county or city property.

Representative Justice asked about emissions from a facility with sources that aren't subject to the federal program. Ms. Smith responded that such facilities could be subject to the State Program and could be subject to modeling requirements to determine if the levels of air toxics at the property boundary exceed the State's health-based standards. Representative Justice asked how DENR responds to the assertion that the State Program is duplicative of the federal program and therefore unnecessary. Ms. Smith responded that the State Program looks at the cumulative effect of air toxics emitted from a facility and that some of those emissions may not be covered by the federal program. The State Program can also look at the actual levels of air toxics leaving a facility and determine if they are affecting neighboring persons or properties. Ms. Smith also noted the federal program has been behind in establishing standards for some air toxics that it has identified as problematic.

Representative Samuelson asked if other states have programs like ours and, if so, how is ours similar or dissimilar to the other programs? Ms. Smith referred to the follow-up information contained in Attachment #7, which shows the lists of air toxics covered by our State Program, the federal program, and South Carolina's air toxics program. She noted that the federal program covers 187 air toxics, that our State Program covers an additional 21 air toxics, the South Carolina program covers an additional 59 air toxics, and the Virginia air toxics program covers the same 187 air toxics as the federal program. Representative Samuelson asked if most other states have programs that include air toxics not covered by the federal program. Ms. Smith responded that several States do and that they could provide additional information on this. Representative Samuelson noted that our State Program looks at potential impacts to people at neighboring properties and asked about neighboring properties that aren't inhabited. Ms. Holman responded that there is an inhabitability provision in the State Program that takes this into

account. Ms. Smith noted that just because a property is currently uninhabited doesn't mean that it will remain so. Representative Samuelson asked several questions about the list of emissions of air toxics by facility contained in Attachment #7. Ms. Smith explained that the list includes all facilities required to report emissions of air toxics and that the facilities are listed in order from greatest to least emissions.

Senator Bingham noted that paper manufacturing facilities and electric power generation facilities produced the majority of emissions of air toxics and asked what types of air toxics these facilities emit. Ms. Holman explained that most of the emissions from electric power generation facilities are from the combustion of coal. She also directed the Commission's attention to page 53 of Attachment #7, which shows emissions from select industry sectors, including paper mills and electric power generation facilities. Senator Bingham referenced the Clean Smokestacks Act (S.L. 2002-4) and its reduction of certain air pollutants. He then asked about air toxics originating in neighboring states. Ms. Smith noted that most air toxics tend to be more local in effect and that the State doesn't have very good data on air toxics coming from other states. Senator Bingham asked about pollutants emitted from the Tennessee Valley Authority's (TVA) coal-fired power plants. Ms. Smith explained that the Clean Smokestacks Act required emissions reduction technology to be applied to a number of coal-fired power plants in North Carolina. It also required the State to examine air pollution generated by neighboring states. Based on this, the State filed a lawsuit against TVA seeking reductions in emissions of air pollution. The lawsuit was ultimately settled with TVA agreeing to implement significant reductions. Senator Bingham asked about international sources of air pollution, like China. Ms. Smith responded that the State does not have good information on this because China doesn't require sources and facilities to report their emissions as is required in the United States. She reiterated that air toxics have mostly localized impacts, so although China is a source for other types of air pollution that affect the United States, its air toxics emissions probably have little to no impact on air quality in the United States. Senator Bingham asked about the contribution of automobiles to air pollution in North Carolina. Ms. Smith directed the Commission's attention to the information provided under Question #5 on page 1 of Attachment #7. Based on EPA estimates, mobile sources (automobiles) emitted over 89 million pounds to air toxics in North Carolina in 2008, which represents 65% of total air toxics emissions in the State for that year.

Senator East asked Ms. Smith about the history, implementation, and cost of the State Air Toxics Program. Ms. Smith explained that the State Program had its origins in 1989 based on an Executive Order from then Governor Jim Martin. The Executive Order to establish the State Program was issued because the EPA was making little progress in regulating air toxics at the federal level. A number of other states also established air toxics programs. Ms. Smith further explained that the federal program covers air toxics that present problems at the national level. Some air toxics that aren't a problem at the national level can be problematic at the State level. This is why the State Program regulates air toxics that are not regulated at the federal level. Ms. Lanier McRee, Fiscal Analyst with the Fiscal Research Division, provided information on the costs of the State Program. She explained that the Division of Air Quality (DAQ), including the State Toxics Program, is entirely receipt supported and receives no funding from the General Fund. The annual budget for DAQ in its entirety is about $29.1 million, and the total annual cost to operate the State Program is $645,574. Senator East asked about fees under the State Program. Ms. Smith explained that the fees are annual, that they are paid by permitted facilities, and that they are based on EPA estimates for operating the State Program. She noted that for 2010, permit fees accounted for $17 million of DAQ's budget while the rest of the budget came from a portion of the motor fuels tax, federal funds, and other sources. Senator East asked if the fees were based on the amount of air toxics emitted at a facility. Ms. Smith explained that the fee amount is based on the type of facility. Ms. Holman added that the fees are based on the tonnage of emissions of air toxics from each facility in a given year.

Senator Jackson asked which facilities have to get permits and how often facilities are inspected. Ms. Smith responded that permit requirements are based on the amount of air toxic emissions and that the Department tries to inspect larger facilities annually and smaller facilities once every 2 years. Senator Jackson asked how a new facility determines if it needs a permit. Ms. Smith responded the facility should contact the Department and the Department can determine if the facility meets the threshold for needing a permit.

Representative Justice asked whether cumulative effects are considered under the State Program and whether emissions from existing facilities could determine the amount of emissions allowed at a new facility. Ms. Smith explained that under the State Program the cumulative effects from all sources at a particular facility are considered. Ms. Holman explained that the under the State Program only the cumulative effects from a single facility are considered; the cumulative effects from multiple facilities are not considered under the State Program. She further explained that this is not the case for other types of air pollutants under other programs where regional or even national cumulative impacts may be considered.

Senator Rouzer asked about the information in Attachment #7 regarding estimates of sources and amounts of air toxics. Ms. Holman responded that the information is based on EPA estimates that are produced every 3 years.

Information on the science behind and health benefits of the State Air Toxics Program

Senator Rouzer recognized Dr. George Lucier, Past Chair of the State Air Toxics Program's Scientific Advisory Board and Former Associate Director of the National Toxicology Program to speak on the science behind and health benefits of the State Program. Dr. Lucier's credentials and presentation are included in the minutes as Attachments #8 and #9 respectively.

Representative Samuelson asked about the reasonable estimate of risk and if the goal of the State Program is to allow no increase in risk. Dr. Lucier explained that acceptable levels of risk are allowed. For example, with a known human carcinogen, the acceptable risk is considered to be 1 in one million additional incidences of cancer. Dr. Lucier also noted that there are a number of factors that go into calculating acceptable levels of risk.

Senator East asked if air toxics are such a problem, why are people living longer. Dr. Lucier responded that because of various environmental programs, including the State Program, levels of many pollutants have decreased as has people's exposure to them. He also noted that various improvements in medical care and public health have contributed to longer lifespans.

Representative Gillespie asked how the health-based standards of our State Program compare with the standards of other states. Dr. Lucier explained that in some cases our standards are stricter, but in other cases they are less strict.

Senator Bingham asked whether the State Program or the federal program consider the economic impact of compliance. Ms. Holman explained that the State Program considers technical and economic feasibility. Senator Bingham asked how levels of risk are determined for different air toxics and specifically asked about mercury. Dr. Lucier explained how and to what extent mercury is transported. He further explained mercury is very biologically and ecologically persistent, which is one of the reasons that it is so toxic. Senator Bingham asked if PCBs (Polychlorinated biphenyls) bioaccumulate in fish like mercury does. Dr. Lucier responded that it does and added that the bioaccumulation of both mercury and PCBs in fish is one of the reasons it is difficult to assess the risks of eating fish.

Senator Hartsell asked about arsenic, fluoride and cyanide. Dr. Lucier answered that these substances are like PCBs because they are or form multiple compounds. Some of these substances are not persistent in the environment while others are.

Comments from the regulated community on the State Air Toxics Program

Senator Rouzer recognized Preston Howard, President of the Manufacturers and Chemical Industry Council of North Carolina. Mr. Howard introduced himself and his organization and spoke about how the State Air Toxics Program impacts his members. His presentation is included in the minutes as Attachment #10.

Senator Hartsell asked about the relationship between State and federal air quality programs. Mr. Howard responded that the federal Title V Program has been delegated to the State and that the State implements and enforces the program.

Representative Samuelson asked if the same people are administering the State Air Toxics Program as well as federally delegated air quality programs. Mr. Howard responded yes, that one agency, the Division of Air Quality in DENR, implements all of the air quality programs. Representative Samuelson asked about when changes to a facility require new modeling to be performed. Mr. Howard responded that new modeling would be required if the modification resulted in an increase in emissions.

Representative McGrady asked about what changes to the State Program Mr. Howard was suggesting. Mr. Howard responded that he thinks the State Program should be amended so that a source that must comply with the requirements of the federal program would not be covered by the State Program. He also said that modeling requirements should be consolidated so that facilities don't have to perform multiple modeling exercises. He said the "Director's call" provision of the State Program would still allow DENR to address situations where a facility was demonstrably impacting the health of adjacent neighbors.

Senator East asked about the recent decision by a tire manufacturing company not to locate in North Carolina and whether that decision was based on incentives or on the stringency of North Carolina's environmental rules. Mr. Howard responded that he didn't know the basis of this decision. He added that companies do look at regulatory environment when deciding where to locate and that some smaller companies are choosing other states because they believe they can begin operating their facilities more quickly. He also added that it is his understanding that another manufacturing facility chose to locate in South Carolina instead of North Carolina, in part, because of the stringency of our State Air Toxics Program.

Senator Bingham asked Mr. Howard to provide recommendations to make North Carolina more competitive with other southeastern states. Representative Gillespie responded that he intended to get Mr. Howard to do this.

Senator Hartsell asked why companies choose to locate in South Carolina when South Carolina regulates more air toxics than North Carolina. Mr. Howard noted that there are a number of states that regulate more air toxics than North Carolina, but that many of those states, such as South Carolina, exempt sources that are regulated under the federal program.

Senator Rouzer recognized Lew Ebert, President and Chief Executive Officer of the North Carolina Chamber for his comments. Mr. Ebert introduced himself and explained the importance of regulatory efficiency, consistency, and predictability to the business community in North Carolina. His presentation is included in the minutes as Attachment #11.

Quarterly reports by the Environmental Management Commission (EMC) as to its operations, activities, programs, and progress for the period from October 2010 through September 2011 (G.S. 143B-282(b))

Senator Rouzer recognized Stephen Smith, Chair of the Environmental Management Commission (EMC). Mr. Smith gave a brief overview of the EMC's quarterly reports from October 2010 through September 2011. A cover memo and the four quarterly reports are included in the minutes as Attachments #12, #13, #14, #15 and #16, respectively.

Representative Samuelson asked Mr. Smith to explain the background and rationale for the repeal of the combustion source exemption under the State Air Toxics Program. Mr. Smith stated the original exemption was based upon the expectation that EPA was going to issue an emissions control standard for combustion sources and that a State standard wouldn't be necessary. After 13 years of waiting, the EMC decided it couldn't wait any longer and eliminated the exemption for new and expanding facilities. For existing facilities, the "Director's call" provision of the State Air Toxics Rules was used to review those sources and only those that exceed certain thresholds were required to implement measures to control emissions. Representative Samuelson asked if a source would lose its grandfather status if it was modified. Ms. Holman responded that it would if the modification caused an increase in emissions beyond certain thresholds.

Mr. Smith asked if Ms. Holman could explain the use of the "Director's call" provision in the case of combustion sources. Ms. Holman explained that under the "Director's call" the Division of Air Quality in DENR reviewed 1,800 combustion sources at approximately 450 facilities. The Division did a further review of 40 of those facilities where there was evidence that there could be some adverse health effects at the property line. Upon further review and modeling, it was determined that 18 of the facilities were actually creating adverse health impacts at the property line.

Senator East asked Mr. Smith to explain the last entry on the EMC Quarterly Report for the period April 1, 2011 through June 30, 2011 (Attachment #14). Mr. Smith explained the item designated as "*Denied the petition for rulemaking to amend the Underground Storage Tanks Secondary Containment Rules*" concerned a petition for rulemaking filed by the Steel Tank Institute Plate Fabricators Association requesting an amendment to the rule governing underground storage tank (UST) secondary containment standards. At the time of the petition, the rule required that tanks must be protected from external corrosion by specific means in accordance with the Code of Federal Regulations, but did not allow the use of cathodically protected steel tanks for that purpose. The petition requested that use of cathodically protected tanks be allowed for that purpose. The EMC denied the petition.

Senator Rouzer stated that he believed the General Assembly had enacted legislation on this issue, and asked Ms. Jennifer McGinnis, Commission Counsel, for information in that regard. Ms. McGinnis confirmed that a provision had been enacted during the 2011 Session in House Bill 119 (Amend Environmental Laws) to allow use of cathodically protected steel tanks for corrosion protection purposes, thereby overriding the EMC's decision on the issue.

Update on DENR's study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State

Senator Rouzer recognized Robin Smith, Assistant Secretary for Environment, DENR, to provide an update on DENR's study of the use of directional and horizontal drilling and hydraulic fracturing or

"fracking" for the purpose of oil and gas exploration in the State. Her presentation is included in the minutes as Attachment #17

Commission discussion and announcements

Senator Hartsell informed the Commission that he had submitted a letter to Attorney General Roy Cooper concerning the ownership of the submerged bed of the Yadkin River at the site of the Yadkin Hydroelectric Project during the last meeting. He stated today, he has not received a response from the Attorney General and would like to submit the motion to intervene submitted by the Attorney General on behalf of DENR in the Yadkin Hydroelectric Project reauthorization. The basis for intervention stated in the motion is that the State retains title to navigable waters and that the navigable waters themselves are a public resource. The motion is included in the minutes as Attachment #18.

Senator Rouzer thanked the members and staff, and announced the next meetings to be held would be Wednesday, November 9, 2011, at 9:00 a.m. and Wednesday, December 14, 2011, at 9:00 a.m. The dates and times are subject to change and notice will be given if they do change.

Adjournment

The meeting was adjourned at 12:20 p.m.

DRAFT

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Attest:

Sarah Neunzig, Committee Clerk

2011-2013 Environmental Review Commission Budget Estimate

1) Legislative Members Subsistence — **$32,448.00**

	$104.00	*Legislative Subsistence*
X	16	*Number of Legislative members*
X	1.5	*Half of Members using Two Days of Subsistence*
X	13	*Number of Meetings*
=	$32,448.00	Total Legislative Members Subsistence

2) Non-Legislative Members Subsistence — **$0.00**

	$116.00 *	*Non-Legislative Members Subsistence*
X	0	*Number of Non-Legislative Members*
X	1.5	*Half of Non-Legislative Members using Two Days Subsistence*
X	13	*Number of Meetings*
=	$0.00	Total Non-Legislative Members Subsistence

* *$101.05 Daily Per Diem Rate Plus $15 Committee Per Diem Rate (GS138-5)*

3) Travel Expenses — **$14,560.00**

a) Legislative Members

	$70.00	*Round Trip Reimbursement (Based on 242 miles @ $0.29 per mile*)*
X	16	*Number of Legislative Members*
X	13	*Number of Meetings*
=	########	Total Travel for Legislative Members

b) Non-Legislative Member

	$73.00	*Round Trip Reimbursement (Based on 242 miles @ $0.30 per mile*)*
X	0	*Number of Non-Legislative Members*
X	13	*Number of Meetings*
=	$0.00	Total Travel for Non-Legislative Members

* *242 Miles is an Average per Member based on the Total Certified Round Trip Mileage*

4) Clerical Staff — **$10,634.00**

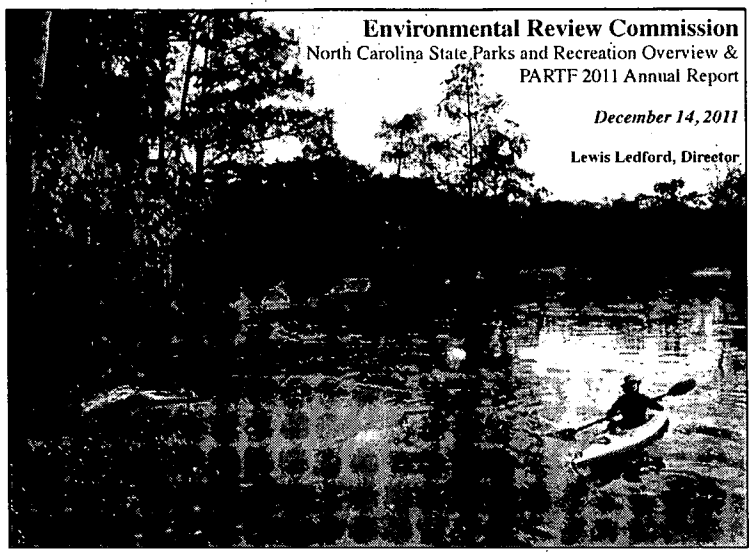
	$818.00 *	*Average Salary with Benefits for 5 day work week*
X	13	*Number of Meetings*
=	$10,634.00	Total Clerical Staff

* *Average Weekly Wages for LA, CAI, CAII & CAIII with Fringes Added.*

5) Professional Staff		**$0.00**
6) Special Travel and Expenses		**$2,000.00**
7) Postage and Telephone Expenses		**$500.00**
8) Supplies		**$500.00**
9) Copying and Printing		**$2,000.00**
10) Reserve		**$3,250.00**
Total		**$65,892.00**

Updated 09/01/2011

10



Environmental Review Commission

North Carolina State Parks and Recreation Overview & PARTF 2011 Annual Report

December 14, 2011

Lewis Ledford, Director

Parks and Recreation Trust Fund (PARTF)

Established to provide funding for:

State Parks
- land acquisition
- capital improvement projects

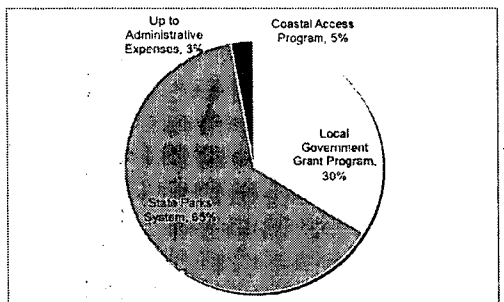
Local governments P & R
- matching grants for local parks

Coastal Beach Access Program
- matching grants for beach access

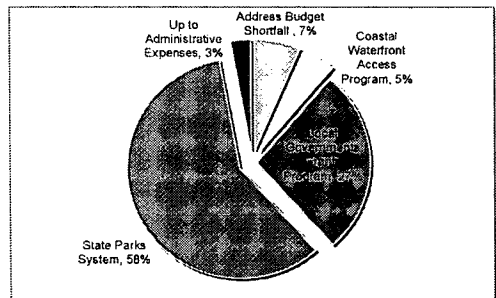


Chimney Rock State Park

PARTF Revenue Allocated by General Statute



PARTF Revenue Allocated by Purpose 2010 - 2011



Lewis Ledford, Director
Division of Parks + Recreation
Presentation

PARTF Revenue 2010 - 2011

- Primary revenue source: $1.00 tax per $500 value for real estate transfers
- PARTF receives 75 percent of the state's portion of the revenue (FY 10-11 = $25.8 million)
- $1.7 million transferred to the General Fund to address budget shortfall
- Total PARTF Revenue in 2010-11: $24.1 million

FY 2011-12 State Budget
Allocation of PARTF Revenue

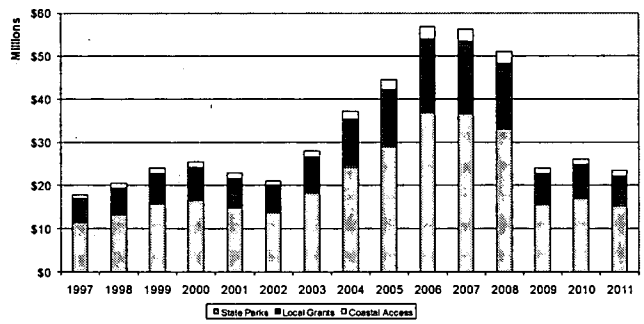
Revenue Diverted or Transferred

	(millions)
Diverted to the General Fund	$ 8.4
Division of Parks and Recreation operating budget	$ 6.0
– DPR operating budget was reduced by $6 million	
– Includes 3 percent operating budget for the PARTF program	

Revenue Available for state parks, local parks and beach access

	(millions)
State park projects – land and capital	up to $8.0
– Includes $ 7.2 million for COPs repayment	
– About $ 800,000 available for current projects	
Matching grants to local governments	up to $4.23
Beach Access program	up to $ 0.7
Total	$27.3

PARTF Revenue by Purpose Since 1997



North Carolina
Parks and Recreation Authority



North Carolina
Parks & Recreation
Trust Fund

PARTF Grant Program for Local Governments

PARTF Grants for Local Governments Basic Facts

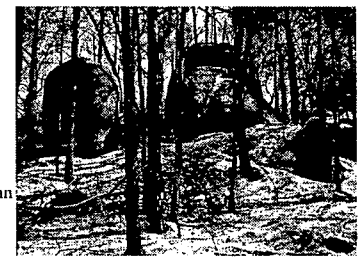
- Applicants – Local governments
- Eligible Projects – Acquire park land and build recreational facilities for the general public



Louisburg – Walking Trail

PARTF Grants for Local Governments Basic Facts

- Maximum Grant Amount - $500,000
- Local governments match the PARTF grant dollar-for-dollar.
- The value of donated property can be used as the local match.



Rowan County – Dunn's Mountain

PARTF Grants for Local Governments Important Dates

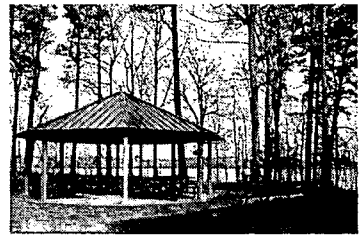
- Applications due January 31
- The Parks and Recreation Authority selects grant recipients in May and July



Spruce Pine – Brad Ragan Park

PARTF Scoring System: An Objective Evaluation

- Number of recreational facilities provided
- Planning the project
- Involving the public
- Acquiring land
- Applicant's ability to operate and maintain the project
- Quality of the park site



Roanoke Rapids – Picnic Shelter on Lake Gaston

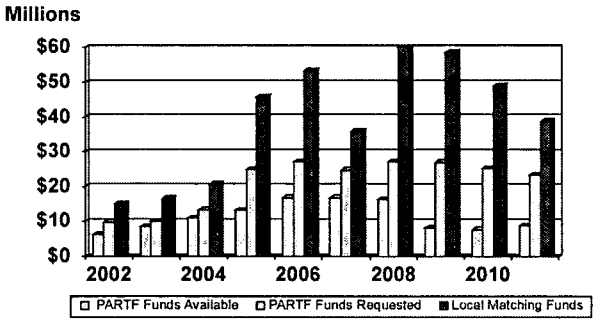
Selecting Grant Recipients: Other Factors Considered

- Distributing grant awards across the state
- Population of the applicant
- Administration of previous grants
- The applicant's justification for the project

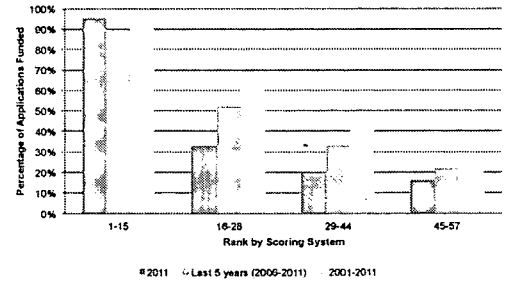


Chowan County – Community Center

Grant Requests from Local Governments Exceed Funds Available

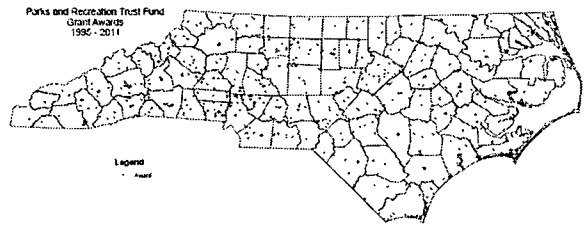


PARTF Scoring System: the highest-ranked applications receive the most grants



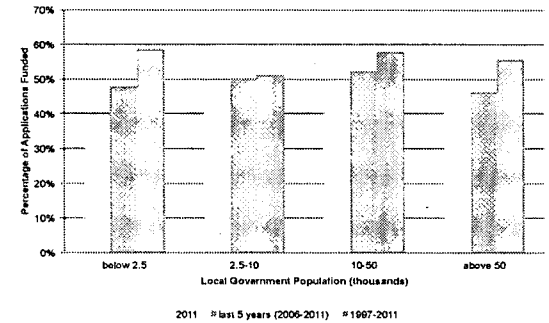
Only a quarter of the lowest ranked projects receive a grant.

Geographic Distribution



- Grants awarded in 99 of 100 counties
- More than 350 local governments have received a PARTF grant

Grants have been evenly distributed to small, medium and large communities



PARTF Local Grant Requests and Awards 2011

Applications

- 80 applications received proposing $62.1 million in land acquisition and recreational facilities
- $23.3 million in grant requests
  - ($2.6 requested for every $1 available)
- $38.7 million in local matching funds committed

Grants Awarded

- 30 grants awarded to projects totaling $26.3 million
- $8.7 million in PARTF funds awarded
- $17.6 million in local matching funds leveraged

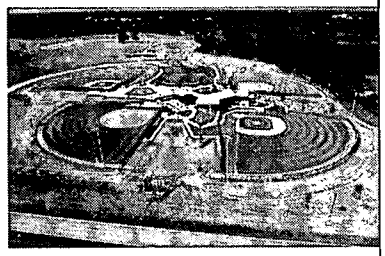
Examples of PARTF Grant Awards 2011

- **Lenoir County — Woodman Water Park**—This 3.1 acre water park will be the largest in eastern North Carolina.
- **Johnston County — Town of Clayton – Trailhead for the Mountains-to-Sea Trail** —The 79.3-acre site offers 3,000 feet of forested Neuse River riverfront.
- **Gaston County—Town of Stanley - Harper Park** — Harper Park will be the Stanley's first public park, the result of a 10-year local fundraising effort.

PARTF Grant Program
Benefits to Local Governments

Helping local economies

- Building park facilities
- Creating jobs
- Supplementing local budgets



City of Wilson – Athletic Complex

PARTF Grant Program
Benefits to Local Governments

Greenways

- Buffer streams and improve water quality
- Increase property values and tax revenue
- Provide opportunities for exercise



Overlook – Catawba River Greenway – City of Morganton

PARTF Grant Program
Benefits to Local Governments

Health Benefits

- Encouraging healthy, more active lifestyles with local parks
- Addressing childhood obesity by promoting exercise
  - North Carolina ranks 5th in the US for childhood obesity
  - Four of the leading 10 causes of death in the US are related to obesity



Skateboard Park - Asheboro

North Carolina
Parks & Recreation
Trust Fund

PARTF Capital Funding for State Park System

PARTF Capital Improvement Projects Bring Jobs to NC Communities

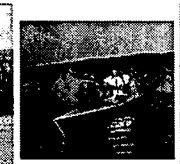
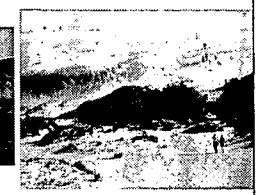
19 projects for the State Parks System totaling $8.4 million including:

- **Rutherford County - Chimney Rock State Park**
  - Elevator and Sky Lounge Improvements - complete modernization of the elevator, structural improvements to the building, replacement of the elevator emergency exit stairway and ADA modifications to the restrooms and all portions of the building.
- **Rockingham County – Haw River State Park**
  - Initial development to provide public access of nearly 700 acres that is currently undeveloped to serve the Triad area.
- **Halifax County – Medoc Mountain State Park**
  - Construction of up to 10 miles of bicycle trails to provide a new opportunity via a partnership between the park and mountain bike groups.

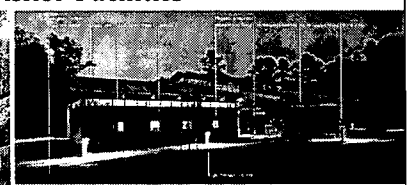
North Carolina State Parks - *Economic Impact Study*

Parks, Recreation and Tourism Management
NC STATE UNIVERSITY
RRS

- State Parks contribute $419 million to local communities across the state – *based on NC State University study*
- Each tourist spends an average of $23.50 each day of a visit

Recent Accomplishments – Visitor Facilities


Raven Rock State Park Visitor Center
LEED Certified Gold

Fort Macon State Park
Coastal Education and Visitor Center



Fort Macon State Park
Coastal Education and Visitor Center

- First non-university state building with LEED Gold Certification (Leadership in Energy and Environmental Design)

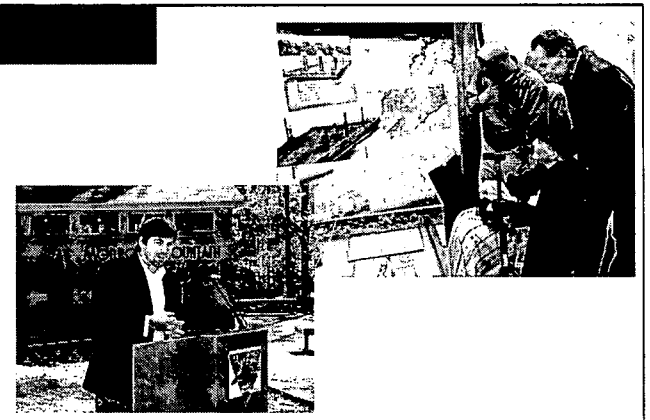




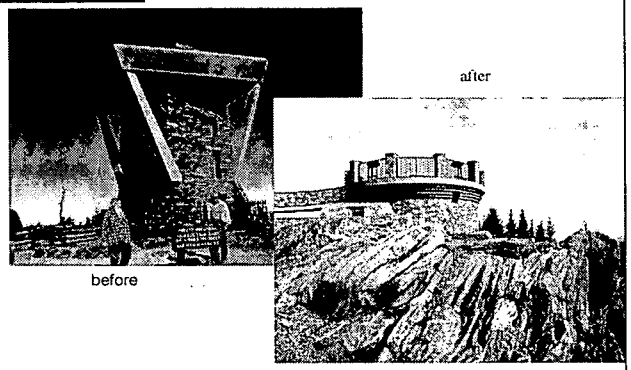
Cliffs of the Neuse State Park Visitor Center Dedicated



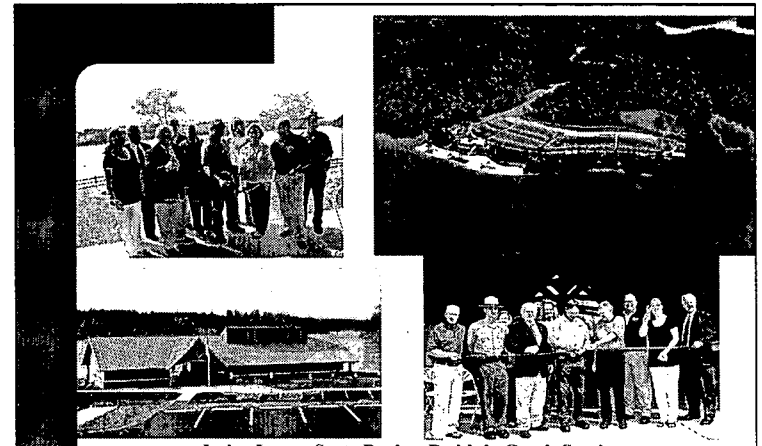
Elk Knob State Park
Summit Trail completed with volunteers



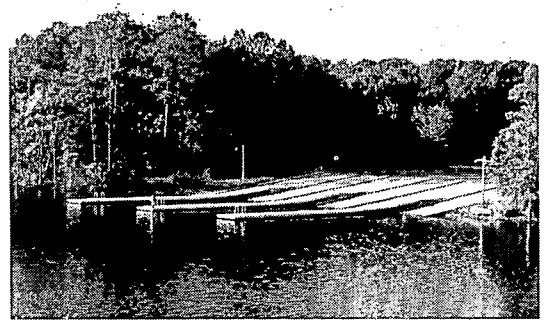
Morrow Mountain State Park Exhibit Hall Dedicated



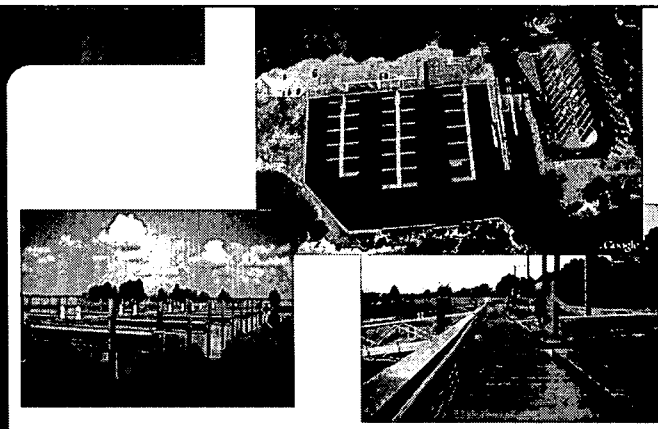
Mount Mitchell State Park Viewing Platform



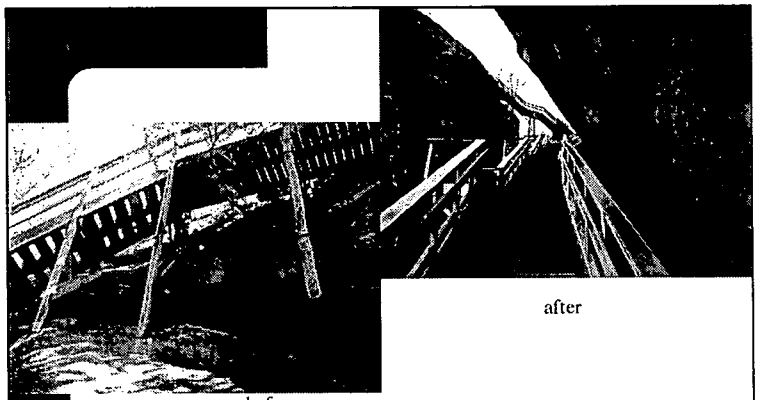
Lake James State Park - Paddy's Creek Section



Courtesy Docks at Jordan Lake State Recreational Area



Carolina Beach State Park Marina Improvements



after

before

Chimney Rock State Park Trail Project

PARTF Land Acquisition Projects in the State Parks System

FY 2010-11

6 projects for the State Parks System totaling 430 acres including:

- Carvers Creek State Park
- Chimney Rock State Park
- Elk Knob State Natural Area
- Mount Mitchell State Park
- Weymouth Woods State Nature Preserve

- In addition, $7.2 million in COPs repayment for lands purchased at Chimney Rock, Lake James, Grandfather Mountain and Haw River state parks.

PARTF Land Acquisition Projects



Carvers Creek State Park---245 acres---Two tracts for the Sandhills section to provide land for facilities serving the Fort Bragg area and buffering the base.

PARTF Land Acquisition Projects



Chimney Rock State Park—111 acres--- on Rumbling Bald, within a nationally significant natural heritage area.

PARTF Land Acquisition Projects



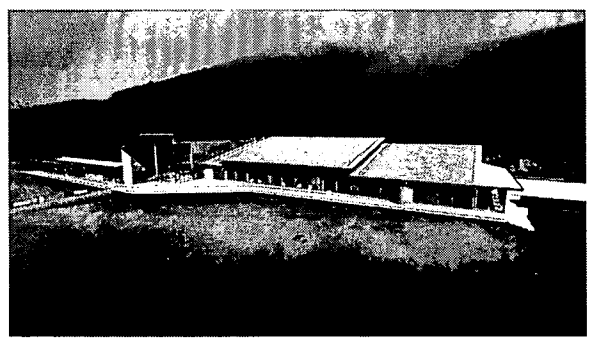
Mount Mitchell State Park---4 acres---Small tract adjacent to existing state ownership in nationally significant high elevation natural communities in the Black Mountains.

Grandfather Mountain State Park



- Diversity of habitats - 16 ecological communities.
- Rare species - 73 identified; 32 federally or state listed.

Grandfather Mountain Learning Lodge



Grandfather Mountain Learning Lodge



Exhibit Hall

Leveraging Land Acquisition Funds

- To supplement reduced PARTF revenues over the last two fiscal years, the Division of Parks and Recreation has used $8.8 million of private and federal funding for land acquisition projects.



Yellow Mountain State Natural Area

North Carolina State Parks *- a system of state parks, state recreation areas, natural areas, state trails, state rivers and state lakes*

- *216,293 acres*



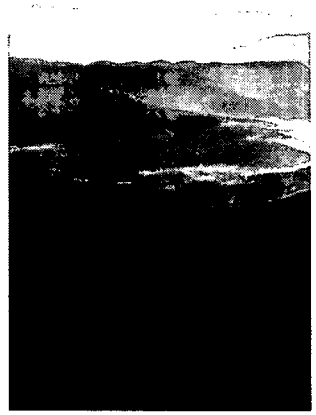
Singletary Lake State Park



Crowders Mountain State Park

"...it shall be the proper function of the state to acquire and preserve park, recreational and scenic areas (forests, wetlands, estuaries, beaches, historical sites, open lands and places of beauty) and to control pollution of air and water"

--North Carolina Constitution, 1971



--1987 State Parks Act

"...shall consist of parks of representative examples of the resources sought to be preserved ... unique archeologic, geologic, scenic, biologic, and recreational ... together with surrounding lands ... promote understanding and pride in the natural heritage of the State..." GS 113-44.7 – 44.14



Parks Visitation at Record Levels!





2000.....11.8 million
2001.....12.6 million
2002.....13.2 million
2003.....11.2 million
2004.....11.7 million
2005.....12.3 million
2006.....12.6 million
2007.....13.4 million
2008.....12.4 million
2009.....14.2 million (new record)
2010.....14.0 million
2011..... *14 million through October*



Hammocks Beach State Park



Eno River State Park

Legacy ...and Mission



Stone Mountain State Park

Low-Cost, Low-Impact Recreation

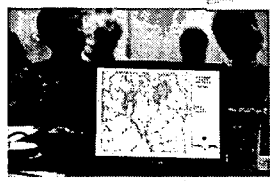


Lake Waccamaw State Park



Natural Resource Protection





Professional staff

Partnerships





Eno River State Park

A Look Back – 2011

for North Carolina State Parks and Recreation







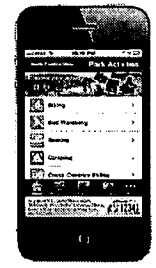


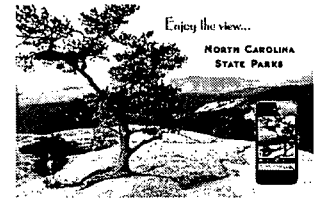






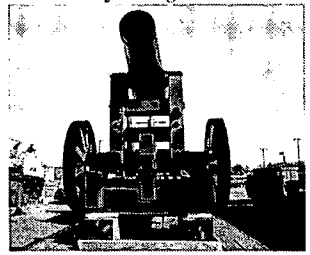


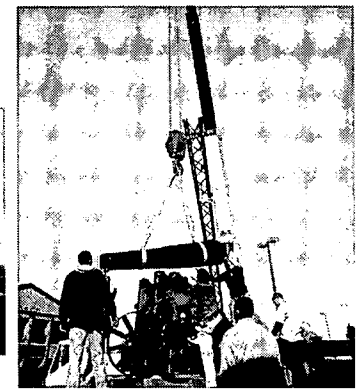




Mobile App Released

Friends of Fort Macon, Wayne Community College .... donate



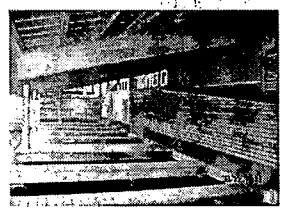


Fort Macon State Park's New 32-Pounder Cannon



completed late 2011

Pettigrew State Park Maintenance Facility





Morrow Mountain State Park Boathouse



Americorps Volunteers



Yellow Mountain State Natural Area

Acquiring significant natural communities





Day Camps Held at Jones Lake State Park



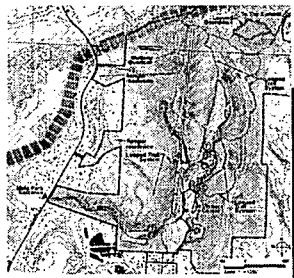
Haw River State Park Held Third Annual Grand Camp





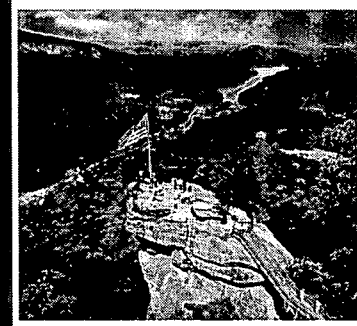
Volunteers at William B. Umstead State Park
Group Camp Cabin Restoration

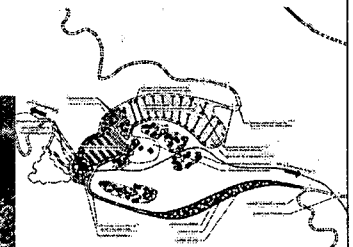
New Opportunities – Planned Visitor Facilities





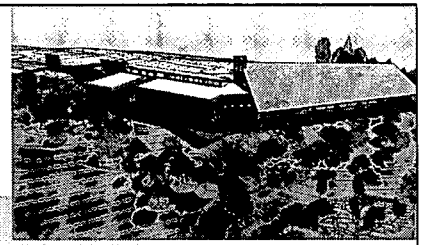
Haw River State Park - Future trails, picnicking and camping near 1.6 million people in the Triad.







Chimney Rock State Park Master Plan charts new visitor opportunities



Front Entrance Rendering



Rear Rendering

Project expected to be completed by Fall 2012.

Includes a Maintenance Facility and two day use areas both with a picnic shelter and a restroom.

Anticipate LEED **Gold**

Gorges State Park Visitor Center

Currently under design



Front Rendering (top)
Rear Rendering (bottom)



Lake Norman State Park Visitor Center (and West District Office)

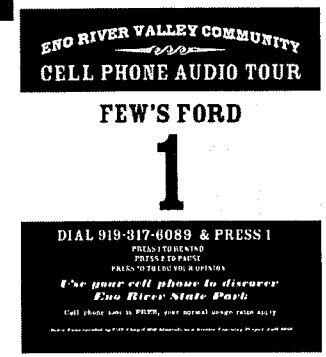
Partners & Friends





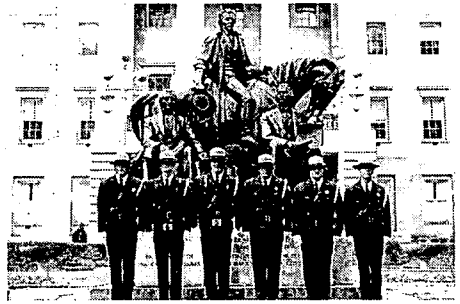


Friends of State Parks holds first conference

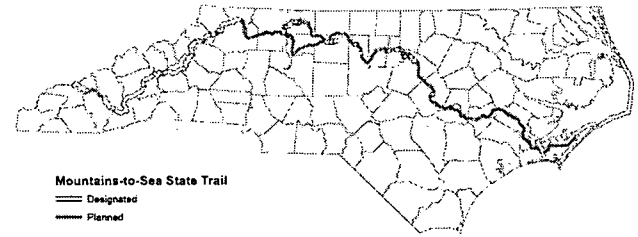


Audio Tours Launched at Eno River State Park

Service Project by UNC Chapel Hill Students

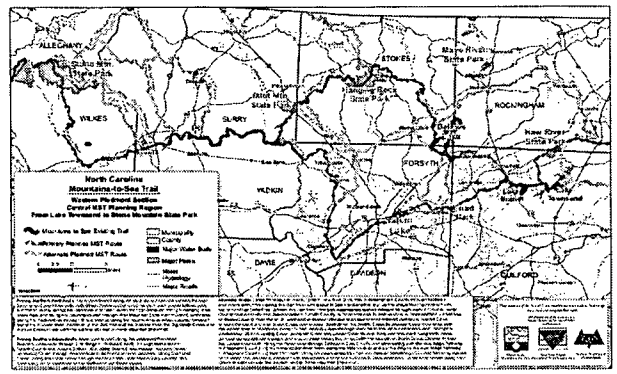


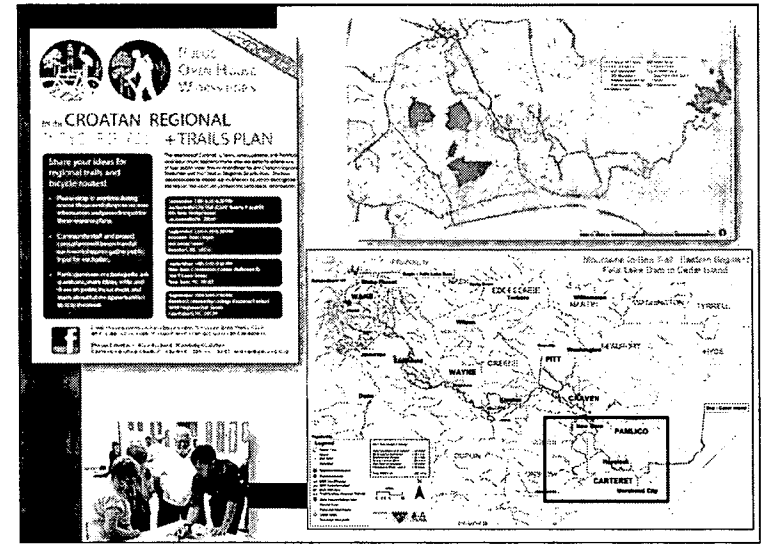
Ranger Honor Guard Formed



Constructing the Mountains-to-Sea Trail – 500 miles completed, more on the way

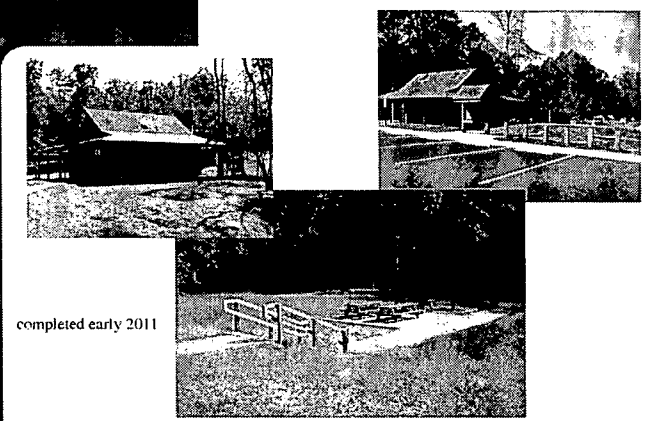
MST Piedmont West





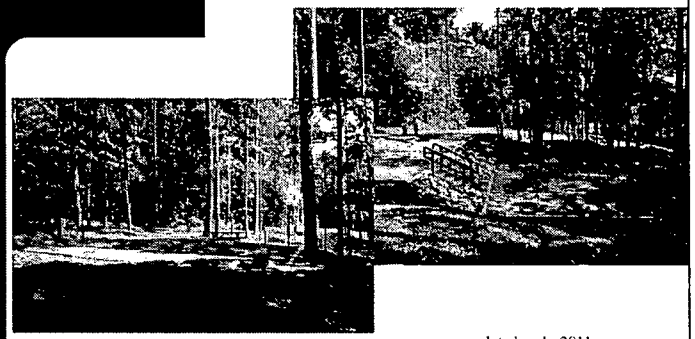


Mountains-to-Sea Trail – Progress through Partnerships



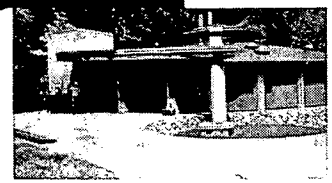
completed early 2011

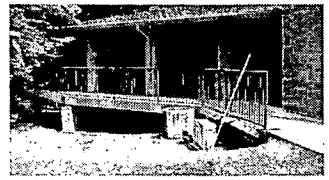
Stone Mountain State Park Group Campground

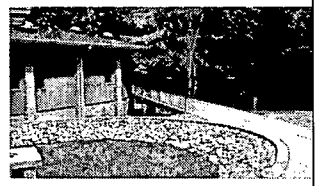


completed early 2011

Kerr Lake State Recreational Area
Henderson Point Campground







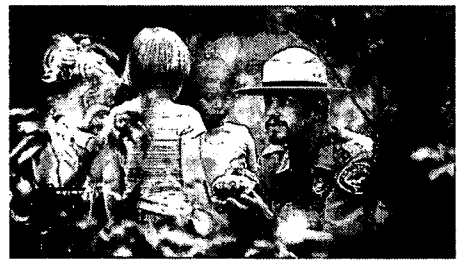
Haw River State Park
Youth Conference Building

Major Maintenance Funds



2011 The Year of the Turtle; I&E Theme

NC State Parks receives the Media Award - National Association of Interpretation





NRPA Gold Medal Program & Other Awards



Retirements: Superintendents at Mount Mitchell, Carolina Beach, Stone Mountain, Singletary Lake

State Parks System - Future Needs

Additional land and facilities are needed at most state parks.
More than 40 potential park units have been identified by the *New Parks for a New Century* initiative.
The system is experiencing record growth and park visitation
Important natural resources need protection



Funding for State Parks

Capital Funding:

1916-1950: Only $1.6 million appropriated to state parks

1993: General Assembly approves **$35 million bond** issue
$24.5 million for capital improvements
$10.5 million for lan acquisition

1994: General Assembly approves a dedicated funding, the **Parks and Recreation Trust Fund,** using a portion of the real estate excise tax

Since 1994: Notable improvements in facilities and growth to meet demand and protect resources

Operational Funding: *$38.5 million annual budget, $4.11 per capita*
NC ranks #45 nationally, only above VA in the Southeast

. . . *to protect North Carolina's* ***natural diversity;***
. . . *to provide and promote* ***outdoor recreation*** *opportunities throughout North Carolina; and*
. . . *to* ***exemplify and encourage good stewardship*** *of North Carolina's natural resources for all citizens and visitors.*

North Carolina

Parks and Recreation Trust Fund

2010–2011

ANNUAL REPORT



Division of Parks and Recreation

Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Lewis R. Ledford, Director
Division of Parks and Recreation

Dee A. Freeman, Secretary
Department of Environment and Natural Resources

Parks and Recreation Trust Fund
Annual Report 2010–2011

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1.0 Introduction

The North Carolina General Assembly established the North Carolina Parks and Recreation Trust Fund (PARTF) on July 16, 1994. The General Assembly made an initial appropriation of $1 million to the PARTF to fund improvements in state parks, to fund grants for local governments and to increase public access to the state's beaches. In 1995, the General Assembly dedicated funds from the excise stamp tax to the trust fund starting in FY 1996-97. The Parks and Recreation Authority, a 15-member board, was also created to allocate funds from the PARTF to projects in state parks and to grants for local governments.

An excise tax on real estate transfers is the primary funding source for the PARTF. The tax is levied on each "deed, instrument, or writing by which interest in real property is conveyed to another person." The tax is levied at the rate of one dollar on each $500 of the interest or property conveyed. Each county remits one-half of the proceeds, less the county's allowance for administrative expenses, to the state. Effective July 1996, the General Assembly (G.S. 105-228.30) stipulated that part of the state's share would be allocated to the PARTF. The Department of Revenue credits 75 percent of the funds remitted to the Parks and Recreation Trust Fund and 25 percent to the Natural Heritage Trust Fund. Additional revenue is allocated from a portion of the fees from personalized license plates as well as investment earnings credited to the assets of the fund.

Pursuant to G.S. 113-44.15, the money from the Parks and Recreation Trust Fund is to be allocated as follows:

(1) Sixty-five percent (65 percent) for the State Parks System for capital projects, repairs and renovations of facilities and to acquire land.

(2) Thirty percent (30 percent) to provide grants to local governments on a dollar-for-dollar basis to create or improve parks and recreational projects.

(3) Five percent (5 percent) for the Coastal and Estuarine Water Beach Access Program.

(4) No more than three percent may be used by the Department of Environment and Natural Resources (DENR) for the operating expenses associated with managing capital improvements projects, acquiring land, and administering the grants program for local governments.

2.0 North Carolina Parks and Recreation Authority

The North Carolina Parks and Recreation Authority, a 15-member board which oversees the Parks and Recreation Trust Fund, was created by the General Assembly with the Authority's powers and duties becoming effective July 1, 1996. The Governor appoints five members, including the chairperson. The General Assembly appoints 10 members, five upon the recommendation of the President Pro Tempore of the Senate and five upon the recommendation of the Speaker of the House.

The Authority is charged with six powers and duties: 1) to receive public and private donations and funds for deposit into the trust fund; 2) to allocate funds for land acquisition; 3) to allocate funds for capital projects; 4) to solicit financial and material support; 5) to develop effective support for parks and recreation; 6) and to advise the Secretary of DENR on any matter he may refer to the body.

Members are appointed for three-year terms and may serve no more than two consecutive three-year terms. After serving two consecutive three-year terms, a member is not eligible for appointment to the Authority for at least one year after the expiration of the member's last term. The Parks and Recreation Authority held four meetings during fiscal year 2010-2011.

The 2010-2011 Parks and Recreation Authority members are:

Bill Ross, Jr. Chairman
Chapel Hill

C. Michael Allen
Mount Gilead

Mayor Loretta Clawson
Boone

Daryle Bost
Charlotte

Robert Epting
Chapel Hill

Ashley B. Futrell, Jr.
Washington

Cody Grasty
Maggie Valley

Walt Israel
Belmont

Boyd Lee
Greenville

Philip McKnelly
Raleigh

Jennifer Scott
Pittsboro

John S. Stevens
Asheville

Cynthia Tart
Oak Island

Hollis Wild
West Jefferson

Edward Wood
Wilmington

3.0 Parks and Recreation Trust Fund Summary

The Parks and Recreation Trust Fund (PARTF) is housed within the Division of Parks and Recreation. The Parks and Recreation Authority allocates PARTF revenue to the state parks capital improvement and land acquisition projects. This board also selects the recipients of the grants to local governments to create or improve parks and recreational projects. The Division of Parks and Recreation, under Lewis Ledford, Division Director, develops priorities for the state parks system and recommends projects for the board's approval. Once the board has allocated the PARTF funds, the Division manages the projects for state parks and for the grant program for local governments.

The Division of Parks and Recreation transfers 5 percent of PARTF revenue to the Division of Coastal Management (DCM) for the Coastal and Estuarine Water Beach Access Program. The Division of Coastal Management, under Division Director Jim Gregson, administers these funds and offers matching grants to local governments throughout the 20 coastal counties. Table 3-1 shows the allocation of revenues of the trust fund by program for Fiscal Year 2010-2011.

Table 3-1. Parks and Recreation Trust Fund Deposits and Distribution of Revenues Fiscal Year 2010-2011

Deposits	**Amount**
Total PARTF Revenues	**$ 25,796,385**
Personalized Registration Plates	$ 1,435,489
Investment Income	$ 372,544
Excise Tax	$ 23,988,352
Distribution	**Amount**
Total PARTF Allocation	**$ 25,796,385**
Transfer to Address Budget Shortfall	$ 1,692,544
Public Beach and Coastal Waterfront Access Program	$ 1,205,192
Local Governments Matching Grants Program	$ 6,999,745
State Parks System	
Land Acquisition	$ 2,960,191
Capital Improvements	$ 4,981,210
COPs Repayment	$ 7,224,714
Administrative Expenses Division of Parks & Recreation support staff, Authority members' travel and contract with NCSU-Recreational Resources Services	$ 732,789

4.0 Grants Program for Local Governments

4.1 *Program Description*

The Parks and Recreation Trust Fund (PARTF) program provides dollar-for-dollar matching grants to local governments. All counties and incorporated municipalities are eligible applicants. Public authorities, as defined in N.C.G.S. 159-7, that have a mandate to provide public recreation, are also eligible. Two or more local governments may apply jointly. Recipients can acquire land to be used for public recreation or to protect the natural or scenic resources of the property. Recipients can also use a grant to build or renovate recreational and support facilities. All facilities must serve the general public.

In August, the Division of Parks and Recreation (DPR) mails a description of the PARTF program and the schedule for submitting an application to local governmental officials and parks and recreation directors. A local government can request a maximum grant amount of $500,000 in PARTF assistance with each grant application. The appraised value of land that is donated to a local governmental unit may be applied to the dollar-for-dollar matching requirement.

The DPR provides assistance to local governments in several ways. In September, the PARTF staff conducts a workshop where local governments can learn about the program and how to complete an application. The workshop is presented simultaneously at University of North Carolina System video conference sites. The DPR has a contract with the North Carolina State University to provide technical assistance to local governments through the Recreation Resources Service (RRS). RRS assists local governments in planning PARTF projects and preparing grant applications with four consultants in regional offices across the state.

The members of the Parks and Recreation Authority select which applicants will receive a grant. The factors considered by the Authority as it selects recipients include, but are not limited to, the criteria contained in the PARTF scoring system, the population of the applicant, the geographic distribution of projects across the state, the presence or absence of other funding sources and compliance with prior grant agreements.

Applications were due January 31, 2011. The Parks and Recreation Authority met in May 2011 and in August 2011 to select grant recipients.

4.2 *Description of Applications and Grants*

The PARTF revenues allocated to local grants for fiscal year 2010-2011 were $6,999,745. Eighty (80) local units of government submitted PARTF applications, requesting $23.4 million in PARTF assistance. The Authority awarded 30 grants for $8,734,569. The difference between the amount awarded and the fiscal year revenues is $1,734,824 from various cancelled projects, reductions in the scope of work or projects completed under budget.

Table 4-1 shows a list of the projects approved for fiscal year 2010-2011. The table is organized alphabetically by recipient.

4.3 *Geographic Distribution of Grants*

The members of the Parks and Recreation Authority consider the geographic distribution of funds across the state as one of the factors used in selecting grant recipients. Since 1995, the Authority has awarded more than $150 million in PARTF grants to 676 projects in 99 counties across North Carolina (Figure 4-1). Figure 4.2 presents the distribution of PARTF grants by county for the current fiscal year.

Table 4-1. North Carolina Parks and Recreation Trust Fund Grants Awarded in Fiscal Year 2010-2011

Applicant	County	Project	Grant Amount
Alamance County	Alamance	Mountains-to-Sea Trail - Southern Alamance Section	$375,000
Ayden	Pitt	Ayden District Park	$499,888
Banner Elk	Avery	Tate-Evans Park	$213,500
Bath	Beaufort	Lawson's Walk	$18,000
Beaufort County	Beaufort	Crisp Landing Acquisition	$67,000
Buncombe County	Buncombe	Collier Property Acquisition	$285,500
Clayton	Johnston	North Clayton Park - Mountains-to-Sea Trail Trailhead Acquisition	$300,000
Concord	Cabarrus	Rocky River Greenway, Northwest Phase I	$425,000
Conover	Catawba	Conover Station Park	$333,744
Enfield	Halifax	Enfield Community Park Phase II	$58,000
Farmville	Pitt	Municipal Athletic Park Improvements	$176,250
Goldsboro	Wayne	Stoney Creek Park	$132,750
Graham	Alamance	Jim Minor Road Land Acquisition	$500,000
Harnett County	Harnett	Anderson Creek Park, Phase I	$500,000
Iredell County	Iredell	Scotts Rosenwald Park	$183,650
Lenoir	Caldwell	Aquatic and Fitness Center Renovation	$156,750
Lenoir County	Lenoir	Woodmen Water Park	$500,000
Lincoln County	Lincoln	Rock Springs Nature Preserve Park	$415,000
North Wilkesboro	Wilkes	Smoot Park Improvements	$238,665
Saratoga	Wilson	Saratoga Town Park	$41,138
Spindale	Rutherford	Deviney Park Improvements	$44,600
Spring Hope	Nash	Spring Hope Park Renovation	$55,000
Stanley	Gaston	Harper Park	$500,000
Stantonsburg	Wilson	Statonsburg Town Park	$100,000
Sunset Beach	Brunswick	Sunset Beach Town Park	$400,000
Trinity	Randolph	Center City Park	$500,000
Troutman	Iredell	Troutman-ESC Park	$500,000
Wake County	Wake	Turnipseed Preserve Property	$242,161
Walkertown	Forsyth	Walkertown Town Center Park	$472,97
Wesley Chapel	Union	Dogwood Park	$500,000
TOTAL			**$8,734,569**

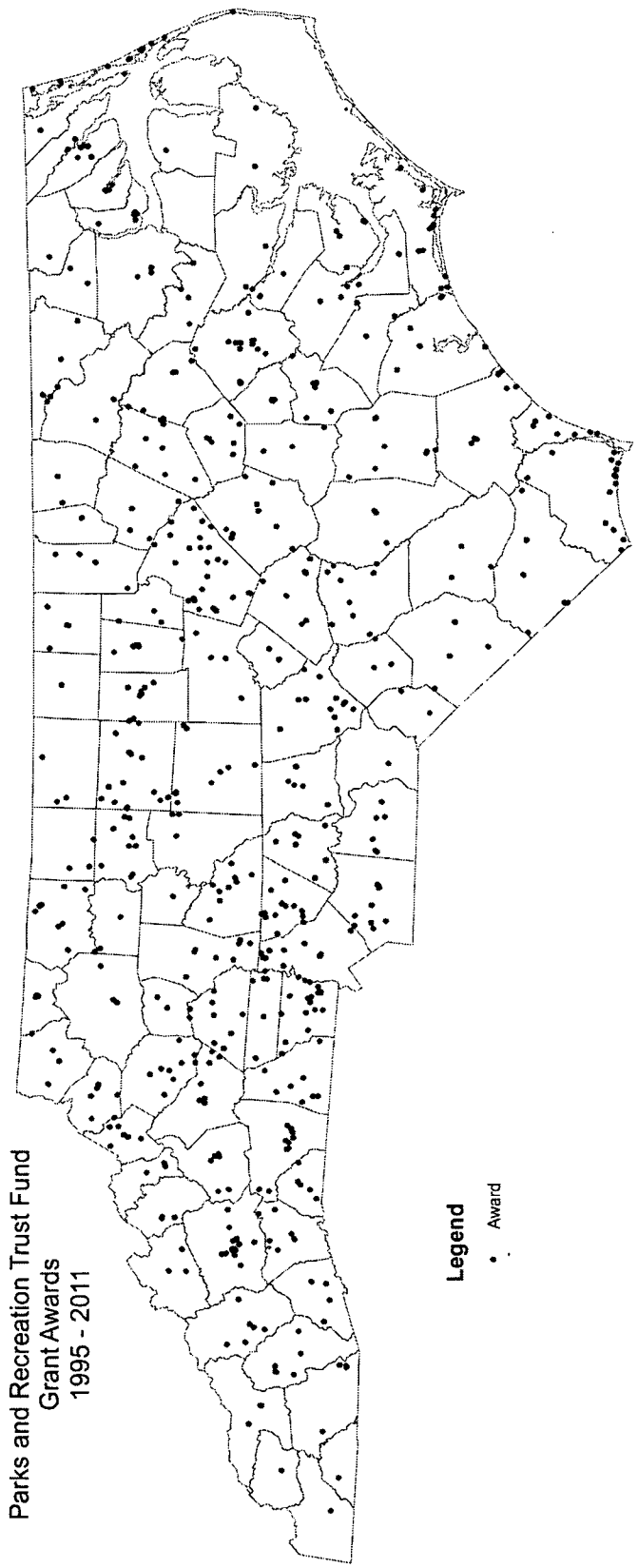


Figure 4-1. Distribution of PARTF Grants by County 1995-2011

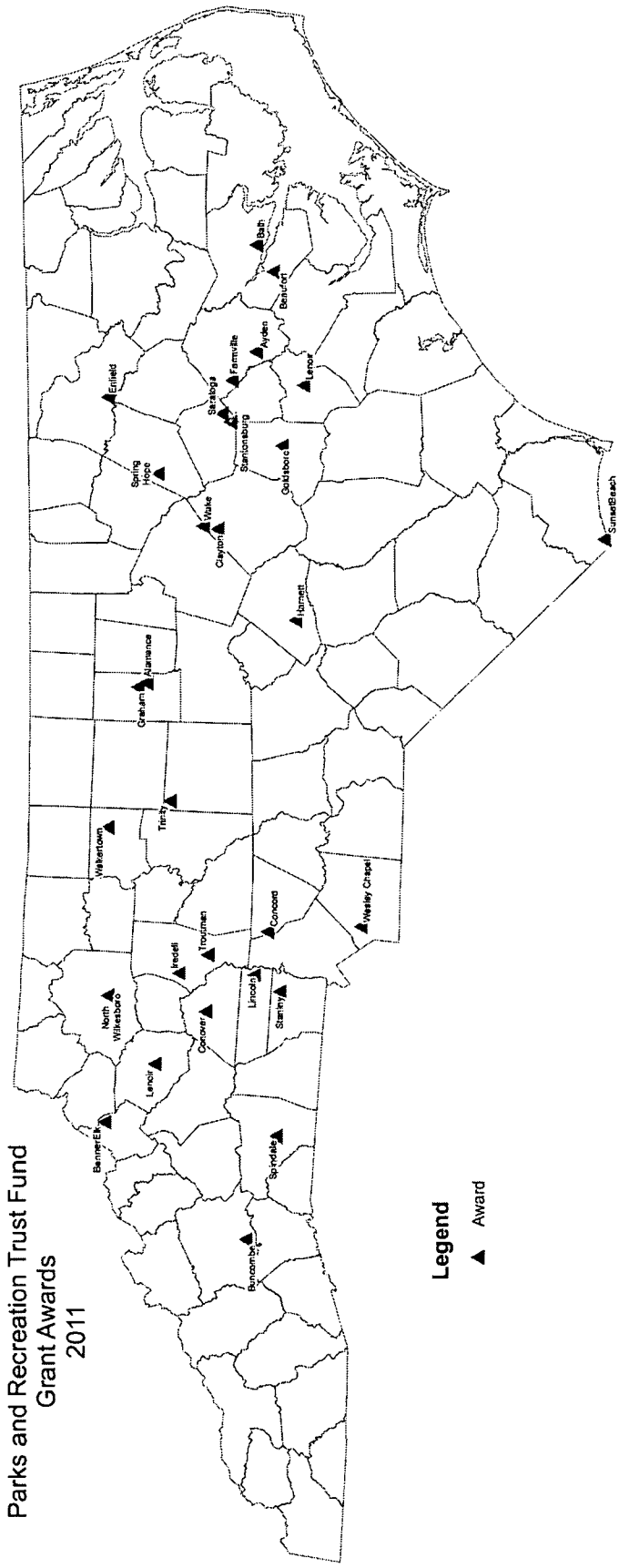


Figure 4-2. Distribution of PARTF Grants by County from 2011 Grant Cycle

Examples of Local Government Projects Funded by North Carolina Parks and Recreation Trust Fund

Lenoir County

Woodman Water Park—This 3.1 acre water park will be the largest in eastern North Carolina and is a cooperative effort between Lenoir County and the Woodmen of the World. The water park will feature a 500 foot lazy river, zero entry pool with water play features, giant tube slide with plunge pool, picnic pavilion, teen island, shade canopy, picnic shelter, and food and beverage kiosk. The park is adjacent to the Woodmen Community Center.

Johnston County—Town of Clayton

Mountains-to-Sea Trail Trailhead Acquisition-- The 79.3 acre site contains 3,000 linear feet of forested Neuse River riverfront where the Mountains-to-Sea Trail will be located. The site has sufficient upland acreage to support the major Mountain-to-Sea Trail trailhead proposed for the Clayton area as well as traditional recreational activities to serve the rapidly growing population of northern section of the county. This section of the Mountains-to-Sea Trail is particularly significant because it is the eastern terminus of nearly 125-miles of trail corridor in public ownership between Hillsborough and Clayton. The corridor includes trails on the Neuse River, Falls Lake and Eno River. With ongoing and planned construction, hikers will be able to walk this trail in approximately five years.

Gaston County—Town of Stanley

Harper Park—Efforts have been underway for a decade to raise matching funds to build Harper Park. The development of Harper Park will be the Town of Stanley's first public recreation park. Harper Park will consist of 17.4 acres, which will include a paved walking trail, hiking trail, picnic shelter, playground, two baseball fields, lighting, basketball court, parking area and restrooms.

5.0 State Parks Program

5.1 *Land Acquisition*

For fiscal year 2010-2011, the Parks and Recreation Authority approved $2,960,191 for land acquisition projects in the state parks system (Table 5-1). These projects will help address the need for additional acreage at 6 state park units. However, it will cost an estimated $176 million to purchase the 43,752 acres needed to complete all current state park units.

Table 5-1. North Carolina Parks and Recreation Trust Fund State Park Land Acquisition Projects FY 2010-11

Unit	Acres	Description	Cost ($)
Carvers Creek State Park	245	Two tracts for the Sandhills section to provide land for facilities and public access	1,009,376
Chimney Rock State Park	37	Partial funding for a tract on Rumbling Bald, within a nationally significant natural heritage area	236,500
Chimney Rock State Park	74	Two critical tracts for resource protection and future public access. One tract on the top of Round Top Mountain, the other eastern half of Bottomless Pools	962,500
Elk Knob State Park	55	Multiple small tracts, including inholdings, for resource protection and access control	202,554
Mount Mitchell State Park	4	Small tract adjacent to existing state ownership in nationally significant high elevation natural communities in the Black Mountains	140,000
Weymouth Woods State Nature Preserve	15	Small tract in the Paint Hill section. Fee simple ownership is needed for management of rare species on this tract	35,000
Associated Costs		The state covers associated costs such as title opinion, appraisals, surveys and phase one environmental assessments of acquisition projects along with land trust overhead and interest payments.	374,261
TOTAL	**430**		**$ 2,960,191**

5.2 *Construction and Renovation*

During fiscal year 2010-11, the Parks and Recreation Authority approved state park construction and renovation projects totaling $8,494,889 which consists of $4,981,210 from FY2010-11 and $3,513,679 from projects from previous years that were completed under budget (Table 5-2). With PARTF funds, the Division continues to address a lengthy backlog of construction and renovation projects in the state parks system. However, approximately $417.6 million is required to meet all of the needs for new construction and renovation for the state parks system.

Table 5-2 North Carolina Parks and Recreation Trust Fund
State Park Capital Projects for Fiscal Year 2010-11

State Park Unit	Description	Costs ($)
Chimney Rock State Park	Elevator and Sky Lounge Improvements	1,414,900
Chimney Rock State Park	Trail and Egress Improvements	900,000
Cliffs of the Neuse State Park	Dam Repair	134,000
Crowders Mountain State Park	Family and Group Camp Improvements	664,000
Crowders Mountain State Park	Visitor's Center and Campground Parking Lot Expansion	172,000
Deep River State Trail	Justice Tract-Paddle Access	50,000
Haw River State Park	Church Street Section Interim Development	141,648
Lake James State Park	Mountain Bike Trails	225,000
Jordan Lake Recreation Area	Repair and Upgrade to Water System	608,341
Mayo River State Park	Dam Repair	370,000
Medoc Mountain State Park	Mountain bike Trails	225,000
Morrow Mountain State Park	Group Camp Improvements	40,000
Morrow Mountain State Park	Mountain Overlook Toilet Building	450,000
Park System	Major Maintenance Funds	1,500,000
Park System	Demolition Funds	200,000
Park System	Trail Maintenance	500,000
Park System	Exhibit Maintenance Repair Funds	50,000
Pilot Mountain State Park	Water System Improvements	200,000
South Mountains State Park	Renovate Primitive Campground at the Jacob Fork Section	650,000
TOTAL		**$ 8,494,889**

Examples of Capital Improvement Projects for the State Parks System Funded by NC Parks and Recreation Trust Fund

Rutherford County – Chimney Rock State Park

The Elevator and Sky Lounge Improvements project includes repairs to existing facilities as recommended by the 2007 Facilities Condition Assessment Plan (FCAP) provided by the Office of State Construction and the Department of Insurance. The scope of work includes the complete modernization of the elevator, structural improvements to the building, replacement of the elevator emergency exit stairway, code compliant egress through and out of the building, and ADA modifications to the restrooms and all portions of the building.

The Sky Lounge Improvements continue the repair/replacement efforts along the secondary means of egress to meet current building code. These require that Sky Lounge have two means of egress to the parking lot. One egress is via the existing outside trail and stairs. This route does not meet current building code. Headroom is restricted by overhanging rocks, portions of the route exceed maximum vertical rise, and the handrails do not comply with code. This project has been broken into three phases that will complete the renovation over three winter seasons to minimize visitor disturbance during peak visitation. The new code-compliant stairs will be a series of steel structures with wooden decks. The new stairs will closely follow the existing alignment with minor deviations to meet code requirements. The total vertical elevation change is approximately 250 feet which includes 880 feet of trail structures and paths.

Wayne County – Cliffs of the Neuse State park

In March 2009, a sink hole formed on the dam embankment at Cliffs of the Neuse State Park. The sink hole was at the valve and associated manhole for the reservoir drain spillway located on the downstream side of the dam embankment. Due to the emergency nature of the pipe failure, a temporary coffer dam was installed at the upstream end of the pipe that completely blocked water from entering the drain spillway. The NC Dam Safety Law requires this dam to have a functioning reservoir drain system. The scope of work includes the final design and construction of approximately 400 linear feet of a reservoir drain spillway system and abandonment of the existing aging reservoir drain system. All attempts will be made to execute construction work during the off-season to minimize interruption of services to visitors, particularly at the revenue-producing swim beach at Cliffs of the Neuse.

5.3 Operating Expenses Associated with State Park Projects

In allocating PARTF funds to the state parks system, the Parks and Recreation Authority considered the operating expenses that may be associated with the projects (G.S. 113-44.15(b3)). The Division of Parks and Recreation estimated these costs and presented them for the board's consideration when the projects were proposed for funding. The estimated costs are based on conceptual plans for each project. Detailed operating expenses associated with each project will be determined with the final design plans are available.

The following section presents the anticipated minimum and optimum operating expenses associated with seven capital improvement projects approved. No additional operating costs are anticipated for the state park projects that were approved during the year, but are not included in the section.

Crowders Mountain State Park - Family and Group Camp Improvements - The project includes vault toilet facilities and up to four new group camp sites.

Associated Operating Expenses:
- Minimum - One-time equipment needs of $1,100 and a part-time general utility worker for the primitive and group campsites; approximately $23,000 annually.
- Optimum - one-time equipment needs of $30,000 and an additional park ranger; approximately $87,000 annually.

Deep River State Trail - Justice Tract - Paddle Access / Interim Development – The project includes a day use area with gravel access road (approximately one mile), a gravel parking area, a vault toilet, and paddle access to the Deep River.

Associated Operating Expenses:
- Minimum - One-time equipment needs of $1,100 and a part-time general utility worker for the access area; approximately $23,000 annually.
- Optimum - one-time equipment needs of $37,000 and an additional park ranger; approximately $87,000 annually.

Haw River State Park - Church Street Section Interim Development - The project includes approximately 3/4 of a mile of a new paved entrance road from Church Street, a trail head, toilet facilities, and approximately three miles of natural surface trails.

Associated Operating Expenses:
- Minimum - One-time equipment needs of $43,000, a part-time general utility worker, and a park ranger; approximately $79,000 annually.
- Optimum - one-time equipment needs of $134,000 and an additional maintenance mechanic; approximately $127,000 annually.

Lake James State Park - Mountain Bike Trails - The project includes up to ten miles of single track mountain bike trails, bridges, and a parking area.

Associated Operating Expenses:
- Minimum - One-time equipment needs of $26,000, a maintenance mechanic; approximately $59,000 annually.
- Optimum - one-time equipment needs of $27,000 and an additional part-time general utility worker approximately $67,000 annually.

Medoc Mountain State Park - Mountain Bike Trails - The project includes to ten miles of single track mountain bike trails, bridges, and a parking area.

Associated Operating Expenses:
- Minimum - One-time equipment needs of $26,000, a maintenance mechanic; approximately $59,000 annually.
- Optimum - one-time equipment needs of $27,000 and an additional part-time general utility worker approximately $67,000 annually.

Morrow Mountain State Park - Group Camp Improvements – The project includes up to six new group camp sites, a vault toilet, and some minor road improvements.

Associated Operating Expenses:
- Minimum - One-time equipment needs of $1,100 and a part-time general utility worker for the primitive and group campsites; approximately $23,000 annually.
- Optimum - one-time equipment needs of $30,000 and an additional park ranger; approximately $87,000 annually.

South Mountains State Park - Renovate Primitive Campground at the Jacob Fork Section – The project includes eight new camp sites, a shower house, water and electrical service improvements, minor road improvements, and a septic system.

Associated Operating Expenses:
- Minimum - One-time equipment needs of $2,800 and a part-time general utility worker for the new campsites and shower house; approximately $25,000 annually.
- Optimum - one-time equipment needs of $35,000 and an additional park ranger; approximately $89,000 annually.

5.4 Repayment of COPs Indebtedness

Beginning in 2005, legislation approved by the General Assembly and Governor authorized the issuance of special indebtedness using certificates of participation (COPs) for land acquisition and capital improvements in the state parks system. The Parks and Recreation Authority may allocate up to 50 percent of the portion of the PARTF revenue dedicated for projects in state parks to repay the debt. This year's principal plus interest payment for COPs indebtedness was $7,224,714, including $5.6 million for state park projects.

Pursuant to Session Law 2007-323, the Parks and Recreation Authority approved the repayment of up to $20 million for projects approved under the Waterfront Access and Marine Industry (WAMI) Fund from the state parks portion of PARTF. Repayment of the WAMI project funds during the past year totaled $1.6 million.

6.0 Public Beach and Coastal Waterfront Program

6.1 *Program Description*

North Carolina's Public Beach and Coastal Waterfront Access Program was established by the General Assembly in 1981. In fiscal year 1996-97, the program began receiving 5 percent of the revenues from the Parks and Recreation Trust Fund. The program's enabling legislation (GS 113A-134.1) states that public interest would be served by providing increased access to coastal waters, public parking facilities, or other related public uses.

The program provides matching grants to local governments for low-cost capital projects designed to improve pedestrian access to the state's beaches and waterways. The program, administered by the Division of Coastal Management (DCM), offers matching grant funds to local governments throughout the 20 coastal counties. Since 1981, over 300 public access sites have been acquired, constructed or improved at a cost of over $36 million in grant funds. The majority of the projects are managed by local governments who are responsible for construction, operation and long-term maintenance of the facilities. Beginning in 2009, after program rule changes, the program also began making some awards to other state agencies in a partnering effort to enhance public access needs. While most of the early projects were located along the oceanfront, more and more projects are now designed to improve access to estuarine shorelines, coastal rivers, and urban waterfronts.

The Division of Coastal Management sends pre-application requests for proposals (RFPs) to local governments in the 20 coastal counties usually in the fall of every year. Unfortunately due to delays in deposits and the carryover of projects prioritized for funding from the last cycle (2009/2010), pre-application requests for the 2010/2011 cycle were delayed. Grant recipients have eighteen months to complete their projects. However, extensions are granted for un-foreseen events and delays such as hurricanes. The maximum life of a contract with extensions is three (3) years.

The division uses criteria developed by the Coastal Resources Commission to select grant recipients. Local governments are required to match from 10 percent to 25 percent of the project costs depending on whether the request is for acquisition of land or improvements, as well as the communities' economic status.

The required match may include Federal and other State funds to be used as the local government cash contribution provided such funds are not already being used as matching funds for other state and federal programs. Minimum match requirements are based on the economic status of the local government per the North Carolina Department of Commerce's Tier designations, as outlined by the Lee Act (G.S. 105-129.3). Counties designated as Tier 1 and the municipalities located within them are considered economically distressed.

6.2 *Types of Projects Funded*

Communities can apply for five different types of water access sites: local, neighborhood, regional, multi-regional and urban waterfront redevelopment projects.

- Local access sites include public access points, offering minimal, or no facilities. Pedestrians who reside within a few hundred yards of the site primarily use them. Generally, these access ways are a minimum of ten feet in width providing only a dune crossover or pier. Vehicle parking is generally not available at these access sites. Bicycle racks may be provided as well as litter receptacles and access signs.

- Neighborhood access sites are public access areas offering parking, usually for five to 25 vehicles, a dune crossover or pier, litter receptacles and public access signs. Such accesses are typically 40 to 60 feet in width and are primarily used by individuals within the immediate subdivision or vicinity of the site. Restroom facilities may be installed.

- Regional access sites serve the public throughout an island or community including day visitors. These sites normally provide parking for 25 to 80 vehicles, restrooms, a dune crossover, pier, foot showers, litter receptacles, and public access signs. Where possible, one-half acre of open space in addition to all required setback areas should be provided for buffering, day use, nature study or similar purposes.

- Multi-regional access sites are generally larger than regional accessways but smaller than state parks. Multi-regional facilities provide parking for 80 to 200 cars, restrooms with indoor showers and changing rooms, and concession.

- Urban waterfront redevelopment projects improve public access to urban waterfronts. Such projects include the establishment or rehabilitation of boardwalk areas, shoreline stabilization measures such as the installation or rehabilitation of bulkheads, and the placement or removal of pilings for the purpose of public safety and/or increased access and use of the urban waterfront.

Additionally, as part of rule changes that took effect in 2007, boat ramps and motorized boating facilities may be included as part of any of the above types of access provided the pedestrian access is also part of the project.

6.3 *PARTF Revenues and Awards Based on 2010-2011 Fiscal Year Deposits*

The amount transferred from the PARTF fund to DCM during fiscal year 2010-2011 was $1,205,192. Table 6-1 provides the list of local governments that have received Governor's award letters that are prioritized to receive funding using funds available through the four quarter deposit of 2010-2011 funds.

Table 6-1 Communities Prioritized for 2011-2012 Funding Based on 2010-2011 Deposits and Other Available Funds

Local Government	Project Description	Total Project Cost	*Grant Amount*
Town of Belhaven	Pantego Waterfront Park: **Acquisition** portion of 8.96 ac. Between W. Main St. and Pungo Creek.	$3,600,000	*$200,000*
Carteret County	Scenic Byway **Acquisition**: 13 acre- HWY 70 at North River	$135,000	*$111,784*
Pine Knoll Shores	Dogwood Circle easement **Acquisition** of ¼ acre for parking for existing access site.	$162,552	*$138,169*
River Bend	Gull PT-Trent River: Canoe/Kayak Launch with restrooms & parking	$84,446	*$55,092*
City of Washington	Waterfront Promenade Restroom 35' from Pamlico River edge near W. Main and Gladden Streets	$268,488	*$200,000*
Town of Duck	Sound side Boardwalk Extension total about 1,800 ft. both north and south of the existing along Currituck Sound.	$617,402	*$179,760*
Town of Leland	Mill Creek Environmental Education Park Improvement - Parking & docks to existing water access park.	$106,666	*$79,999*
Carolina Beach	Dingy/kayak/canoe Launch at the Town's Marina on Myrtle Grove Sound.	$30,000	*$22,500*
Totals		**$5,004,554**	**$987,304**

Totals may be adjusted during the final contract process.

The above-prioritize for grant contracts will begin either the fall of 2011 or January 2012.

The current project list does not include any partnerships directly with other state agencies. The grant awards for two of the projects involving land acquisition are also being used for credit towards meeting the state's match required for the receipt of federal funds from the National Oceanic and Atmospheric Administration.

No PARTF funds are used for administrative costs associated with the grant program. The only non-award costs are funds used towards access site signs made by the State Division of Corrections. Signs are provided for new sites as well as existing which regularly require replacement due to weathering and storm events. Left over funds will be rolled over for the next years (2011-2012) cycle.

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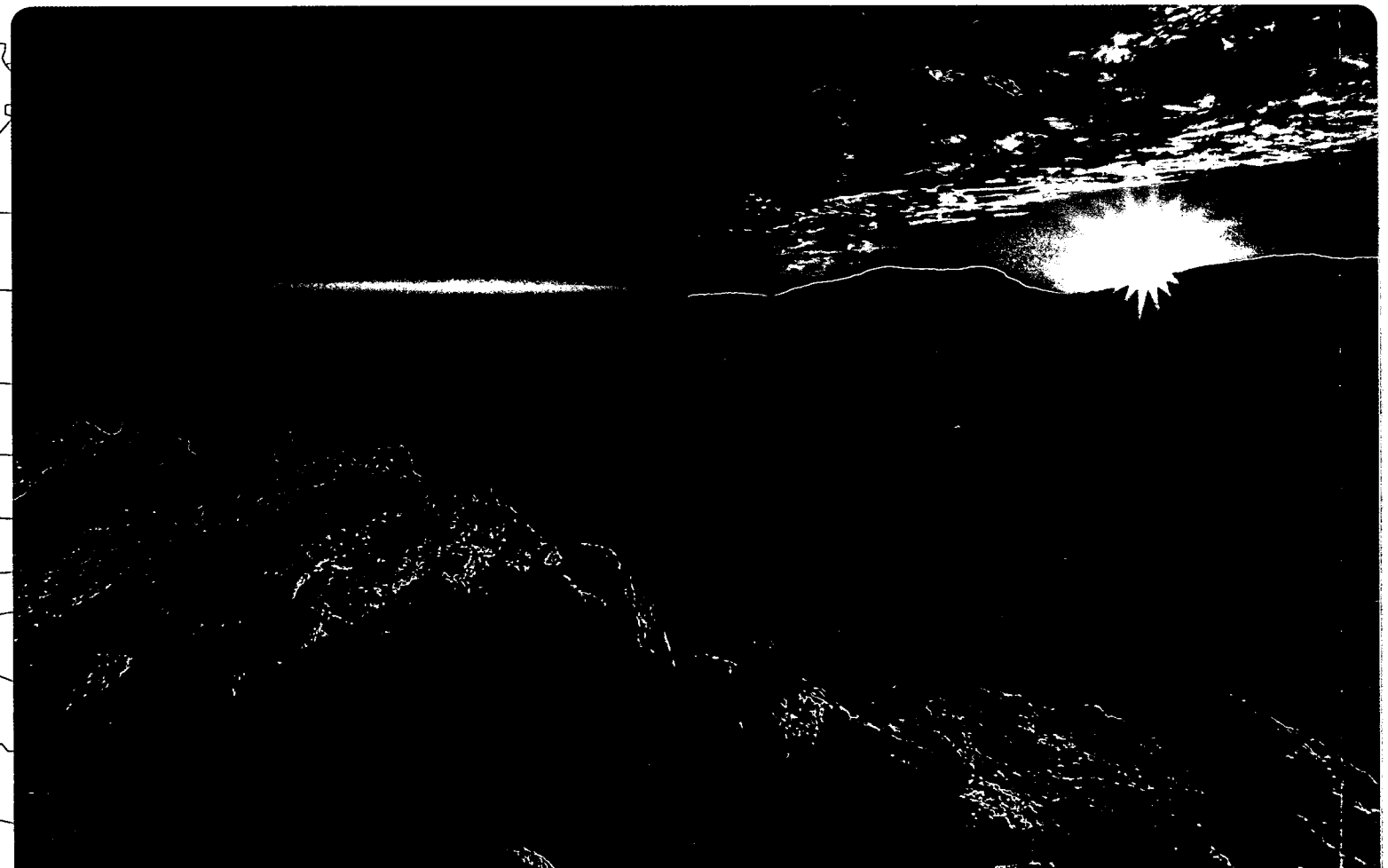
NORTH CAROLINA STATE PARKS

NORTH CAROLINA

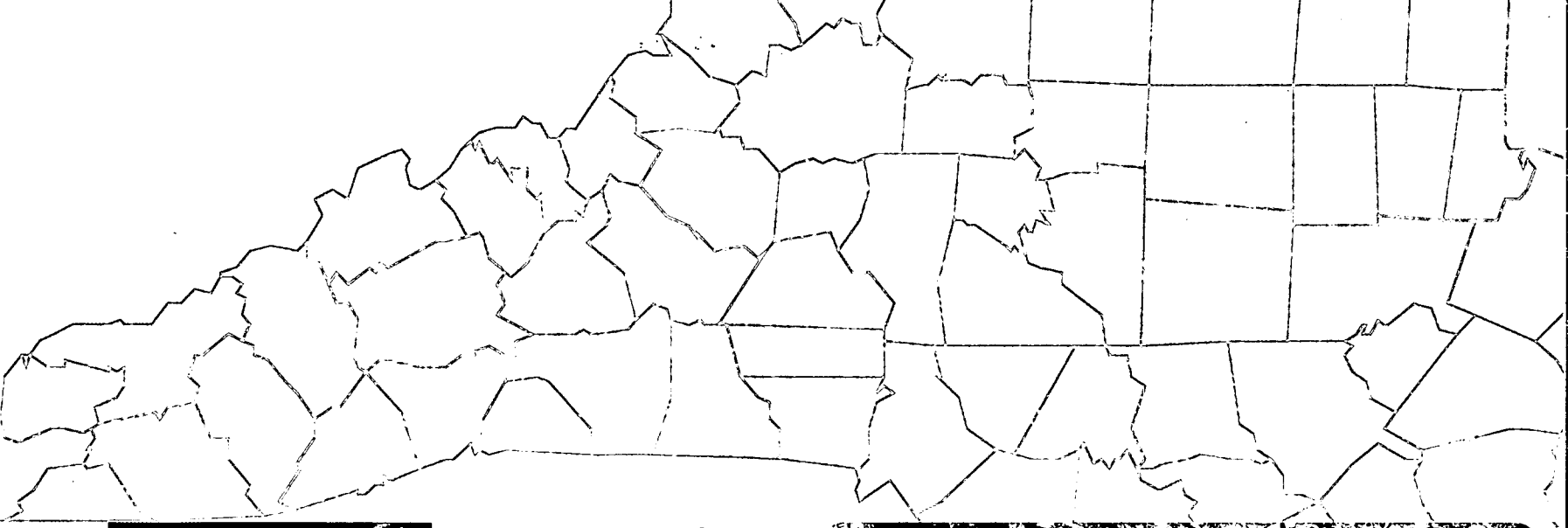
DIVISION OF PARKS AND RECREATION



2011 ANNUAL REPORT



GRANDFATHER MOUNTAIN STATE PARK 2009
BEAR PAW STATE NATURAL AREA 2008
YELLOW MOUNTAIN STATE NATURAL AREA
DEEP RIVER STATE TRAIL 2007
PINEOLA BOG STATE NATURAL AREA 2006
SUGAR MOUNTAIN BOG STATE NATURAL AREA
SANDY RUN SAVANNAS STATE NATURAL AREA
CARVERS CREEK STATE PARK 2005
CHIMNEY ROCK STATE PARK
MAYO RIVER STATE PARK 2003
HAW RIVER STATE PARK
LOWER HAW RIVER STATE NATURAL AREA
ELK KNOB STATE PARK 2002
BEECH CREEK BOG STATE NATURAL AREA
BULLHEAD MOUNTAIN STATE NATURAL AREA 2000
LEA ISLAND STATE NATURAL AREA
MOUNTAINS-TO-SEA STATE TRAIL
GORGES STATE PARK 1999
OCCONEECHEE MOUNTAIN STATE NATURAL AREA 1997
RUN HILL STATE NATURAL AREA 1995
LUMBER RIVER STATE PARK 1989
FRENCH BROAD RIVER STATE TRAIL 1987
LAKE JAMES STATE PARK
YADKIN RIVER STATE TRAIL
FORT FISHER STATE RECREATION AREA 1986
HORSEPASTURE STATE RIVER 1985
FALLS LAKE STATE RECREATION AREA 1982
JORDAN LAKE STATE RECREATION AREA 1981
BALDHEAD ISLAND STATE NATURAL AREA 1979
BAYTREE LAKE STATE PARK
SOUTH MOUNTAINS STATE PARK 1978
BUSHY LAKE STATE NATURAL AREA 1977
HEMLOCK BLUFFS STATE NATURAL AREA 1976
LAKE WACCAMAW STATE PARK
MASONBORO ISLAND STATE NATURAL AREA
MITCHELL MILL STATE NATURAL AREA
JOCKEY'S RIDGE STATE PARK 1975
NEW RIVER STATE PARK
LINVILLE STATE RIVER
DISMAL SWAMP STATE PARK 1974
GOOSE CREEK STATE PARK
CHOWAN SWAMP STATE NATURAL AREA 1973
CROWDERS MOUNTAIN STATE PARK
ENO RIVER STATE PARK
MERCHANTS MILLPOND STATE PARK
MEDOC MOUNTAIN STATE PARK
THEODORE ROOSEVELT STATE NATURAL AREA 1971
RAVEN ROCK STATE PARK 1970
CAROLINA BEACH STATE PARK 1969
STONE MOUNTAIN STATE PARK
PILOT MOUNTAIN STATE PARK 1968
WEYMOUTH WOODS STATE NATURAL AREA 1963
LAKE NORMAN STATE PARK 1962
HAMMOCKS BEACH STATE PARK 1961
MOUNT JEFFERSON STATE NATURAL AREA 1956
KERR LAKE STATE RECREATION AREA 1952
CLIFFS OF THE NEUSE STATE PARK 1945
WILLIAM B. UMSTEAD STATE PARK 1941
PETTIGREW STATE PARK 1939
JONES LAKE STATE PARK
SINGLETARY LAKE STATE PARK
HANGING ROCK STATE PARK 1935
MORROW MOUNTAIN STATE PARK
SALTERS LAKE 1929
WHITE LAKE
FORT MACON STATE PARK 1924
MOUNT MITCHELL STATE PARK 1916





The cover photo of sunrise over Moore's Knob at Hanging Rock State Park is generously provided by photographer Nick D'Amato of Durham. This year marks the 75th anniversary of this beloved state park that attracted more than a half million visitors in 2010. Citizens in Stokes County amassed the original 3,096 acres for the park, deeding the tract to the state in 1936. In anticipation of this, the Civilian Conservation Corps had begun constructing park facilities on the land a year earlier.

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MESSAGE FROM THE DIRECTOR



Lewis Ledford, Director of N.C. Division of Parks and Recreation



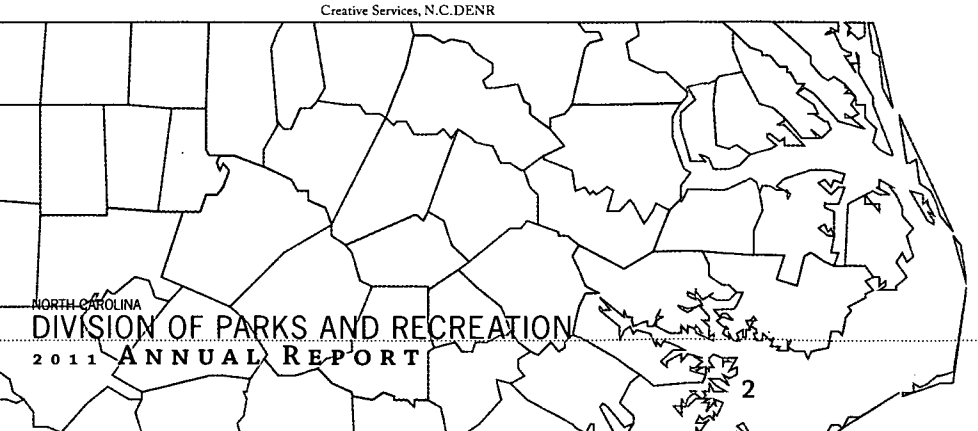
North Carolina has a deep-rooted tradition of protecting its stunning natural resources and making them accessible at low cost to citizens and visitors. The results of that tradition, which led to the acquisition of 46,340 acres during the past eight years, include healthier lifestyles, economic stimulus to communities where state parks are located and a strong conservation ethic.

During the past year, we also opened a wide variety of facilities, which include new campgrounds, trails, exhibits and visitor centers. You will be able to learn more about those and other efforts throughout this annual report.

Every visit to a state park is an opportunity for the entire family to learn and interact with natural and cultural history. The exhibits, visitor centers, trails and other amenities complement self-discovery and interpretive programs offered by our rangers and broaden the visitor experience.

Our new visitor centers provide a focal point for the park and a gathering place for visitors. The centers are places to learn about the state park and its natural resources. They offer an integrated exhibit hall, a teaching auditorium and classrooms.

An important part of the mission of state parks is to exemplify good stewardship of our natural resources. The LEED gold rating which we seek for all our large facilities exceeds



13

NORTH CAROLINA
NATURAL HERITAGE
TRUST FUND

Update for Environmental Review Commission

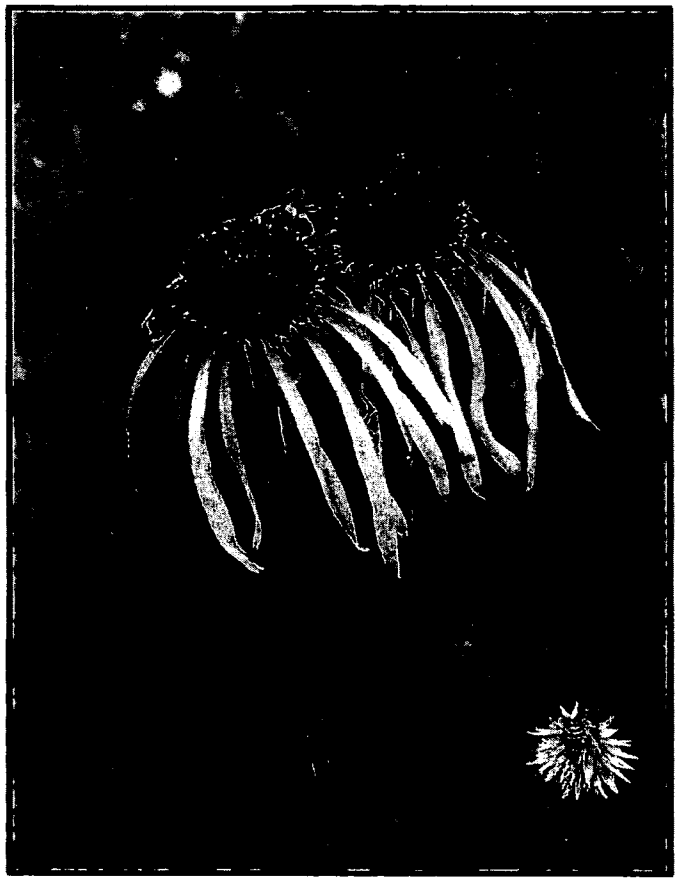
Lisa Riegel
Executive Director
(919) 707-8638

December 14, 2011

MISSION

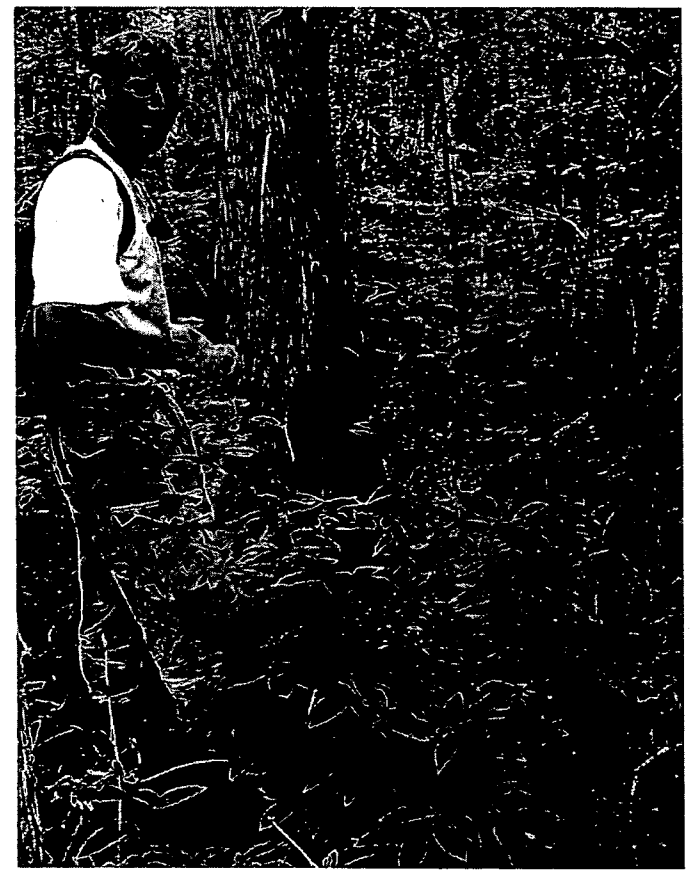
protect natural & cultural heritage lands

- Recreation, scientific, education, cultural and aesthetic purposes
- Additions to state parks, trails, forests, wildlife areas
- Historic properties program
- Other beneficial use and enjoyment by the public

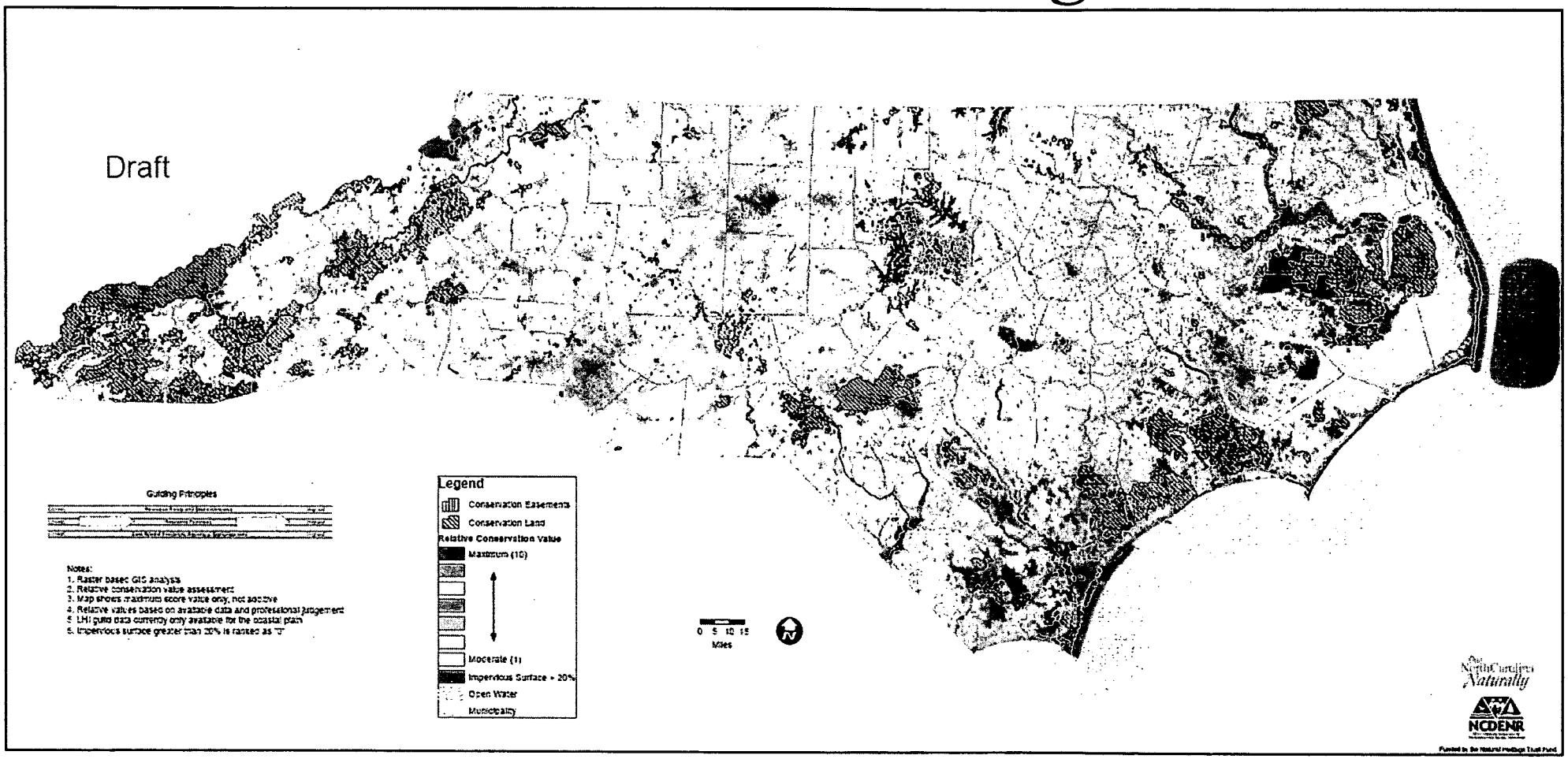


Natural Heritage Program

- ID most important natural areas in state
- 85 of 100 Counties complete; 6 ongoing
- Statewide Conservation Planning Tool (Map)



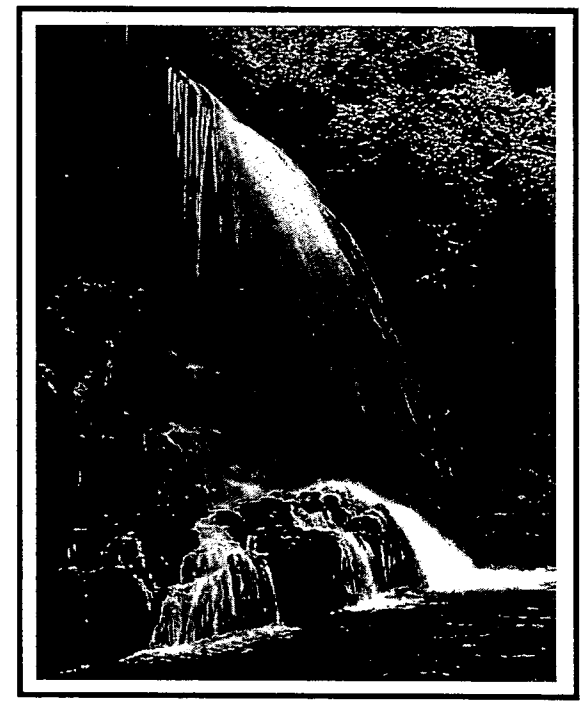
One NC *Naturally*
Conservation Planning Tool



Biodiversity / Wildlife Habitat Assessment

Program Overview

- Established 1987
- 12 member citizen board
- Accepts applications from
  4 state agencies: DENR,
  DoACS, DCR, WRC
- Awards - twice a year



2012 Board of Trustees

Governor Appointees

Charles E. Clement
Watauga County
1995-2016

Stephen W. Woody
Buncombe County
2010-2016

R. Michael Leonard
Forsyth County
1994-2012

Elizabeth D. Taft, Ph.D.
Pitt County
2002-2012

Senate Appointees

J. Robert Gordon, Chairman
Scotland County
2002-2014

Greer Cawood
Forsyth County
2012-2018

Sam P. Douglas
Wilson County
2008-2013

Lois McIver Winstead
Person County
2006-2018

House Appointees

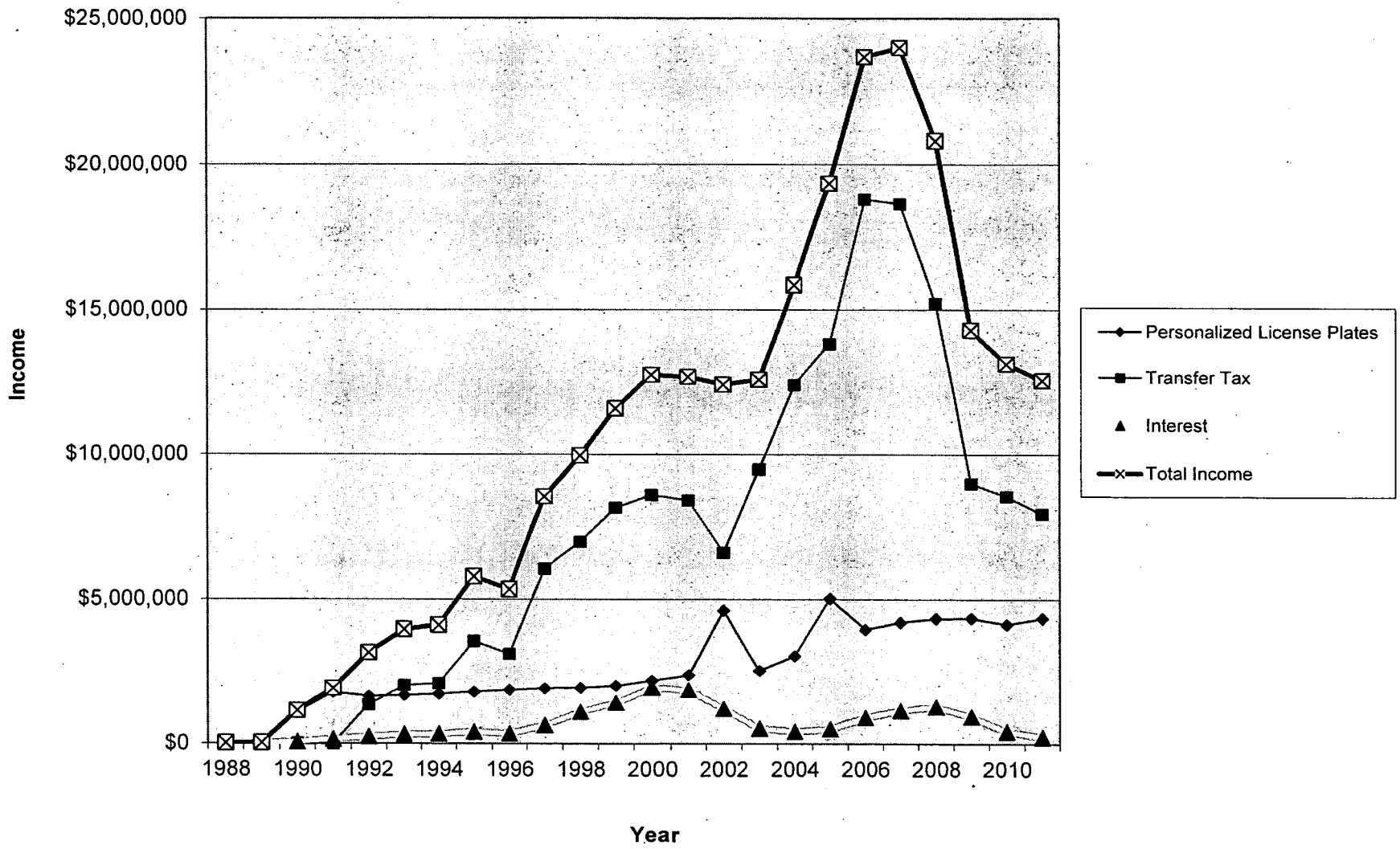
Alan D. Briggs
Wake County
2000-2018

Alan S. Weakley, Ph.D.
Chatham County
2002-2014

Troy Kickler
Lee County
2012-2018

Elizabeth "Robin" Jacobs
Orange County
2010-2016

NHTF Income – by Fiscal Year

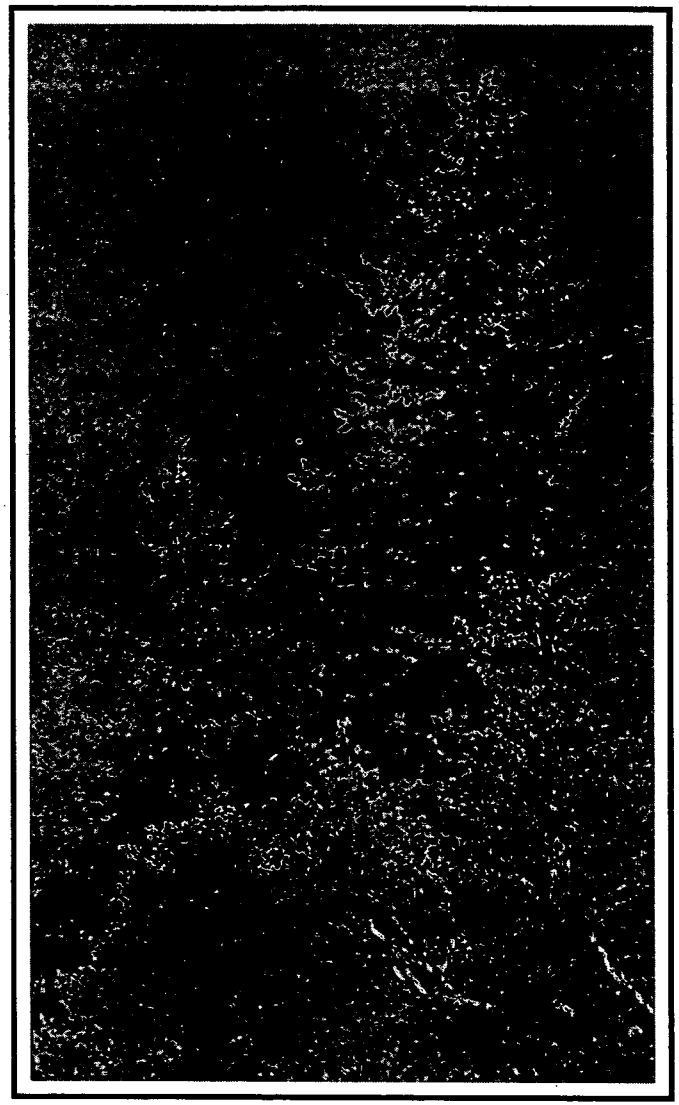


NHTF 2011 Fiscal Year Income

Real Estate Tax	$ 7,933,140
License Plate Fee	$ 4,363,349
Interest	$ 225,961
Total	**$12,522,450**

2011 Awards

- 19 Projects
- 3,353 Acres
- $9,041,889



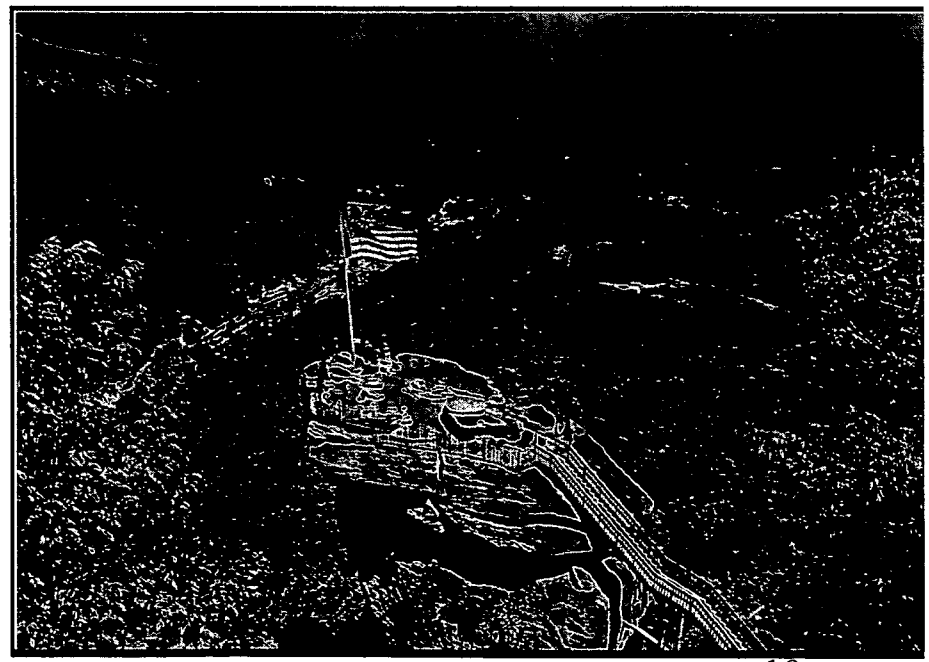
Note: $1,725,961 ***transferred to General Fund***

2011-2012 Budget Impacts

$12 million est. income

- $8 million diversion to General Fund
- $0.8 Fund Shift Positions (9.5 FTE)
- $4.4 COPS repayment

= $ 1.2 million deficit



Moving Forward

- Maximize federal matching monies and leverage private donations
- Take advantage of bargain sales
- Potential Economic Impact Key (e.g., military buffers, tourism)
- Prioritization and coordination with other Trust Funds
- Slow down, don't stop



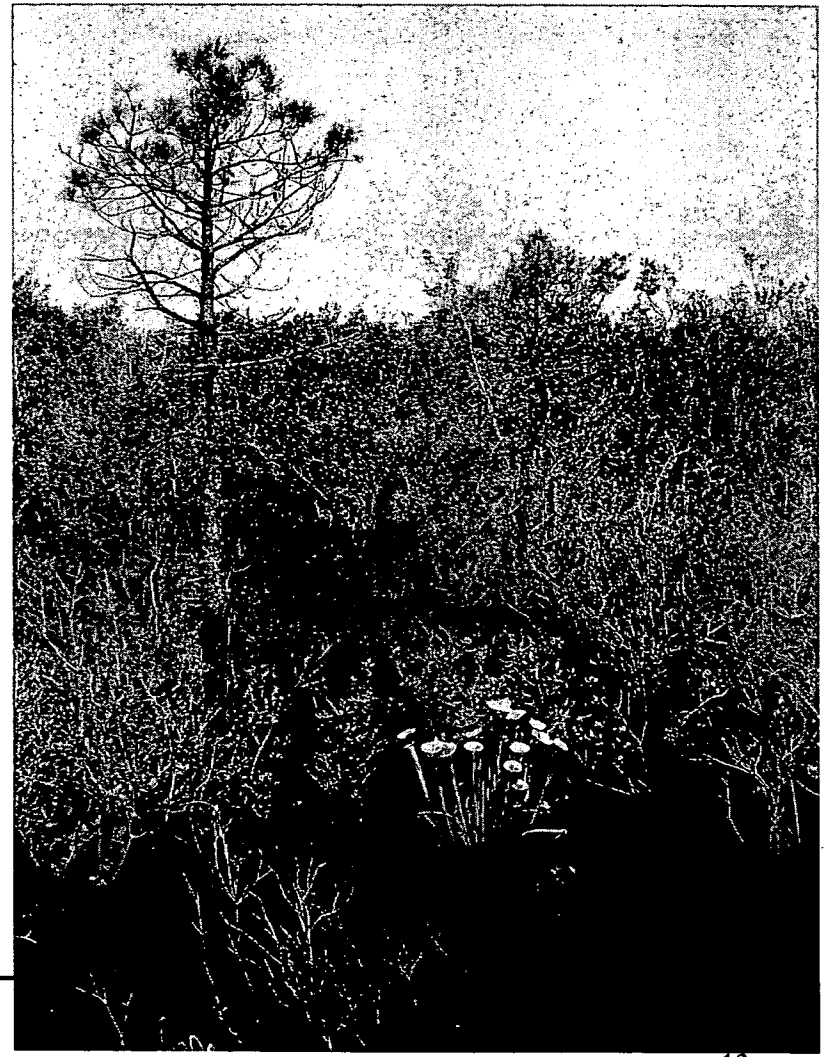
2011 Projects – Highlights

- WRC
  - Sleepy Creek
  - King Tract, Uwharries
- DCR
  - Bentonville
  - OMVT
- PCP
  - Corbett/Boiling Spring Lakes
  - DuPont State Forest
- DENR
  - Arnette Tract, Zoo
  - Yellow Mountain

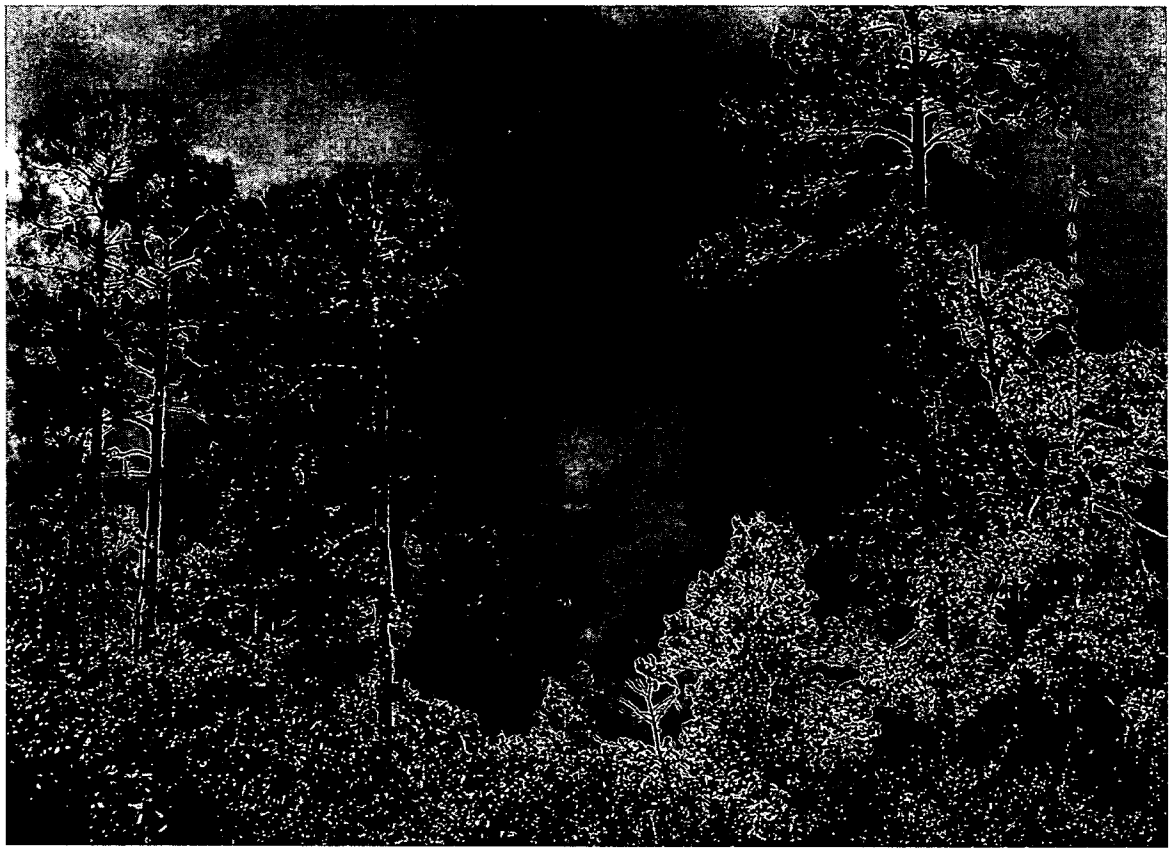
Corbett Tract – Addition to Boiling Spring Lakes Plant Preserve

Nationally Significant site that is home to one of the best remaining Venus Flytrap populations. Protects extensive wetlands, many rare plants, as well as unusual vegetation types

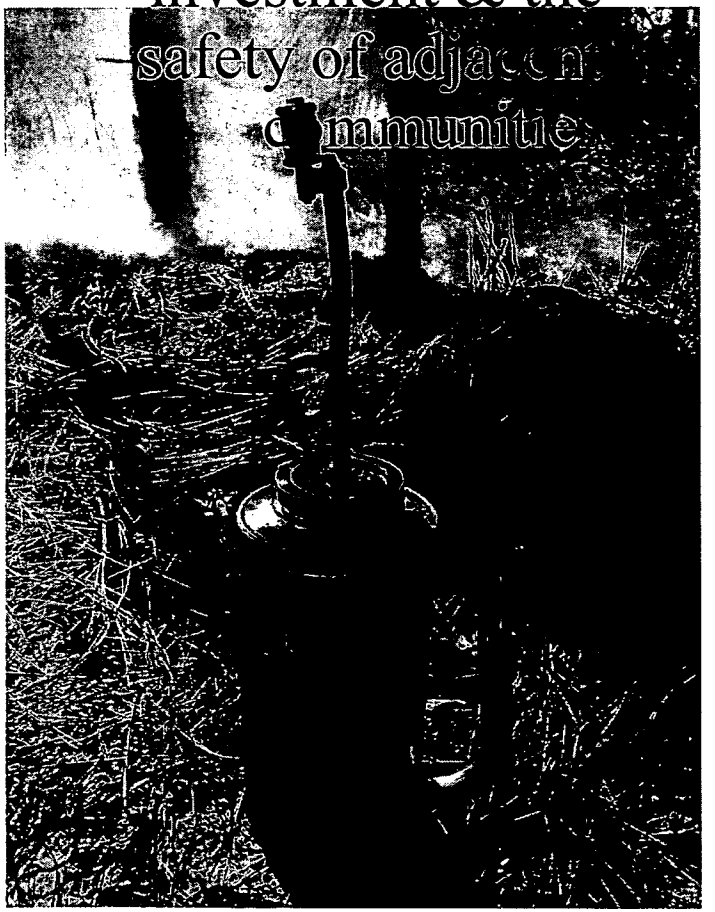




Fire-adapted vegetation & rare plants the essence of what the Preserve is intended to "protect"

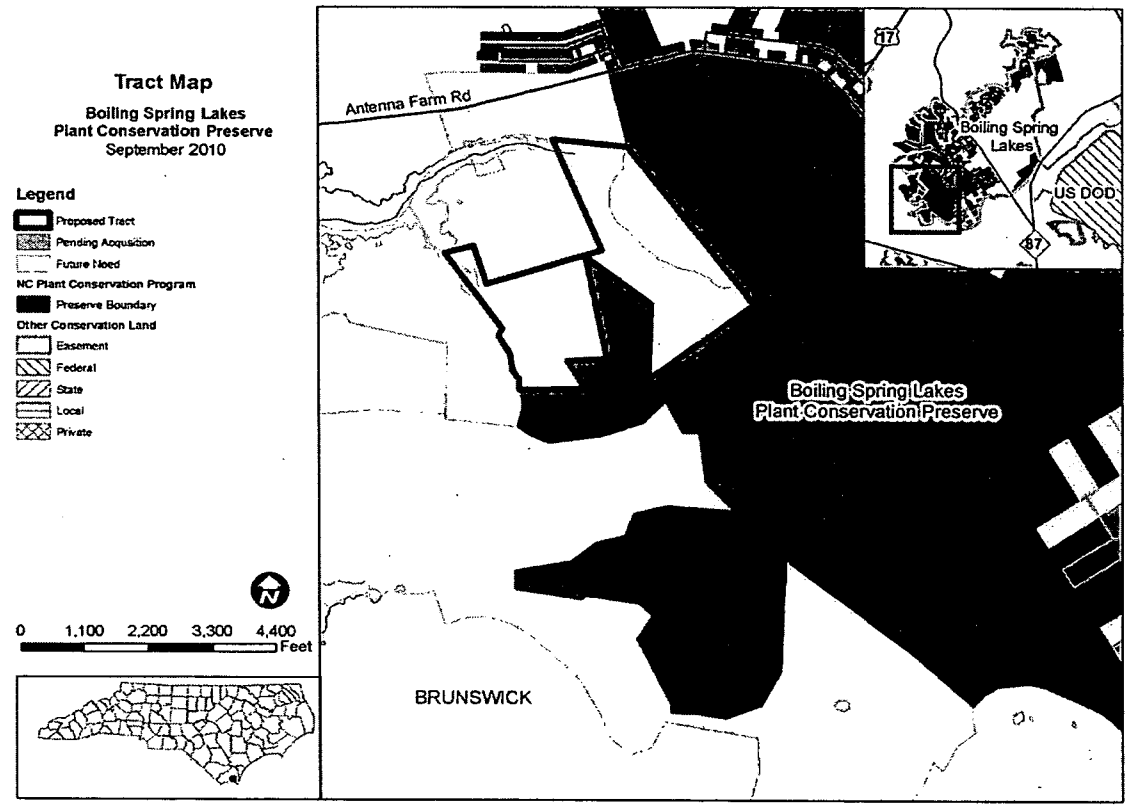


Fire management protects the conservation investment & the safety of adjacent communities



Consolidated ownership facilitates effective & efficient management

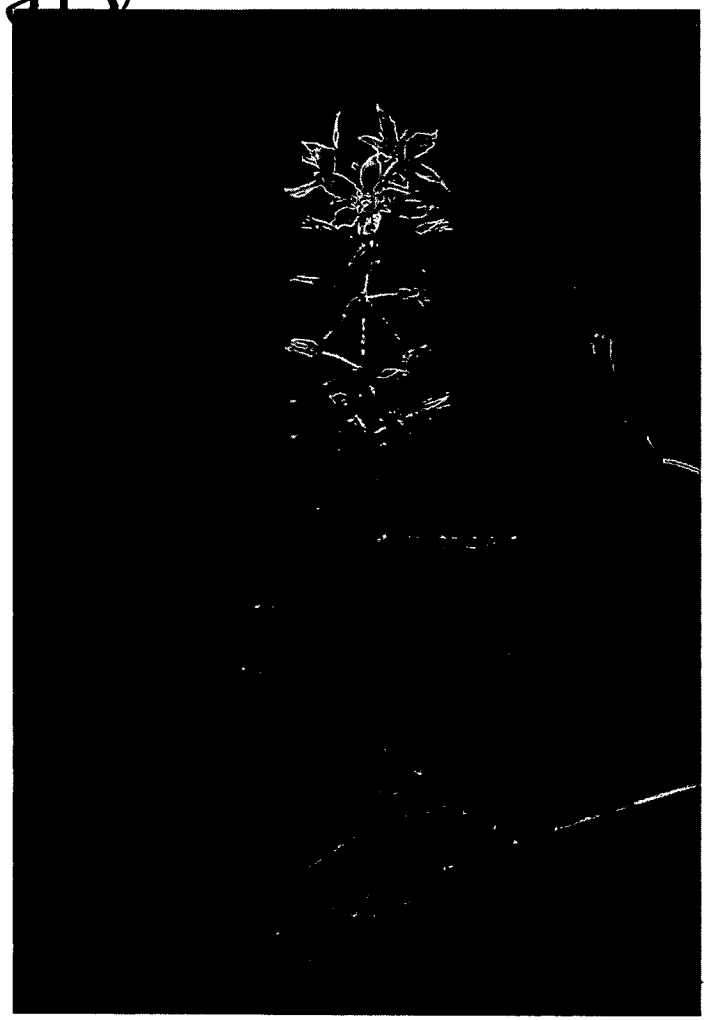
On this map the green is current Preserve ownership; Corbett is outlined is pink – note how this acquisition minimizes part of the awkward boundary



Corbett Tract Summary

COST/ACRE: $1,510/acre
ACREAGE: +/- 270 acres

Funding Breakdown	
NHTF	$243,464.00
Private	$114,000.00
Federal	$142,900.00
TOTAL COST:	$500,364.00

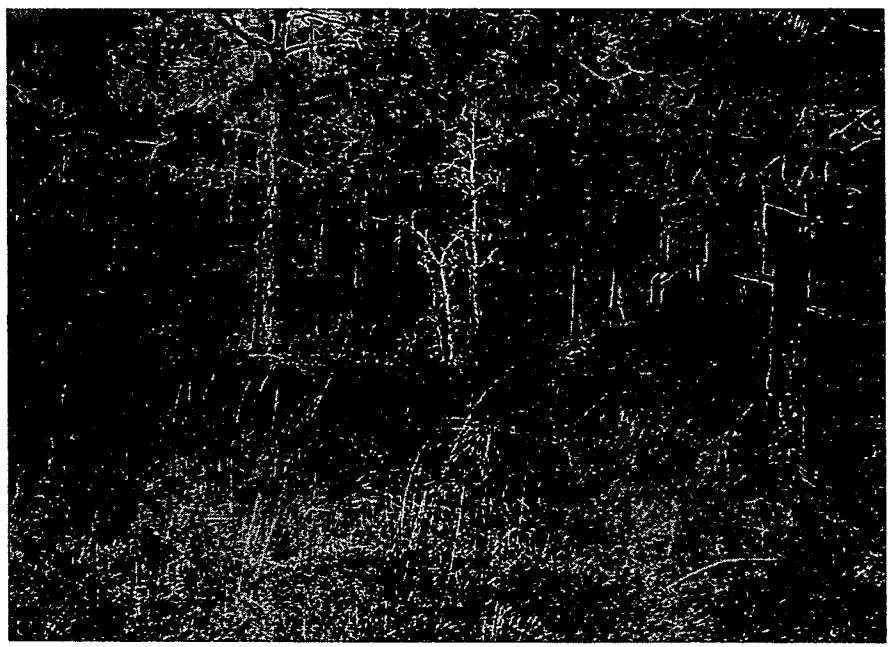


Rough Leaved Loosestrife

One of several endangered plants found on the tract

Partnership with Military

- **NHTF $1,069,907**
- **US Navy $1,012,381**
- **1615 acres**



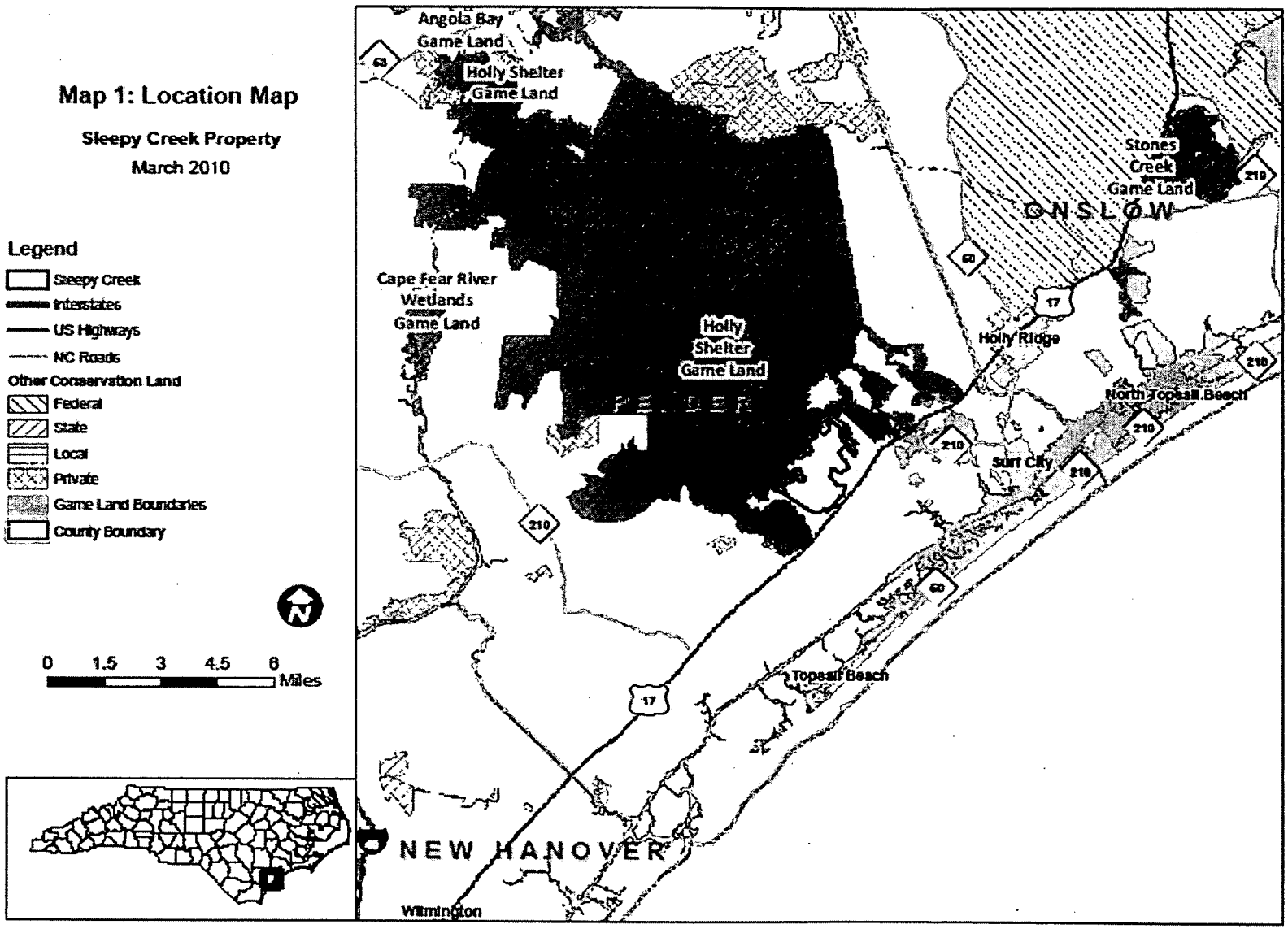
WRC:

- very high quality conservation area attached to the 65,000 acre Holly Shelter Game Land.
- Improve management - even up part of its southern boundary and prescribed burning, easier and less expensive.
- tract harbors Red-Cockaded Woodpeckers a federally listed endangered species.

USMC:

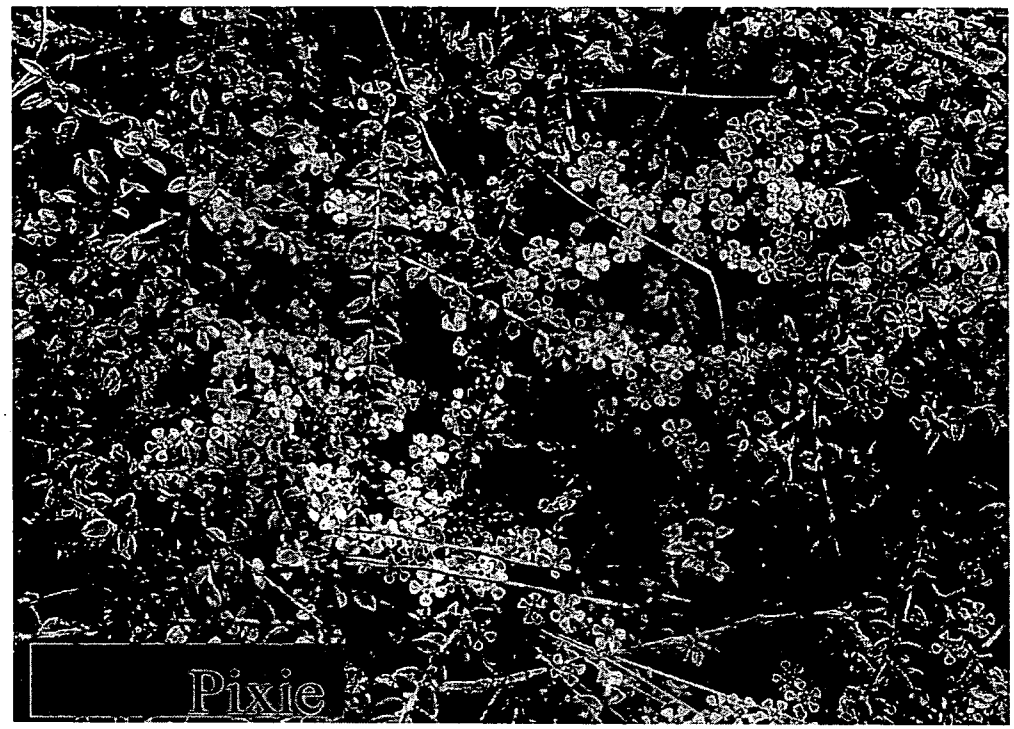
- Acquiring active RCW sites off base allows more flexibility with colonies on their base
- Buffer Camp Lejeune from residential development

SLEEPY CREEK – Holly Shelter

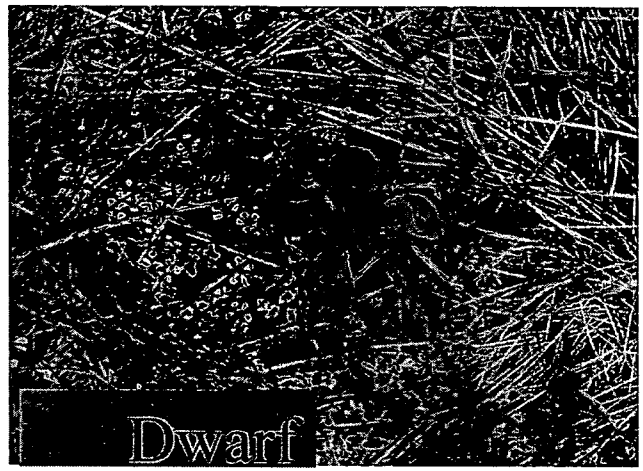


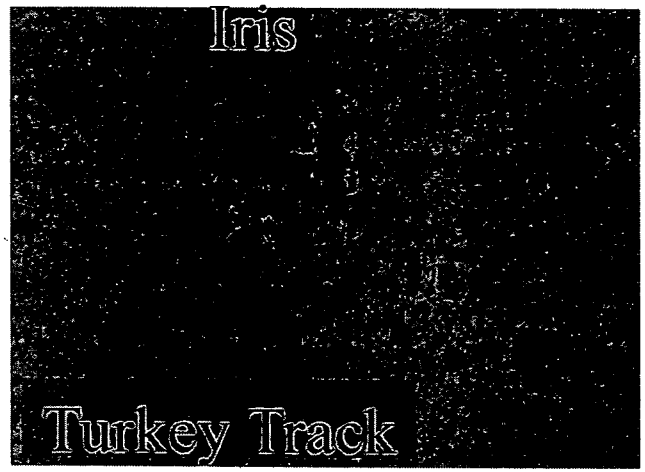
SLEEPY CREEK ADDITION:

Contributes to conservation of terrestrial wildlife, including deer, wild turkey, mourning dove, bobcat, red and gray fox, black bear, cottontail rabbit and raccoon.



Moss





Arnett Branch Longleaf Pine Forest



Preserving a Rare Tract of Old Growth Piedmont Longleaf Pine in Montgomery County, North Carolina

Arnett Branch Longleaf Pine Forest

The Zoo is committed to the conservation of the world's wildlife and wild places, including some special places in North Carolina. This is one of them.

With this project the NC Zoo and its partner, the LandTrust for Central North Carolina, will:

•Protect a Natural Heritage Area of Regional significance, a 117-acre tract of old Piedmont longleaf pine forest, with trees up to 200+ years old

• Protect headwater streams, to help maintain high water quality and flow in the West Fork of Little River, Nationally Significant Aquatic Habitat and home to several rare and endangered mussels

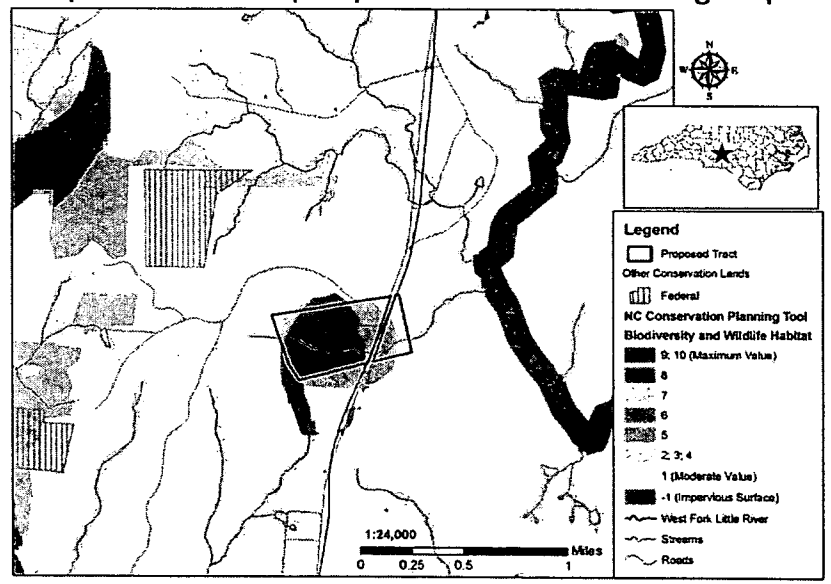
• Provide breeding habitat for forest interior bird species and neotropical migrants

• Provide a seed source for Piedmont ecotype longleaf pine for ongoing restoration

• Expand Zoo's environmental education programs

• Create trails with potential links to the Uwharrie Trail

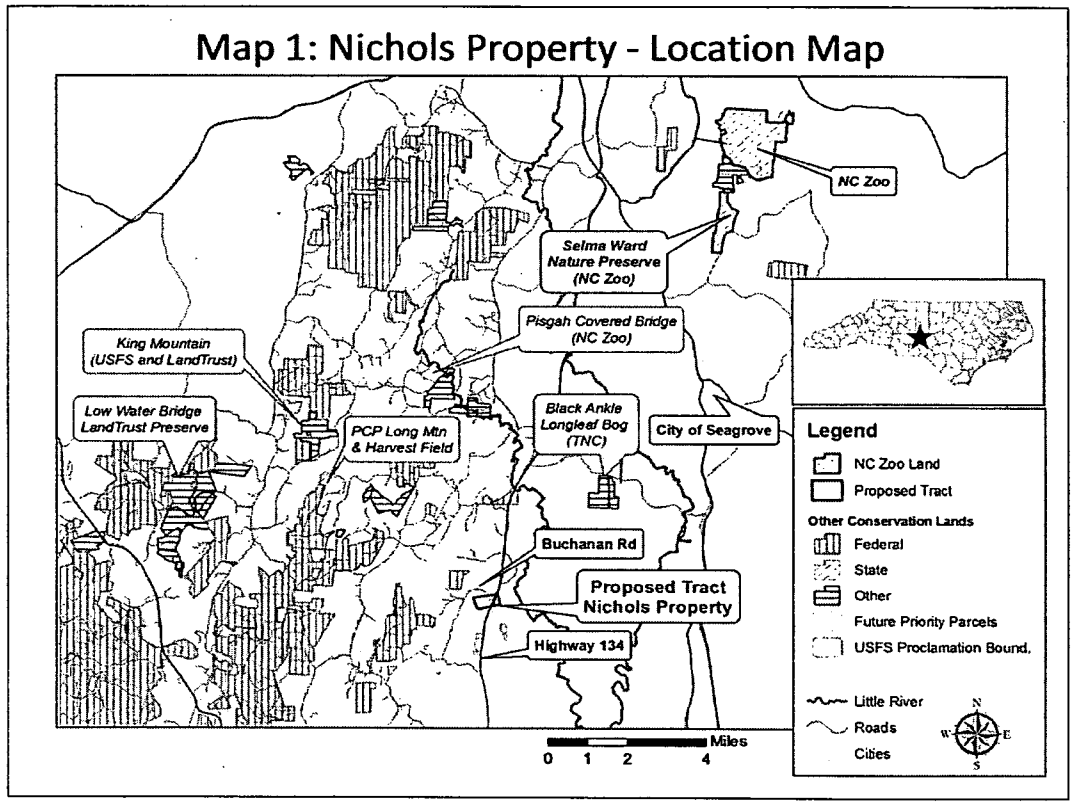
Map 3: Nichols Property - Conservation Planning Map



Protection of Arnett Branch Longleaf Pine Forest Preserves Habitat for Priority Animal Species



Kentucky Warbler
(USFWS photo)



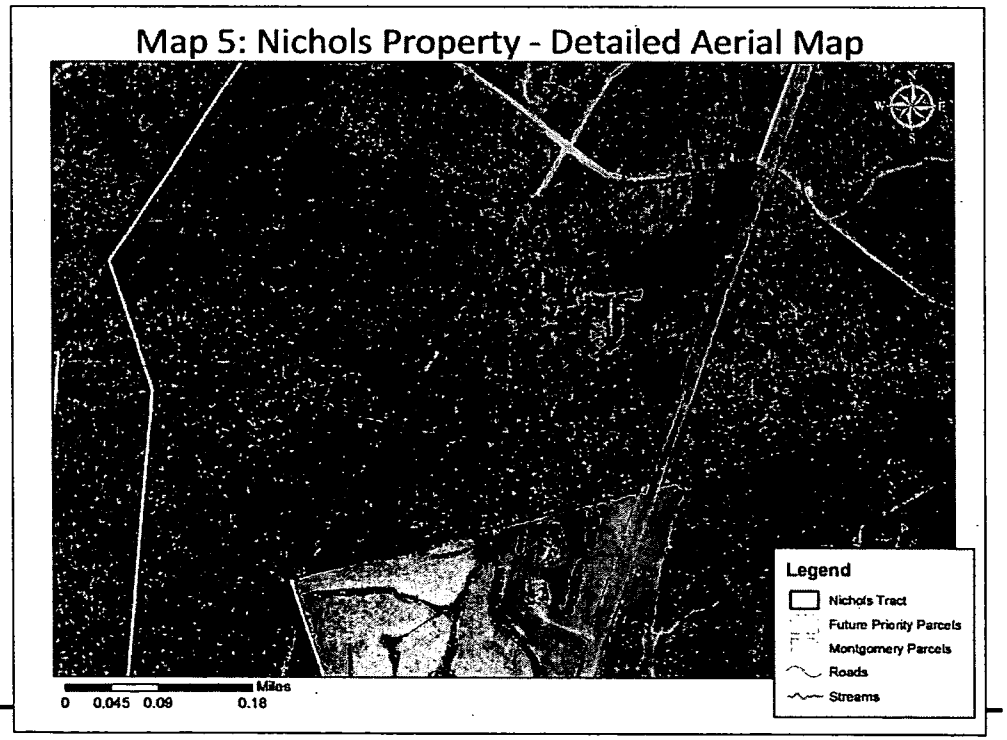
This forest provides breeding habitat for several priority species for conservation, including neotropical migrant and forest interior bird species like Kentucky warbler and ovenbird, and reptiles such as the timber rattlesnake. It also helps expand conserved lands in the area.



Arnett Branch Longleaf Pine Forest

Funding for Phase I:

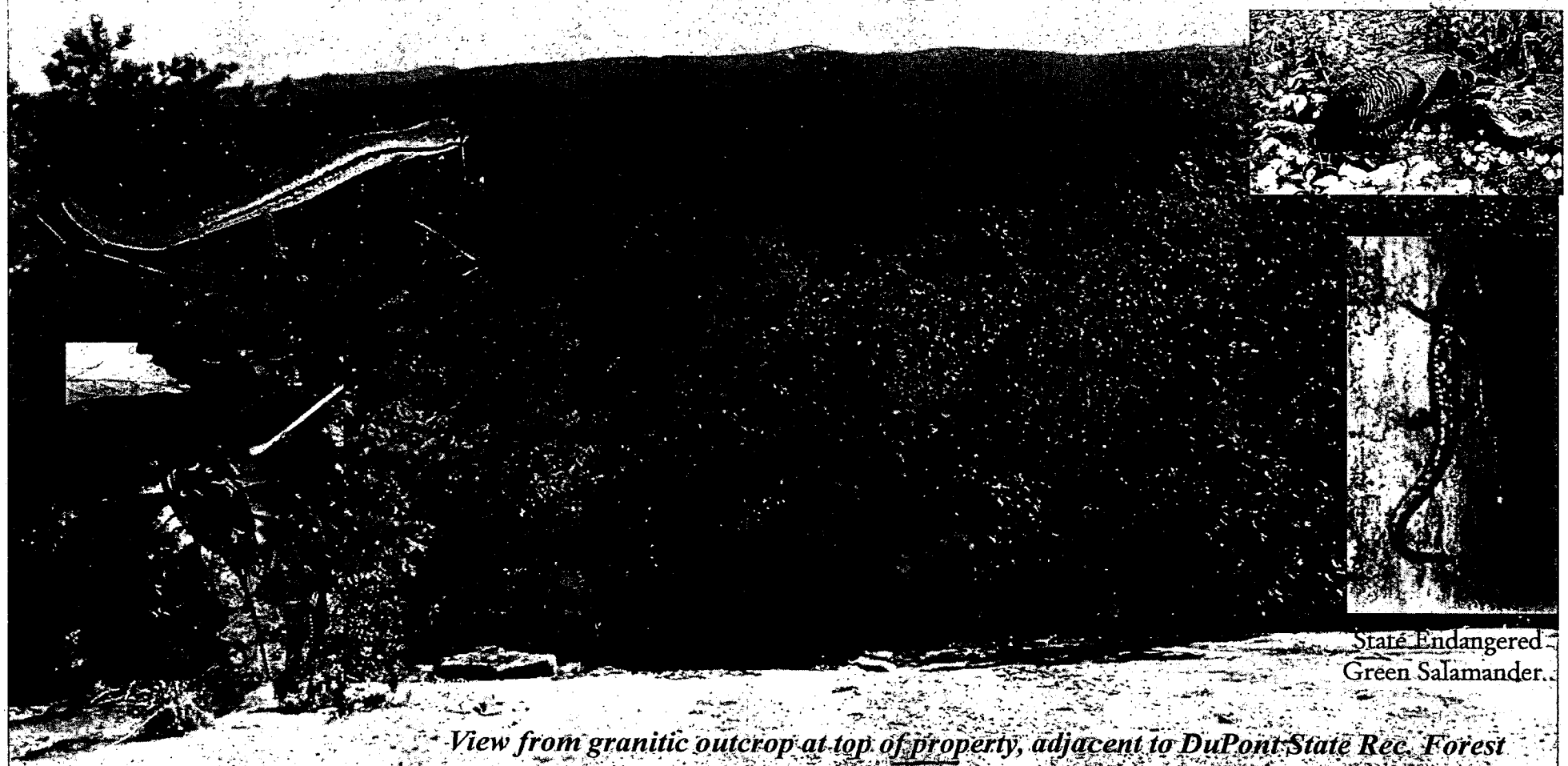
- **Private donor $50,000**
- **Land Trust for Central NC - $11,800**
- **NC Zoo - $2,000**
- **NHTF - $282,325**
- **Funds Needed $123,875 (phase II)**
- **Total project cost: $470,000**



DUPONT STATE FOREST

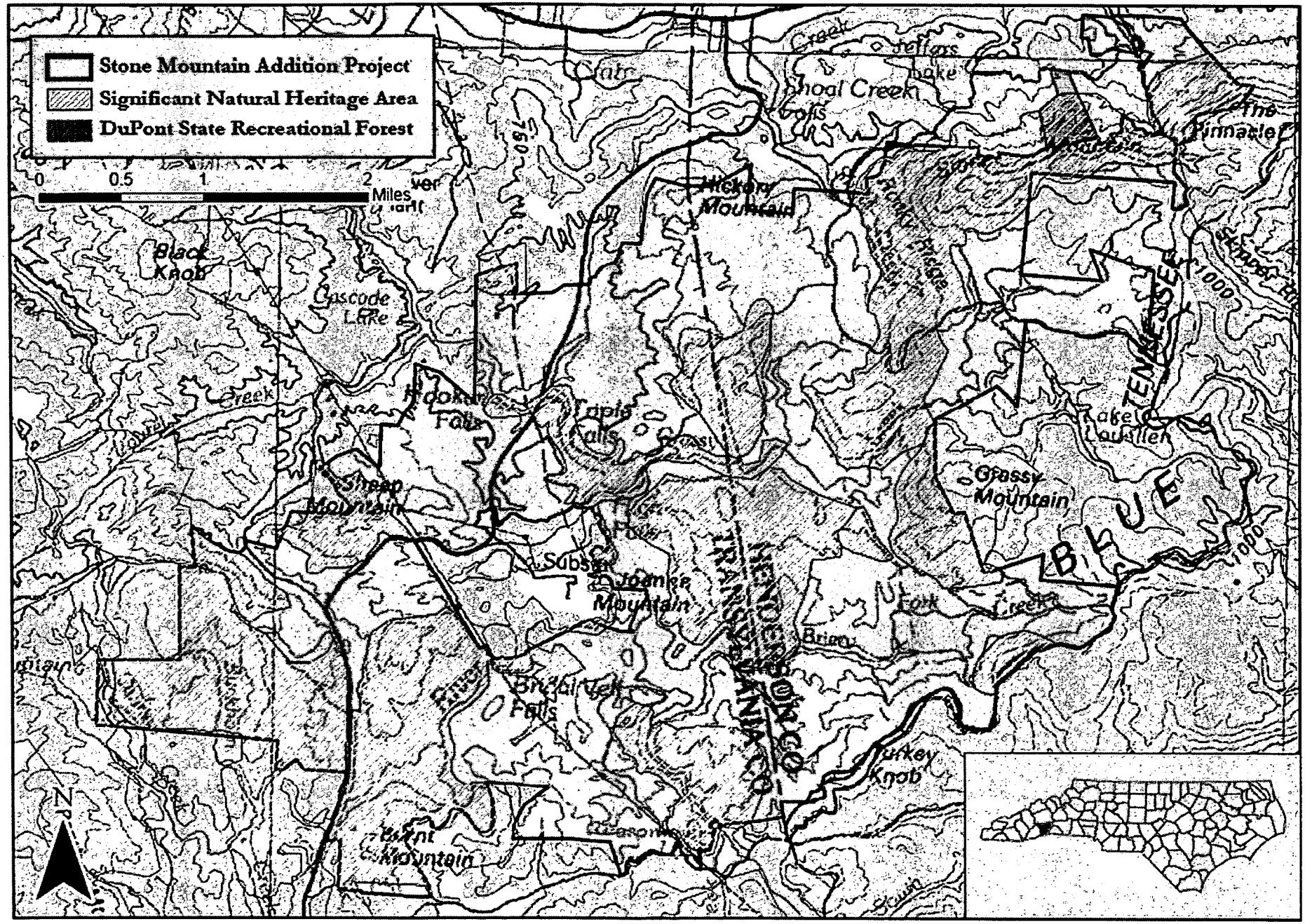
Stone Mountain Addition Makes Conservation $ense

1. **Public Access & Wildlife Habitat**
2. **Owner selling to State for 45% below appraised fair market value.**
3. **Private Conservation Donor agreed to contribute 50% of the final purchase price– *net savings to the State of over 70%* of appraised fair market value.**

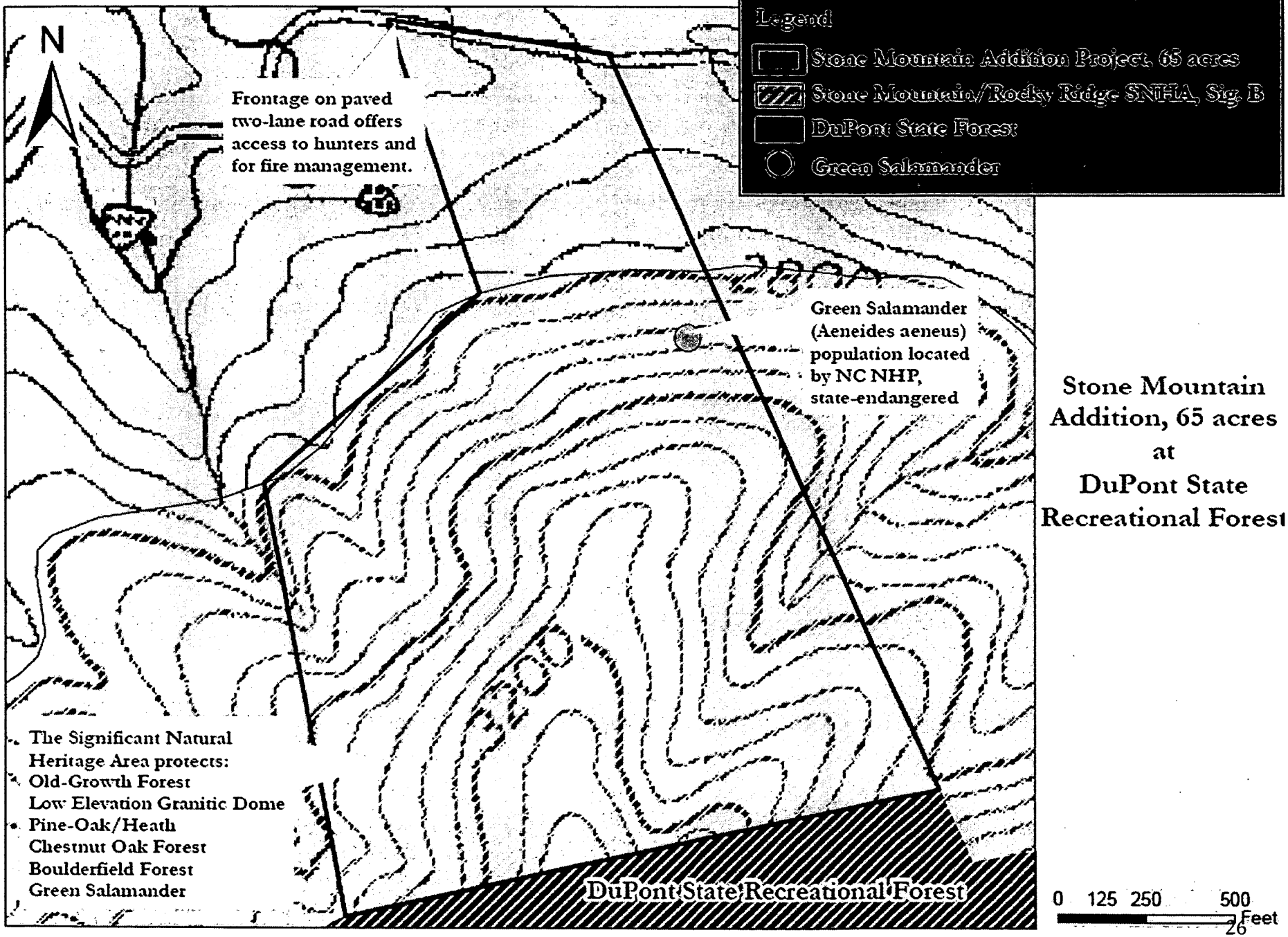


State Endangered Green Salamander

View from granitic outcrop at top of property, adjacent to DuPont State Rec. Forest



Stone Mountain Addition, DuPont State Recreational Forest,
Henderson County, 65 acres



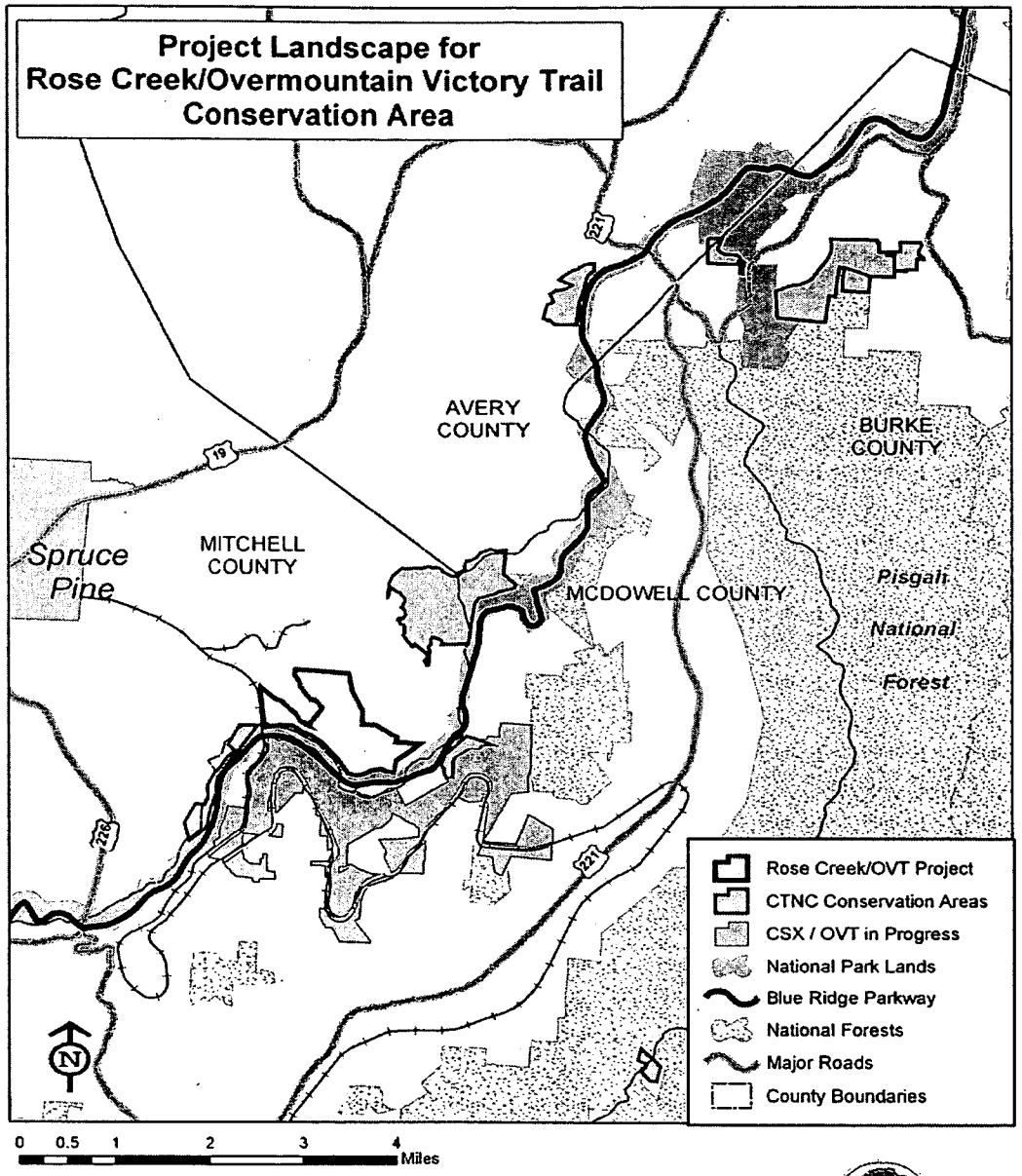
Stone Mountain Addition, 65 acres at DuPont State Recreational Forest

Overmountain National Historic Victory Trail



Rose Creek

- Protecting Blue Ridge Parkway viewshed
- Access to OMVT (trail)
- Protect wildlife & natural areas
- 535 ac /$720K



CONSERVATION TRUST FOR NORTH CAROLINA

Rose Creek

535 Acres along Blue Ridge Parkway

1.33 miles OMVT

Riparian Buffers/Abundant Wildlife





ROSE CREEK – 535 acres along Blue Ridge Parkway
1.33 miles of OMVT



Moving Forward

- Maximize federal matching monies
- Potential Economic Impact Key
- Prioritization and coordination with other Trust Funds
- Slow down, don't stop
- Use private donations to help buy time
- Consider Role in Climate Change

  Adaptation





Additional Information

Lisa.riegel@ncdenr.gov

(919) 707-8638



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

September 30, 2011

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FISCAL RESEARCH
Mr. Mark Trogdon, Acting Director, Fiscal Research Division

SENATE APPROPRIATIONS SUBCOMMITTEE ON NATURAL AND ECONOMIC RESOURCES
The Honorable Don East, Co-Chair
The Honorable David Rouzer, Co-Chair

HOUSE APPROPRIATIONS SUBCOMMITTEE ON NATURAL AND ECONOMIC RESOURCES
The Honorable Carolyn Justice, Co-Chair
The Honorable Roger West, Co-Chair

JOINT LEGISLATIVE COMMISSION ON GOVERNMENTAL OPERATIONS
The Honorable Thom Tillis, Speaker of the House of Representatives
The Honorable Phil Berger, President Pro Tempore

FROM: Kari Barsness KKB
Director of Legislative and Intergovernmental Affairs

SUBJECT: North Carolina Natural Heritage Trust Fund 2011 Annual Report

Pursuant to General Statute 113-77.9(e), the Secretary of the Department of Environment and Natural Resources shall annually submit a list of grants including acreage, county, funding amount, and the state department or division responsible for managing the land. This report shall be submitted to the Joint Legislative Commission on Governmental Operations, the House and Senate Appropriations Subcommittees on Natural and Economic Resources, the Fiscal Research Division and the Environmental Review Commission by October 1 of each year. Please consider the Natural Heritage Trust Fund's Fiscal Year 2011 Annual Report as the formal submission of this report.

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-733-4984 \ FAX: 919-715-3060 Internet: www.enr.state.nc.us

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One NorthCarolina Naturally

If you have any questions or need additional information, please contact me by phone at (919) 715-4189 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: David Knight, Assistant Secretary
Lisa Riegel, Executive Director, Natural Heritage Trust Fund
Kristin Walker, Fiscal Research Division
Lanier McRee, Fiscal Research Division
Claire Hester, Fiscal Research Division
Mariah Matheson, Research Division



2011 FISCAL YEAR-END REPORT

A Report to the Governor and General Assembly

Dee Freeman, Secretary
N.C. Department of Environment
and Natural Resources

J. Robert Gordon, Chairman
Board of Trustees
N.C. Natural Heritage Trust Fund

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Awards....7
Effect of Recent Legislative Actions on NHTF Fund Availability....8
Conclusions and Recommendations....11

APPENDIX

NHTF INCOME BY FUNDING SOURCE ..... TABLE 1

NHTF INCOME CHART BY FUNDING SOURCE ..... FIGURE 1

GRANT AWARDS SUMMARY (1987-2011) ..... TABLE 2

1988-2011 PROJECT LOCATIONS ..... FIGURE 2

FISCAL 2011 GRANT AWARD TOTALS BY AGENCY ..... TABLE 3

MAP OF FALL 2010 PROJECT LOCATIONS ..... FIGURE 3

FALL 2010 GRANT AWARDS SUMMARY ..... TABLE 4

MAP OF SPRING 2011 PROJECT LOCATIONS ..... FIGURE 4

SPRING 2011 GRANT AWARDS SUMMARY ..... TABLE 5

Executive Summary

The Natural Heritage Trust Fund had two grant cycles in fiscal 2011 and was able to award more than $9 million to protect about 3,300 acres of land. That land will be used for state parks, game lands, state forests, plant preserves and historic site protection. The land has great recreational, scientific, educational and aesthetic value. Protecting important natural heritage sites also bolsters North Carolina's $17-billion-a-year tourism industry and provides necessary buffers between the state's military installations and incompatible development.

The income to NHTF, based primarily on receipts from the deed stamp tax on real estate transactions, was down 4.5 percent, but almost 48 percent from the high of fiscal 2007. In addition, $1.7 million was diverted to the General Fund and approximately $400,000 was diverted to cover new fund-shifted staff in the N.C. Department of Environment and Natural Resources, adding to the decrease in available funds for the trust fund's mission. Next year, the state budget requires a diversion of $8 million to the General Fund and $800,000 to cover fund-shifted positions. The net effect on income, when coupled with on-going debt repayment obligations of approximately $4.4 million results in a deficit for the year, which will be covered by the cash balance from fiscal 2011.

Many projects take years to come to fruition and provide critical links between separate tracts and better access to existing public lands. They also enable better management of existing sites. It's important during tough budget times to spend wisely, but take advantage of time-sensitive land conservation opportunities that promise a great return on the state's investment.

NORTH CAROLINA
NATURAL HERITAGE TRUST FUND
FISCAL YEAR-END REPORT 2011

Origins and Mission

The North Carolina Natural Heritage Trust Fund (NHTF) was established by the 1987 General Assembly (G.S. 113-77, effective July 1, 1987) as a supplemental funding source for state agencies to acquire lands and to pay for the inventory of natural areas by the N.C. Natural Heritage Program. A 12-member board of trustees administers the trust fund. This annual report is prepared in accordance with G.S. 113-77.9(e).

Board of Trustees

NHTF is delegated the authority to grant funds to eligible state agencies pursuant to applications that meet statutory criteria and board guidelines. The governing authority for the trust fund is a 12-member board of trustees. Membership of the board was increased from nine members during the 2001 legislative session. Four members are appointed by the governor, who also designates the chairman. Eight members are appointed by the General Assembly; four are recommended by the president pro-tempore of the Senate and four are recommended by the speaker of the House. Appointments are made effective Jan. 1 and are for staggered six-year terms. Persons appointed are to be knowledgeable in the acquisition and management of natural areas.

Board of Trustees

Governor Appointees	Senate Appointees	House Appointees
Charles E. Clement Watauga County 2010-2016	J. Robert Gordon, Chairman Scotland County 2008-2014	Alan D. Briggs Wake County 2006-2012
Stephen W. Woody Buncombe County 2010-2016	Lois McIver Winstead Person County 2010-2016	Alan S. Weakley, Ph.D. Chatham County 2008-2014
R. Michael Leonard Forsyth County 2006-2012	Portia Hawes Warren County 2006-2012	Henry L. Kitchin Richmond County 2008-resigned 2011
Elizabeth D. Taft, Ph.D. Pitt County 2008-2014	Sam P. Douglas Jr. Wilson County 2008-2014	Elizabeth "Robin" Jacobs Orange County 2010-2016

Natural Heritage Trust Fund Staff

Executive Director:

Lisa D. Riegel
512 N. Salisbury St., MSC 1601
Raleigh, NC 27699-1601
(919) 715-8014
lisa.riegel@ncdenr.gov

In addition to the executive director, the NHTF is supported by Ann Prince (part-time) who works on dedications (a process that further protects lands acquired with NHTF monies pursuant to the Nature Preserves Act), and Eric Galamb (part-time) who assists in grant administration.

Operating expenses for personnel, producing and distributing grant materials, meeting expenses, etc., continue to be less than 2 percent of the program expenditures.

Funding Sources

The primary source of funding for the NHTF is the state excise tax on real estate conveyances. NHTF receives 25 percent of the state's portion of the $2 per $1,000 value deed stamp tax. The county retains half this tax, while the state receives 50 percent, minus allowable administrative costs. The deed stamp tax currently provides 63 percent of the funding for the NHTF, down from a high of almost 80 percent of the income in 2006.

The trust fund's second major source of funding is a portion of the additional fee charged for personalized license plates. The state charges an additional fee of $30 for each personalized license plate; $15 of this additional fee is credited to the NHTF. NHTF also receives a portion for specialty license plates in some cases: $10 for each "First in Forestry" license plate, $15 for each "State Parks" license plate and $15 for each out-of-state college specialty license plate. The fees from these license plates currently provide 35 percent of the funding for the NHTF.

The final source of funding is interest from funds in the trust fund account. Funds not expended remain in the interest-accumulating Natural Heritage Trust Fund account and do not revert to the General Fund.

Table 1 in the appendix summarizes the NHTF income on an annual basis since its inception in 1987.

Grant Criteria and Eligible Agencies

Grants are awarded to acquire land that:

- represents the state's ecological diversity to ensure its preservation and conservation for recreation, scientific, education, cultural and aesthetic purposes;
- adds to the system of parks, state trails, aesthetic forests, wild and scenic rivers, fish and wildlife management areas and other natural areas for the beneficial use and enjoyment of the public; and
- helps develop a balanced state program of historic properties.

Funds are also allocated to the N.C. Natural Heritage Program (NHP) for natural area inventories and conservation and protection planning of natural areas. Information compiled by NHP is used to help guide land management and conservation decisions by state and federal agencies, and also by private groups and businesses, ensuring that conservation funds are spent strategically to protect the highest quality areas.

In 2004, the General Assembly also authorized the NHTF (G.S. 113-77.9(b3)) to be used to retire debt incurred by funding land acquisitions for the purposes listed above.

State agencies authorized to apply for grant awards are the:

- N.C. Department of Environment and Natural Resources,
- N.C. Wildlife Resources Commission,
- N.C. Department of Cultural Resources, and
- N.C. Department of Agriculture and Consumer Services.

Priority consideration is given to protection of land having outstanding natural or cultural heritage values. Land with outstanding natural heritage values is land identified by the N.C. Natural Heritage Program as having state or national significance. Land with outstanding cultural heritage value is land that is identified, inventoried or evaluated by the N.C. Department of Cultural Resources.

Income

As shown in Table 1, income for fiscal 2011 was **$12,522,450,** representing an overall decrease of 4.5 percent from the previous year ($13,108,654) and almost a 48 percent decrease from the all-time high of fiscal 2007 (income of $23,964,497). The overall economy of the state remains depressed, and NHTF income continues to decline, but at a slowing rate, as last year's decline was 8 percent. The income change over time from each source of income is shown in Figure 1.

Awards

Between 1987 and June 30, 2011, NHTF has contributed to the protection of more than 297,000 acres through 518 grants totaling more than $328 million (Table 2). The locations of these projects are shown in Figure 2. During fiscal 2011, NHTF awarded 19

grants totaling $9,041,889. These grants will contribute to the protection of an estimated 3,353 acres (Table 3).

NHTF typically holds two grant cycles per year; one in the fall and one in the spring. The locations of the Fall 2010 projects are shown in Figure 3 and project descriptions are contained in Table 4. The Spring 2011 project locations are shown in Figure 4 and project descriptions are contained in Table 5. Important to note in the project descriptions is the leveraging of NHTF funds; many, if not most, include matching funding from federal, private and/or other state sources.

NHTF continues to receive many more projects (50 percent historically) than can be funded. In fiscal 2011, we received 36 applications requesting funding for more than $26 million.

Certificates of Participation

Recognizing the need to protect important lands in our rapidly developing state, the General Assembly authorized the use of a special financing mechanism referred to as certificates of participation during three legislative sessions – in 2004 *(SL 2004-179, Section 3),* in 2007*(SL 2007-323, Section 29.14)* and in 2008 *(SL 2008-107, Section 27.8(a)(28)).* This form of bond sales allowed the state to acquire properties of high natural and/or cultural heritage value that would otherwise have been lost to development. NHTF now repays the debt and interest on the 2004 and 2007 COPs using annual receipts.

For fiscal 2011, the COPs debt repayment was $4,418,304 and will be similar ($4,409,862) in the coming fiscal year based on correspondence from the Department of State Treasurer. With an income of about $12 million, the debt repayment currently represents more than 36 percent of the NHTF income.

Effect of Recent Legislative Actions on NHTF Fund Availability

The overall economy remained poor in fiscal 2011. Approval of NHTF-funded land acquisitions by the Council of State slowed at the beginning of the calendar year 2011 to prepare for possible budget shortfalls. Almost no projects were scheduled for review in the first half of calendar 2011. In addition, two transfers of funds from NHTF to the General Fund, totaling $1,725,961, were completed as explained below:

- During the 2010 legislative session, the General Assembly made certain assumptions about the level of enhanced American Recovery and Reinvestment Act (ARRA) funding available from the federal government for the state's Medicaid expenses. Because of the uncertainty of the level at which North Carolina would be funded, the General Assembly made provisions in the budget bill in the event that the federal funds were not realized. Specifically, Section 2.3(b) of SL 2010-31, directs the Director of the Budget to use the interest earned

in "all other funds," including NHTF, to cover the lost revenue. In May 2011, the State Budget Director acted on this authorization due to shortfalls in the federal ARRA funding for the state's Medicaid expenses. NHTF interest income of $255,961 was therefore transferred to the General Fund.

- During the 2011 legislative session, in Senate Bill 109, the General Assembly called on Gov. Perdue to increase General Fund availability for fiscal 2012 by $537.7 million by transferring unexpended funds from non-General Fund accounts to the General Fund. In accordance with this bill, $1.5 million was transferred from the NHTF in fiscal 2011 to the General Fund at the direction of the Office of the State Controller.

For fiscal 2012, based on Session Law 2011-145, Section 2.2. (i) (the budget bill), $8 million will be diverted to the General Fund from the deed stamp tax income that would normally be credited to NHTF. In addition to this $8 million one-time diversion, many staff positions are now funded permanently by NHTF. Based on legislative action in both the 2010 session and the 2011 session, NHTF now funds almost all of the staff positions (22 of the 23) in the DENR Office of Conservation Planning and Community Affairs (OCPCA) and one position in the Department of Agriculture and Consumer Service's Plant Conservation Program (AG-PCP) for a total of $1.6 million per year, as follows:

- During the 2010 session, the budget bill fund-shifted 5.48 positions in OCPCA previously funded by General Fund appropriations to the NHTF, totaling $400,000 per year. In the table below for fiscal 2010-2011, this expense is included in the grants paid/closed.

- During the 2011 session, the budget bill fund-shifted an additional 3 positions in OCPCA and 1 position in AG-PCP, at an amount not to exceed $400,000, effective beginning in fiscal 2012, pursuant to SL2011-145, Section 13.16.

- Prior to these changes NHTF funded 9 full-time and 3 part-time positions through the grant process for natural area inventorying and conservation planning, for a total of about $800,000 per year. In the table below for fiscal 2010-2011, this expense is included in the grants paid/closed.

The table below summarizes the income and expenses for fiscal 2011 and estimates the flow of income and expenses for fiscal 2012:

NHTF Income & Expenses		
	FY 2011	FY2012
Beginning Balance carried over from prior year	$24,530,449	$14,375,005
Income (FY2010 actual; FY2011 estimated)	$12,522,450	$12,000,000
Diversion to General Fund	-$1,725,961	-$8,000,000
OCPCA/AG-PCP Staff	*	-$1,600,000
Grants Paid/Closed	-$16,375,521	-$9,242,671
Projects Awarded (pending obligations)	-$9,242,671	-$2,947,472**
COPS Repayment	-$4,418,304	-$4,409,862
Operating Expenses	-$158,109	-$160,000
Cash Available Year End	$5,132,333	$0

*included in "Grants Paid/Closed" in FY2010-11

**cash estimated to be available for new grants in FY2011-2012

The NHTF Board last met in April 2011 to award grants with the existing available cash balance. Income has been accruing monthly since then, leaving an available cash balance at the end of the year of $5,132,333. Due to the required diversion to the General Fund of $8 million, the cash balance in the NHTF fund in fiscal 2012 will be dramatically lower than in past years, and thus, interest income will correspondingly decrease. As such, fiscal 2012 income is expected to be slightly less ($12 million) than fiscal 2011 as interest income will be lower and as the deed stamp tax is expected to be about the same or lower (it has been continuing to decrease as the real estate market remains depressed.)

Ongoing funding obligations total about $6.2 million and include: COPS repayment ($4.4 million); OCPCA staff ($1.6 million); and dedication and administrative expenses ($175,000). Assuming an income level of $12 million, less ongoing obligations of $6.2 million, and the $8 million diversion to the General Fund leaves a deficit of $2.2 million. However, if income is as predicted, this deficit can be covered by the cash balance ($5.1 million) remaining at the end of fiscal 2011, still leaving $2.9 for new land acquisition projects.

Conclusions and Recommendations

NHTF income has continued to decline, and will likely decline or stay at the reduced level, as long as the economy remains weak. COPS debt repayment will likely remain in excess of one-third of total income, thereby reducing income available for grants.

Due to the diversion of $8 million in income to the General Fund, for the upcoming fiscal 2012, no new monies will be available for land acquisition. Approximately $3 million in residual cash available from fiscal 2011 may be available for new projects in the spring of 2012 if income comes in as expected to cover ongoing obligations. If projects continue to come in under budget based on the depressed real estate market, it is possible that some additional funds may also be available.

Protecting our natural resources is key to our state's economic success. Many of our conservation lands buffer military sites and allow them to continue operating, supporting the $23 billion per year that the military industry brings to North Carolina. Our outstanding natural resources are one of the main attractions supporting the $16.5 billion per year tourism industry in North Carolina.

NHTF will continue to provide funds, although limited in fiscal 2012, to help implement the state's Million Acre Initiative – a collaborative endeavor to permanently preserve an additional one million acres of land. Although acquisitions are being delayed, NHTF hopes to be able to take advantage of opportunities provided by the economic downturn. Many of the projects we have authorized are coming in under budget as prices decline. NHTF must continue to encourage creative funding of projects through bargain sales, matching funds from other grant programs and private donations. The statewide One NC Naturally Conservation Planning Tool, developed in part by a grant from NHTF, is helping NHTF and other organizations ensure that the state's limited resources are used most effectively on the highest priority areas.

Table 1
Natural Heritage Trust Fund
INCOME BY FUNDING SOURCE
as of June 30, 2011

Fiscal Year	Personalized License Plates	Transfer Tax	Interest	TOTAL INCOME
Original Appropriation				$275,000
1987-88	$0	$0	$15,546	$15,546
1988-89	$0	$0	$24,316	$24,316
1989-90	$1,073,165	$0	$53,766	$1,126,931
1990-91	$1,761,140	$0	$144,662	$1,905,802
1991-92	$1,627,304	$1,326,848	$232,156	$3,186,308
1992-93	$1,661,943	$2,012,107	$309,750	$3,983,800
1993-94	$1,713,091	$2,089,776	$326,920	$4,129,787
1994-95	$1,787,029	$3,579,453	$393,892	$5,760,374
1995-96	$1,856,167	$3,134,801	$335,131	$5,326,099
1996-97	$1,914,104	$6,019,264	$616,282	$8,549,650
1997-98	$1,930,813	$6,949,967	$1,080,042	$9,960,822
1998-99	$2,004,740	$8,148,689	$1,396,073	$11,549,502
1999-2000	$2,189,995	$8,599,107	$1,925,497	$12,714,599
2000-01	$2,386,509	$8,412,962	$1,845,783	$12,645,254
2001-02	$4,622,580	$6,570,386	$1,183,199	$12,376,165
2002-03	$2,550,269	$9,494,785	$508,397	$12,553,451
2003-04	$3,067,375	$12,365,476	$405,251	$15,838,102
2004-05	$5,028,710	$13,810,698	$492,612	$19,332,020
2005-06	$3,978,992	$18,779,600	$880,832	$23,639,424
2006-07	$4,227,510	$18,611,071	$1,125,916	$23,964,497
2007-2008	$4,353,457	$15,195,744	$1,255,164	$20,804,364
2008-2009	$4,365,328	$9,009,424	$919,964	$14,294,716
2009-2010	$ 4,154,435	$8,551,078	$ 403,141	$13,108654
2010-2011	**$4,363,349**	**$7,933,140**	**$225,961**	**$12,522,450**
Total Income	**$58,254,656**	**$170,594,376**	**$15,874,292**	**$249,587,633**

FIGURE 1
NHTF Income - Fiscal Year

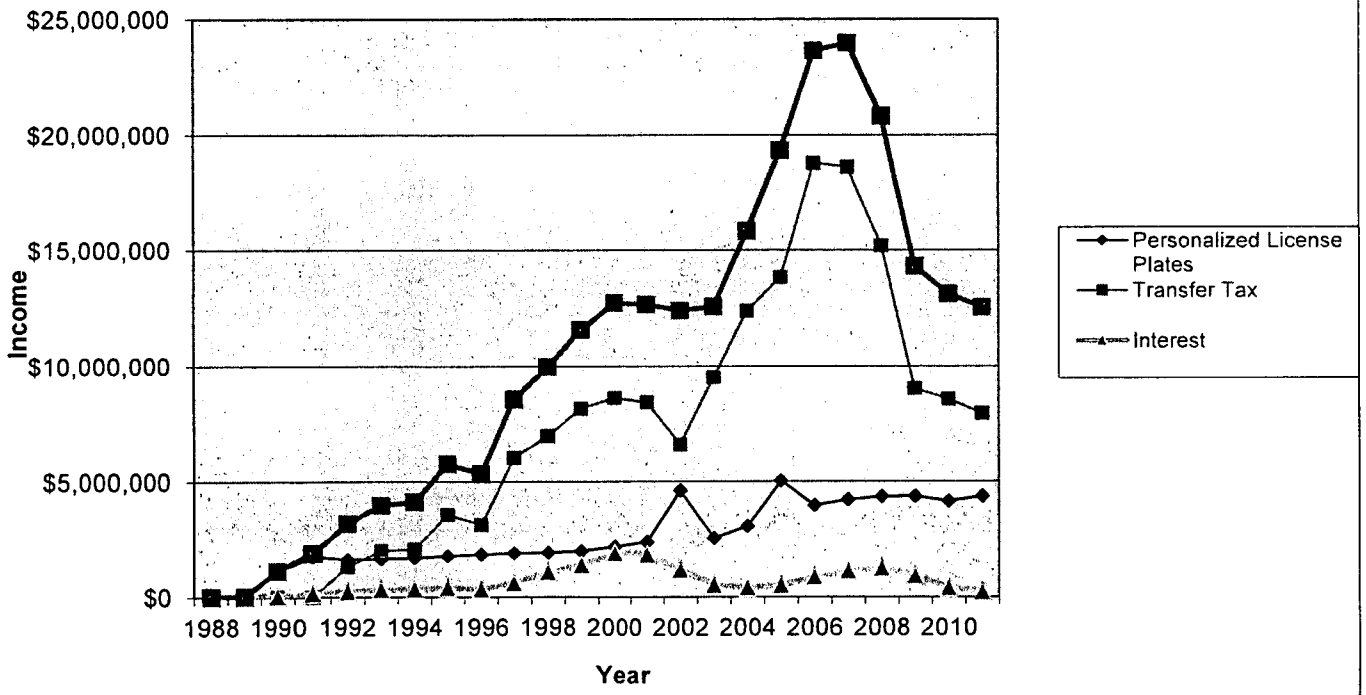


Table 2
Grant Awards Summary
1987 – June 30, 2011

Total Awarded to Date (since 1987) (518 awards)	**$328,379,318**
Returned Funds (Applicant unable to acquire land; award money returned to NHTF)	$46,286,673
Total Transferred (spent)	$265,471,626
Total Obligated	$16,621,019
Acres Protected	297,773
Requests to Date (754 requests)	$657,347,680
Requests Unable to Fill (50%)	$328,968,362

Figure 2
Natural Heritage Trust Fund
Project Awards
1988- Spring 2011

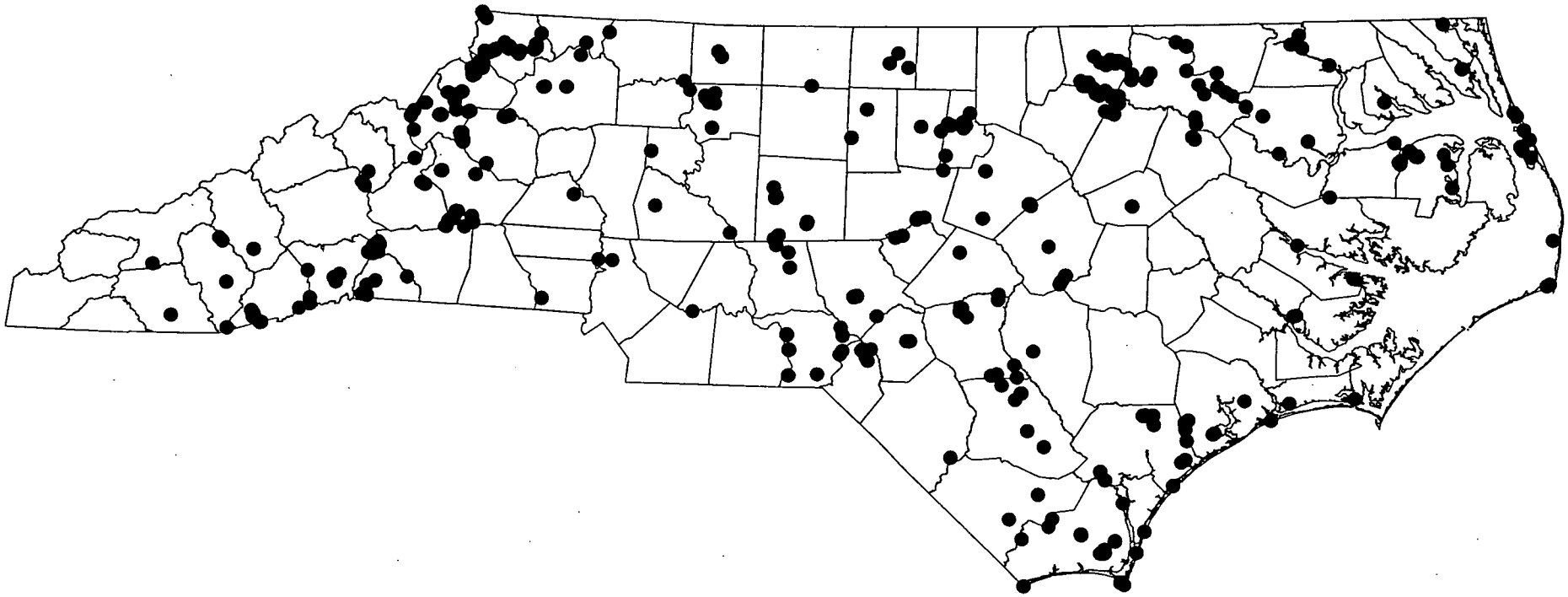


Table 3
Grant Award Totals by Agency
Fiscal Year 2011

Agency	Acres	Grant Total
Department of Agriculture & Consumer Services *Plant Conservation Program* (4 grants)	400	$1,574,650
Department of Cultural Resources (1grants)	1	$26,500
Department of Environment and Natural Resources (11 grants)	2,414	$6,141,436
Wildlife Resources Commission (3 grants)	538	$1,299,303
Total **(19 grants)**	3,353	$9,041,889

Figure 3
Natural Heritage Trust Fund
Project Location Awards
Fall 2010

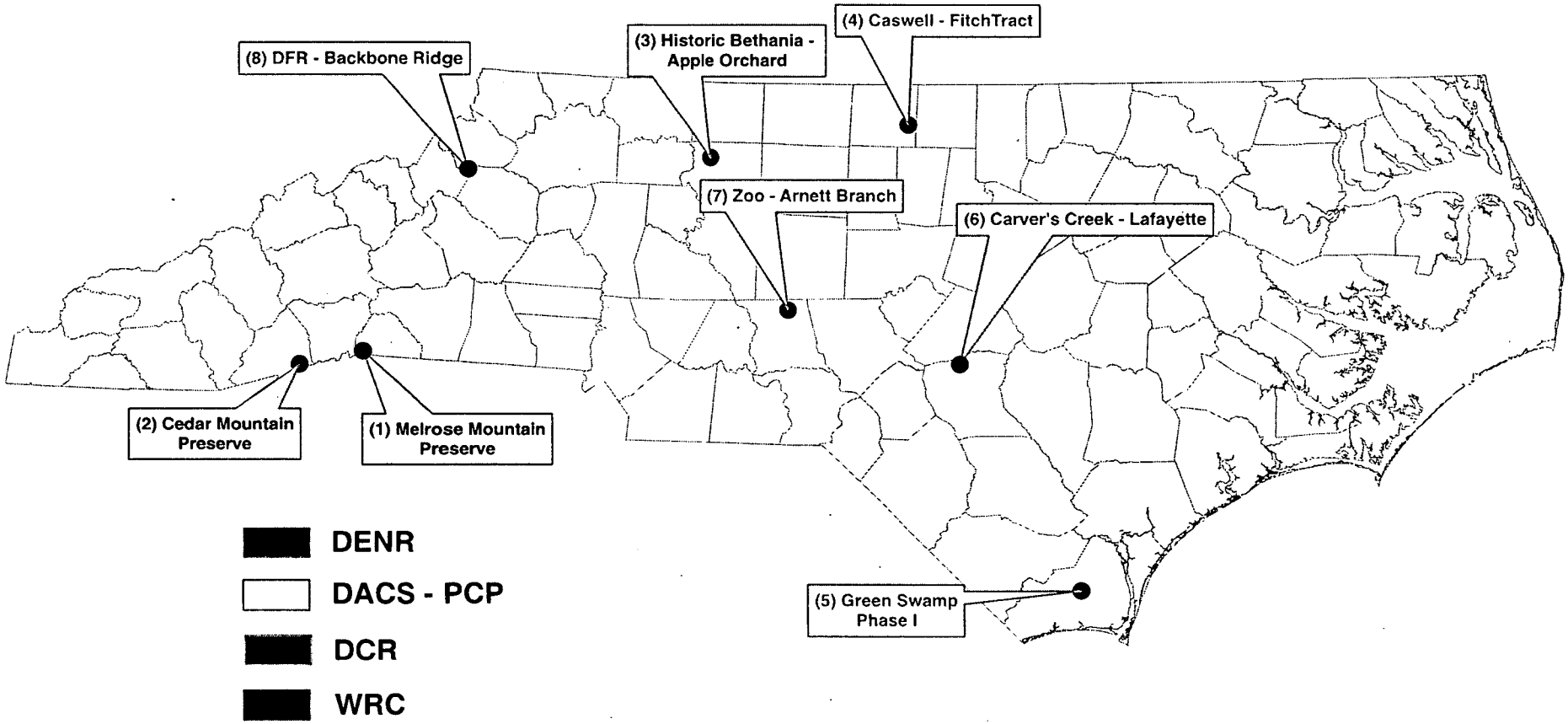


Table 4 - FALL 2[illegible]0 Awards Summary

No.	Agency	Project Title	County	Award	Acres	Description
1	DACS/ PCP	Melrose Mountain Preserve - Burdette Tract	Polk	$72,986	28	Acquisition of the Burdette tract will help protect a subpopulation of the White Irisette (*Sisyrinchium dichotomum*) a federally and state endangered plant species known to occur on the tract, as well as parts of the surrounding parcels. This tract will be added to the existing Melrose Mountain Plant Conservation Preserve which was established with the support of NHTF and EEP in 2004, and would form a protected linkage with other local "managed areas" in the vicinity. NHTF providing 46% of the funding for this purchase from NHTF with the remaining coming from NCDOT mitigation monies. The NCDOT mitigation monies include some stewardship funding.
2	DACS/ PCP	Cedar Mountain Bog	Transylvania	$498,000	42	PCP will establish the Cedar Mountain Bog Plant Conservation Preserve by acquiring the core tract with significant natural features. The site has been a long standing conservation priority due to the collection of rare species known to be present, including Bog Rose (*Arethusa bulbosa)* (endangered), Cuthbert's Turtlehead (*Chelone cuthbertii)* (threatened), Robin Runaway (*Dalibarda repens)* (endangered), and Mountain Sweet Pitcher Plant (*Sarracenia jonesii)* (endangered). The property is also known to support Green Salamander (state endangered), and historically supported Swamp Pink (*Helonias bullata)* (threatened). The project includes a bargain sale ($275,000) and existing conservation easement component that significantly reduce the cost to the state. Partners are established to assist in the stewardship (>$27,700). Original request was for $819,500 for 108 acres.
	DACS			**$570,986**	**70**	
3	DCR	Historic Bethania - Apple Orchard	Forsyth	$26,500	0.52	The Apple Orchard Expansion tract acquisition within the National Historic Landmark District in the Town of Bethania will complement the nine previous DCR projects of over 161 acres in Bethania. The Town of Bethania will manage the land for DCR and this tract will extend the protected natural lands and allow for the possible connection of trails to other previously protected natural areas. Reduced overhead fee from original request for $31,600.
	DCR			**$26,500**	**1**	

Table 4 - FALL 2010 Awards Summary

No.	Agency	Project Title	County	Award	Acres	Description
4	WRC	Caswell Game Land Fitch Tract	Caswell	$641,200	207	The Fitch Tract presents an opportunity to protect a Nationally Significant SNHA while improving connectivity of the Caswell Game Land and providing valuable recreational opportunities. This tract contains the unique and rare forest types known as Xeric Hardpan Forest (Montmorillonite Forest) and Upland Depression Swamp Forest (Nationally Significant). The Fitch tract contains the highest quality and best developed examples of these habitats in the state, with increased significance by association and transition to an excellent example of another natural community type, Basic Oak-Hickory Forest. The four seasonal depression pools on the tract provide important breeding habitat for marbled and spotted salamanders, fairy shrimp, and other species associated with ephemeral wetlands. Additional NCWAP priority species documented on the property include eastern wood-pewee, wood thrush, field sparrow, American woodcock, northern bobwhite, hooded warbler, and hairy woodpecker. Tract provides enhanced public access through the construction of low-impact trails. Tract will be open to the public for hunting, fishing, trapping, wildlife viewing, wildlife research, and other outdoor uses. Price went up slightly from $630,000 original request.
5	WRC	Green Swamp Forests LLC - Phase I	Brunswick	$500,000	250	The Green Swamp Forests LLC-Phase I tract involves a multi-phase acquisition that will utilize multiple grant sources to acquire the 1,894 acre property. The Phase I purchase will protect a nationally significant SNHA site that supports high species richness. Acquisition will afford establishment of a corridor that, in combination with Juniper Creek Game Land and the Green Swamp Preserve, will measure approximately 21 linear miles while providing security to the estuarine ecosystem by contributing towards protection of the headwaters of the Lockwood Folly River. The property will be incorporated into the WRC Game Lands Program. Fire and longleaf management will play a significant role in the long-term management of this tract. NOAA-CELP and CWMTF monies proposed for subsequent phases of project. Requested $709,995; price increased slightly to $750,000, but NHTF only allocated $500,000 at this time.
	WRC			**$1,141,200**	**457**	

No.	Agency	Project Title	County	Award	Acres	Description
6	DENR/ DPR	Carvers Creek State Park - Lafayette Tract	Cumberland	$500,000	250	The Lafayette tract borders the Carvers Creek Sandhills SNHA, one of the largest tracts of mature longleaf pine forest remaining in the NC Sandhills, to the north and borders National and State significant SNHAs containing active clusters of the endangered Red-cockaded woodpecker (RCW), Bachmann's Sparrow and Sandhills Pyxie-Moss, both Federal Species of Concern. The Lafayette tract also contains large populations of Sandhills Pyxie-Moss and also provides foraging habitat for adjacent RCWcolonies. The property undoubtedly has a number of other significant species, similar to those found on the state park, however it has not been surveyed. The property also has a large pond and two smaller ponds that are headwater tributaries to Carvers Creek. The upland longleaf pine forest and mixed hardwood wetlands along the streams support a diversity of wildlife. This tract is critical for public access to the Sandhills section of Carvers Creek State Park, by allowing public recreational facilities to be developed away from the most significant natural resources.
7	DENR/ ZOO	Arnett Branch Longleaf Pine Forest	Montgomery	$150,000	47	In partnership with the LandTrust for Central North Carolina (LTCNC), the North Carolina Zoo plans to preserve the +/-112-acre Nichols Property, the last known remaining intact old growth Piedmont longleaf pine forest (200+ yrs old) of this size in the region. This biologically significant site is located in the heart of the Greater Uwharries region, an area of unique biological diversity and is adjacent to a corridor of other natural lands in an increasingly fragmented landscape. Private funding of $50,000 has purchased a two year option agreement that has been signed. These funds will go toward purchase price of the property. Originally requested $398,000.

Table 4 - FALL 2010 Awards Summary

No.	Agency	Project Title	County	Award	Acres	Description
8	DENR/ DFR	Backbone Ridge	Caldwell	$278,680	94	Acquisition of the Backbone Ridge tract will insure the protection of 755 acres of high quality mountain habitat including 57,000 feet of streams and 585 acres of riparian buffers. The tract adjoins the Pisgah National Forest on three sides and is a significant addition toward landscape conservation management in the region. Plans are for 336 acres to be purchased and managed by DFR as part of the State Forest system and offer opportunities for research, demonstration and education on natural resource protection and management. The tract will also be offered to NCWRC for inclusion in the Game Land program. 420 acres (same cost, as state portion, but more acreage because further from developed areas) will be purchased and managed by the US Forest Service. Total cost is $9,636,842 with a confirmed contribution of $820,000 from The Conservation Fund, a proposed CWMTF grant of $2,009,711 (not approved in initial 2010 allocation, but in next tier for consideration if funds become available) and $1.5 million in USFS appropriation if current federal budget approved and plans for an additional $3+ million in subsequent year. Project will require additional funding from NHTF for a total request of $2,009,710.
	DENR			**$928,680**	**391**	
	ALL APPs.			**$2,667,366**	**919**	
	DFR = Division of Forest Resources					EEP = Ecosystem Enhancement Program
	NHP = Natural Heritage Program					NOAA = National Oceanic & Atmospheric Administration
	AQU = Aquariums					CELCP = Coastal & Estuarine Land Conservation Program
	DCM = Division of Coastal Management					SNHA = Significant Natural Heritage Area
	WRC = NC Wildlife Resources Commission					NHTF = Natural Heritage Trust Fund
	DOT = Department of Transportation					CWMTF = Clean Water Management Trust Fund
	DACS = Department of Agriculture & Consumer Services					US = United States
	PCP = Plant Conservation Program					NC = North Carolina
	DCR = Department of Cultural Resources					RCW = Red Cockaded Woodpecker

Figure 4
Natural Heritage Trust Fund
Award Project Locations
Spring 2011

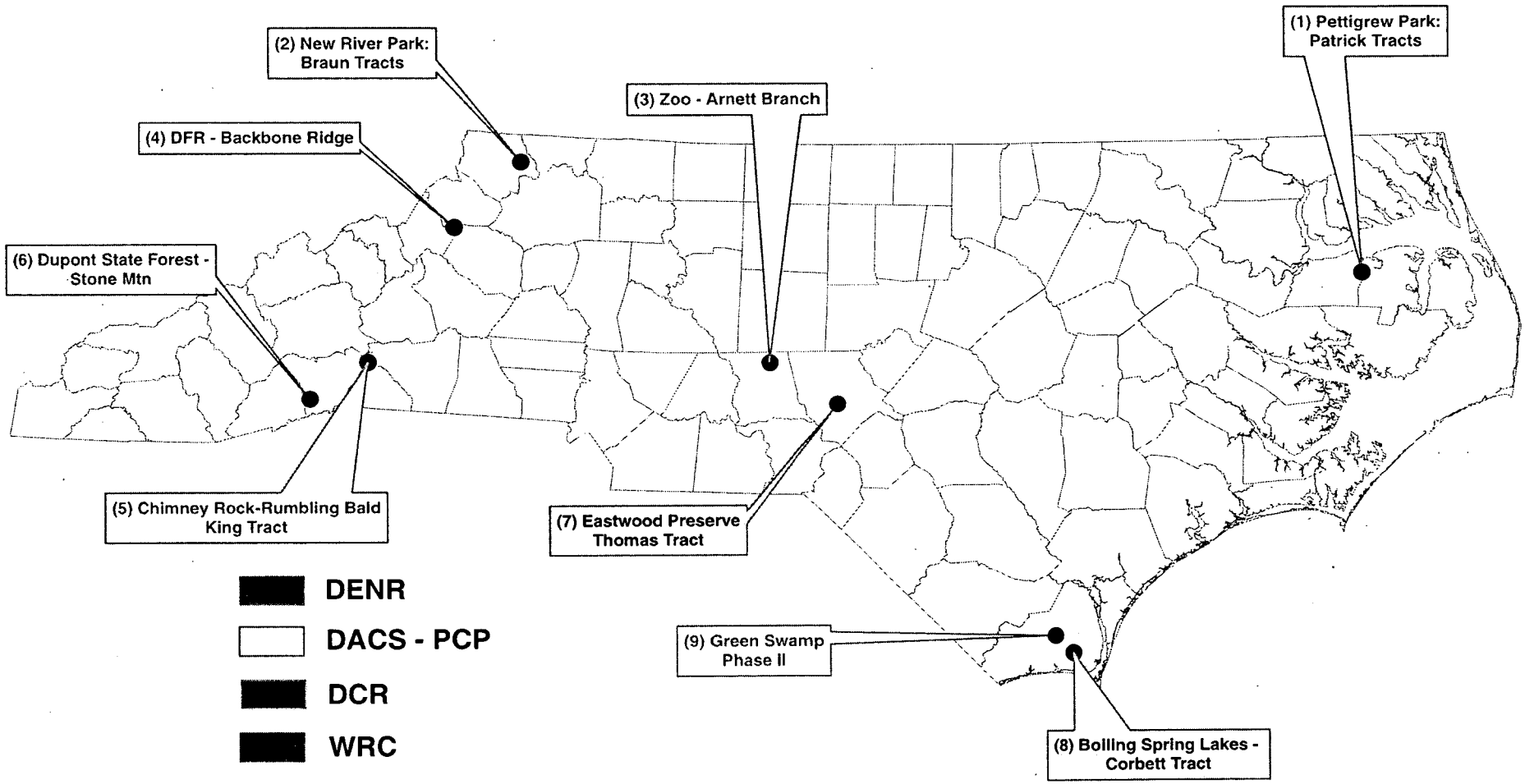


Table 5 - SPRING 2011 Awards Summary

No.	Agency	Project Title	County	Request	Award	Acres	Description
I-1	NHP	Natural Area Inventories	Statewide	$1,500,905	$500,000		Acquiring knowledge of the location, extent, and quality of natural areas is a critical component to achieving conservation of the extraordinary natural resources of this state. In order to make effective and efficient use of the citizens' trust we must determine the fundamental significance of the land and waters. The natural area inventory process identifies the very best examples of natural communities, rare species populations, and Significant Natural Heritage Areas (SNHAs). State and Federal agencies, local governments and land trusts rely heavily on data generated from natural area inventories and use SNHA designations to inform their conservation priorities. This information has recently become even more critical as it is incorporated into statewide conservation planning initiatives, such as the One North Carolina Naturally "Conservation Planning Tool" and the Wildlife Resources Commission's "Green Growth Tool Box". Funded $500,000 and remaining funding over three years, provided funds available for NHTF.
I-2	NHP	Aquatic Natural Areas and Federal Listed Species	Statewide	$660,000	$220,000		NHP in partnership with WRC requests funding of $660,000 over three years to continue surveys for populations of rare aquatic species including federal listed and candidate species in known and potential habitats, manage the information collected from these efforts and other appropriate sources, and use this information to support conservation planning for North Carolina's Aquatic Significant Natural Heritage Areas. Matching monies from WRC ($52,000/yr) and USFWS ($60,000/yr). Funded $220,000 for first year and remaining funding over 3 years provided funds available to NHTF.

Table 5 - SPRING 2011 Awards Summary

No.	Agency	Project Title	County	Request	Award	Acres	Description
1	DPR	Pettigrew State Park: Patrick Tracts	Washington	$191,000	$185,000	213.7	Grant is for acquistion of three tracts along the Scuppernong River for inclusion in Pettigrew State Park. The Scuppernong River corridor is part of a Nationally Significant SNHA. The project area includes several rare and/or high quality natural communities: Peatland Atlantic White Cedar, Nonriverine Swamp Forest, and Cypress-Gum Swamp (Blackwater subtype). These tracts contain habitat for the Rafinesque's Big-eared Bat. There are other documented rare species in the project area, including the federally endangered Red-cockaded Woodpecker and Bald Eagle. Tracts will help connect existing tracts already in conservation ownership by the US Fish and Wildlife Service and the State of North Carolina. Acquisition of these tracts will protect 5,275 linear feet of Scuppernong River frontage. Inclusion of these properties in the state park will enhance existing recreational activities in the area including a paddle trail and a birding trail, protect the significant natural resources and provide interpretation of the ecosystem and its processes. $170,000 CWMTF; $10,000 PARTF; additional private donation $91,000
2	DPR	New River State Park: TCF/Reeves-Braun Tracts	Ashe	$1,146,000	$573,000	168	The South Fork of the New River, which flows through the park, is designated as a National and State Scenic River. The project is on the Peak and is visible from the river. The entire New River watershed in NC is severely threatened by the growth of second homes; this acquisition would protect a large tract of land from development and prevent the associated pollution and sedimentation that could lead to a significant deterioration in the South Fork's outstanding water quality. The site will be managed for the protection of significant natural resources and to provide interpretation of its ecosystems. Acquisition of this tract will help protect a widely recognizable and accessible view-shed, will contribute to the connectivity of adjacent protected land, and will help to preserve the pastoral and scenic nature of the New River. $1,460,000 PARTF. New private donation of $573,000. $390,628 of grant is funded using COPS

Table 5 - SPRING 2011 Awards Summary

No.	Agency	Project Title	County	Request	Award	Acres	Description
3	DENR/ZOO	Arnett Branch Longleaf Pine Forest Phase II	Montgomery	$132,325	$132,325	113	In partnership with the LandTrust for Central North Carolina (LTCNC), the North Carolina Zoo proposes to preserve the +/-112.5-acre Nichols Property, the last known remaining intact old growth Piedmont longleaf pine forest (200+ yrs old) of this size in the region. The Zoo requests funding for acquisition of +/- 31 acres of uplands with mature longleaf pine forest in Phase II of this project. A Clean Water Management Trust Fund application has been submitted for 35 acres of riparian buffers in Phase II ($123,875). NHTF awarded $150,000 for Phase I in Fall 2010. Private funding of $50,000 has purchased a two year option agreement and will go toward purchase price of the property. LTCN $11,800; $2,000 Zoo, CWMTF proposed $123,875; partial closing without CWMTF monies approved by NHTF.
4	DENR/DFR	Backbone Ridge Phase 2	Caldwell	$1,231,031	$1,231,031	241.8	Acquisition of the Backbone Ridge tract will insure the protection of 755 acres of high quality mountain habitat including 57,000 feet of streams and 585 Acres of riparian buffers. The tract adjoins the Pisgah National Forest on three sides and is a significant addition toward landscape conservation management in the region. The property will be managed by DFR as part of the State Forest system and offer opportunities for research, demonstration and education on natural resource protection and management in the vegetation types in existence upon the property. The tract will also be offered to NCWRC for inclusion in the Game Land program. Part of a 755 acre overall project split with US Forest Service. Funding is in place for state's Phase 1 with NHTF/CWMTF/Private funding. Phase 2 = CWMTF $1,129,710 pending, Private $1,042,579 confirmed.

Table 5 - SPRING 2011 Awards Summary

No.	Agency	Project Title	County	Request	Award	Acres	Description
5	DPR	Chimney Rock State Park: TNC/Rumbling Bald-King Tracts	Rutherford	$4,201,100	$2,100,000	1,222	As part of both the Southeastern Escarpment megasite and the Hickory Nut Gorge macrosite, this project is part of a larger conservation effort including The Nature Conservancy's Bat Cave and Rumbling Bald Preserves. At least sixteen significantly rare plants (four of which have federal status) have been documented on or near project property. Thirteen rare animal species, three with federal status have been found on or in close proximity to the project. This large tract makes up much of the northern slopes of Rumbling Bald Mountain and the valley between it and Weed Patch Mountain. Most of the project property lies within the Rumbling Bald / Shumont Mountain Significant Natural Heritage Areas. Properties will be part of Chimney Rock State Park and will be managed for the protection and interpretation of the natural resources. CWMTF $3.3 million; PARTF $15,000. Additional PARTF monies needed to close. NHTF monies are using COPS.
6	DENR/DFR	DuPont State Forest: Stone Mtn. Addition	Henderson	$522,400	$271,400	64.75	Tract shares a common boundary with DSF extending 1,700 feet, and creates a buffer from development along the Old CCC Road on the north side of Stone Mountain. The acquisition will protect 55 acres of the Stone Mountain/Rocky Ridge Significant Natural Heritage Area (Rank B), and confirmed habitat of state-endangered green salamander (*Aneides aeneus*) (FSC, S2). Stone Mountain has the most extensive system of rocky outcrops in Henderson County, is the highest point in DSF, and can be seen for miles. Other rare or uncommon fauna are likely present. Tract contains five natural communities, ranging in condition from "Good" to "Highly Significant." NHP staff noted, "the natural communities on the site are of exemplary quality and the presence of a Boulderfield Forest (locally rare) natural community is significant as well". $40,000 donated easement. Additional private donation $251,200.
	DENR				**$5,212,756**	**2,023**	

Table 5 - SPRING 2011 Awards Summary

No.	Agency	Project Title	County	Request	Award	Acres	Description
7	DACS/ PCP	Eastwood Preserve – Thomas Tract	Moore	$760,200	$760,200	60	The tract supports longleaf pine throughout and shares a common boundary with existing Eastwood Plant Conservation Preserve thereby providing buffer and enhanced manageability of currently protected lands which were purchased to protect the Sandhills Lily (Lilium pyrophilum), a state endangered species. If acquired, restoration and ecological management with prescribed fire will be a top priority. Tract is adjacent to Nationally Significant Nicks Creek/Eastwood Sandhills; excellent ecological restoration and management buffer opportunity.
8	DACS/ PCP	Boiling Spring Lakes - Corbett Tract	Brunswick	$243,464	$243,464	270	The proposed tract has high conservation due to the habitats and rare species present, contributing to the designation by NHP as "nationally significant". These values are further enhanced due to linkage with the Boiling Spring Lakes Plant Conservation Preserve lands. Although the Corbett tract is long unburned, extensive longleaf pine savanna with cane understory and a wide stream bottom are present, both of which are unusual or absent on adjacent protected lands. Acquisition of this parcel will help implement the larger site design concept for the preserve. A review of the map will demonstrate how this tract will help consolidate boundaries, thus expanding the ability to apply fire management to both this and existing properties. $114,000 private; federal funds USFWS - $142,900 (unofficially awarded).
	DACS			**$9,584,761**	**$1,003,664**	**330**	

Table 5 - SPRING 2011 Awards Summary

No.	Agency	Project Title	County	Request	Award	Acres	Description
9	WRC	Green Swamp Forests LLC - Phase II	Brunswick	$1,500,000	$158,103	81	The Green Swamp Forests LLC-Phase II- Full request would have encompassed 768 acres; partial funding estimated for 81 acres. This purchase will protect a nationally significant site that supports high species richness. In addition to protection, acquisition will afford establishment of a corridor that, in combination with Juniper Creek Game Land and the Green Swamp Preserve, will measure approximately 21 linear miles while providing security to the estuarine ecosystem by contributing towards protection of the headwaters of the Lockwood Folly River. The property will be incorporated into the WRC Game Lands Program and management by staff professionals. Fire and longleaf management will play a significant role in the long-term management of this tract. Phase III will be funded with CWMTF and federal CELCP monies.
	WRC			**$1,500,000**	$158,103	**81**	
	ALL APPs.			**$11,084,761**	**$6,374,523**	**2,434**	
							$0

Table 5 - SPRING 2011 Awards Summary

No.	Agency	Project Title	County	Request	Award	Acres	Description
	Note: matching monies are confirmed unless otherwise note						
	COPS = Certificates of Participation						CMLC = Carolina Mountain Land Conservancy
	DFR = Division of Forest Resources						EEP = Ecosystem Enhancement Program
	NHP = Natural Heritage Program						NOAA = National Oceanic & Atmospheric Administration
	DCM = Division of Coastal Management						CELCP = Coastal & Estuarine Land Conservation Program
	WRC = NC Wildlife Resources Commission						SNHA = Significant Natural Heritage Area
	DOT = Department of Transportation						NHTF = Natural Heritage Trust Fund
	DACS = Department of Agriculture & Consumer Services						CWMTF = Clean Water Management Trust Fund
	PCP = Plant Conservation Program						US = United States
	DCR = Department of Cultural Resources						NC = North Carolina
	USFWS = US Fish and Wildlife Services						RCW = Red Cockaded Woodpecker

Clean Water Management Trust Fund
2011 Annual Report

Environmental Review
Commission
North Carolina General
Assembly

Richard Rogers
Executive Director, CWMTF
December 14, 2011

CWMTF Background

- Established 1996 by General Assembly
- Board of Trustees (21 members)
- Non-regulatory program
- Projects funded
  - Wastewater Infrastructure
  - Restoration / Stormwater
  - Land Acquisition/Conservation Easements
    - Riparian buffers
    - Greenways
- CWMTF has allocated $ 970 Million
- Fund has leveraged $1.5 Billion

Implementation 2011 Budget

- In the 2011-12 budget the General Assembly repealed the CWMTF's $100 million statutory appropriation and provided $11.25 million to be used as:

  - $3,000,000 - administration and debt service;

  - $1,500,000 - the acquisition of property to protect military bases; and

  - $6,750,000 - water infrastructure projects, donated minigrants and the purchase of conservation easements.

Overview of CWMTF 2011 Awards

- Applications for more than $157,000,000
- Funded less than 10% of the need expressed in applications
- Awards made in 26 different counties across the state
- CWMTF funds will leverage an overall 65% in matching funds
- 76% of wastewater awards made to economically distressed communities
- Infrastructure awards focus on projects that are construction ready
- 17 awards will help to protect downstream water supplies serving over 1.8 million people

CWMTF 2011 Grant Awards

CWMTF 2011 Grant Awards

Project Type	Board Approved For Funding	Board Conditional Approval Pending Funds Becoming Available	Total Project Cost	% Matching Funds
Protection of Military Installations	$2,194,817	$0	$4,583,019	52%
Donated Minigrant*	$253,765	$0	$5,055,203	95%
Wastewater Infrastructure	$5,526,500	$2,433,221	$20,338,755	61%
Restoration/Stormwater Infrastructure	$2,092,811	$2,423,818	$12,320,606	63%
Total	**$10,067,893**	**$4,857,039**	**$42,297,583**	**65%**

* An additional $496,000 has been allocated for future minigrant awards during the fiscal year.

Program Administration
2008-2011

- During the course of this fiscal year, CWMTF will manage around 300 grant contracts totaling approximately $100 million.
  - Total administration budget has been reduced 38%
  - Over this same time period CWMTF has reduced its workforce by 38%
  - Also included in the reductions are cost savings to facilities and operations by 65%

2011 CWMTF Changes

HB 609 – Water Supply Development / Efficiency

- Fund Water Supply Reservoirs

- Enhancement or development of drinking water supplies

December 1, 2011

MEMORANDUM

TO: The Honorable Phil Berger, Co-Chair
The Honorable Thom Tillis, Co-Chair
Joint Legislative Commission on Government Operations

The Honorable David Rouzer, Chair
The Honorable Robert Mitchell Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair
Environmental Review Commission

The Honorable Don East, Co-Chair
The Honorable Carolyn Justice, Chair
The Honorable David Rouzer, Co-Chair
The Honorable Roger West, Chair
Subcommittees on Appropriations for Natural and Economic Resources

Mr. Mark Trogdon, Acting Director, Fiscal Research Division
Ms. Lanier McRee, Fiscal Research Division
Division of Fiscal Research, North Carolina General Assembly

FROM: Richard E. Rogers, Jr., Executive Director, CWMTF

Re: Clean Water Management Trust Fund's 2011 Annual Report

Introduction

The Board of Trustees of the Clean Water Management Trust Fund (CWMTF) is writing to thank the members of the General Assembly of North Carolina for your continuing support for investments in clean water and to make our annual report to the General Assembly and the public pursuant to GS 113A-257.

Water is the essence of life. All things that live rely on water to sustain themselves. As a state, our economic viability, health and ability to sustain ourselves and the natural environment all rely on clean water. The ability for the state to sustain its most important economies including agriculture, tourism and recreation require good water quality. To ensure sufficient drinking water supply for growing industry and the state's growing population, surface water must be protected. Since its start in 1996 the CWMTF, a non-regulatory program, has strived to protect North Carolina's surface water through a wide array of programs that include wastewater, stream and wetland restoration, stormwater, riparian buffer conservation and greenways. The program has actively managed more than 1,500 grants while leveraging more than $1.50 (totaling $1.5 Billion) for every $1.00 the state has invested with the fund.

In 2011 the CWMTF was able to fund close to 50 projects (Appendix 1) to protect, restore and enhance the surface waters to the state, yet the CWMTF left more than $125,000,000 in requests for projects unfunded. If funded these projects would have helped protect drinking water supplies and provided improved water quality to support the state's economy, improve our citizens' quality of life and sustain our natural heritage.

Today, the need for water quality protection is greater than ever because of the growing reliance the state will have on surface water to meet the drinking water needs of the growing population. The CWMTF has set its sights on aiding communities to help meet their need in protecting their drinking water supplies through drinking watershed protection as well as reservoir development. And with adequate funding the drinking water needs of the state can be met for generations to come. There remains a great deal of work that needs to be done to protect our surface waters in North Carolina.

Background

The 1996 General Assembly created the Clean Water Management Trust Fund (CWMTF). The purpose of the CWMTF is (Chapter 113A Article 18 (GS 113A-251 et seq.)), "to clean up pollution in the State's surface waters and to protect, preserve and conserve those waters that are not yet polluted." The CWMTF "shall be used to help finance projects that specifically address water pollution problems and focus on upgrading surface waters, eliminating pollution, and protecting, preserving, and conserving unpolluted surface waters, including enhancement or development of drinking water supplies" and "to build a network of riparian buffers and greenways for environmental, educational, and recreational benefits. It is lastly the intent of the General Assembly that moneys from the Fund also be used to preserve lands that could be used for water supply reservoirs."

The CWMTF is an independent non-regulatory agency housed for administrative purposes in the Department of Environment and Natural Resources (DENR.) A 21-member board of trustees establishes criteria, allocates funds, reviews applications, approves grants, and hires the executive director. Seven members are appointed by the Governor; seven by the General Assembly upon the recommendation of the President Pro Tempore of the Senate; and seven by the General Assembly upon the recommendation of the Speaker of the House. An advisory council composed of the

Commissioner of Agriculture, Chair of the Wildlife Resources Commission, Secretary of DENR, and Secretary of Commerce or their designees advises the board of trustees.

Local governments, state agencies, and nonprofit conservation organizations, such as land trusts, are eligible applicants. The next deadline for applications is February 1, 2012.

Moneys from CWMTF may be used to repair failing wastewater collection and treatment systems; to eliminate failing septic tanks and straight pipes; to prevent, reduce, collect and treat stormwater pollution; to acquire conservation easements or land in fee simple to preserve riparian buffers, wetlands, floodplains, and greenways; to restore riparian buffers, streams, and wetlands; to plan water quality projects; and for administration and staff. The board works through three principal committees: infrastructure/wastewater, restoration/stormwater/greenways, and land/conservation easement acquisition.

CWMTF application forms for grants, grant evaluation guidelines, enabling legislation, lists of the board of trustees, staff directory, news releases, and other reports and documents are available at www.cwmtf.net.

The executive director, a deputy director, wastewater/infrastructure project manager, restoration and stormwater project manager, water quality advisor, business officer, stewardship coordinator, acquisition program assistant, and infrastructure program assistant are based in the central office in Raleigh. Four field representatives cover the coast, piedmont and mountain regions of the state.

In 2011, the Board of Trustees met four times –once in Chapel Hill and three times in Raleigh. The board's regularly scheduled September and November meetings were cancelled.

2011 Summary

During FY 2010-2011 the Clean Water Management Trust Fund (CWMTF) was still recovering from the budget crisis of 2009 and the Governor's action to reallocate $115 million of its funding to help balance the budget deficit. At the beginning of 2010, CWMTF had more than a third of its 2008 grant awards ($40 million of $115 million) still on hold as a result of the budget crisis. After working with grant recipients to identify cost saving measures in its 2008 projects, the need was reduced from $40 million to $28 million and the board was able to use $35 million of its 2010-2011 funds for new 2010 project awards.

In FY 2010-2011 $2.4 million was allocated to fund remaining 2008 projects. With approximately $5.5 million remaining to fund 2008 projects, the board will continue to work to fund these projects in 2011-2012 according to authorized expenditure of funds by the legislature.

In the 2011-12 Budget the General Assembly eliminated CWMTF's statutory authorization of $100,000,000 and funded the program at $11,250,000. The Legislature also directed CWMTF to allocate funds towards COPs debt service, administration, the acquisition of property to protect military bases, water infrastructure projects, donated easement minigrants and the purchase of

conservation easements. The Board of Trustees authorized an annual administrative budget of up to $1.5 million for fiscal year 2011-2012 at its August 2011 meeting.

To date, the Board of Trustees has awarded $9.8 million dollars in new 2011 projects including $7.4 million on infrastructure projects and $2.2 million for military base protection acquisition projects and $.2 million in donated minigrants. (Appendix 1)

Budget Focus – Program Administration

The CWMTF administrative budget is approved annually by our Board of Trustees. The trustees take a very businesslike approach to the implementation of the program. Over the past 3 years the administrative budget has been reduced by $1,000,000 or 38%. This includes a 65% reduction in our operating cost and a total of 37% reduction in workforce over the same period of time. In just the last year CWMTF has reduced staff by almost 25%. CWMTF implemented a reduction in force plan that eliminated 4 permanent positions July 1, 2011.

The Fund has implemented these reductions by simplifying programs and processes and by reshaping its business practices. While making significant administrative changes, the program has improved its effectiveness in managing projects and stewarding state funds. Administrative reductions include: moving out of leased space and into state offices, eliminating all but one state cell phone and by eliminating a state vehicle and capping mileage. Through the trustee's oversight the Fund has been able to maintain and in some cases improve our management of the 300 ongoing grant contracts totaling nearly $100,000,000 dollars that the program will continue managing this year..

CWMTF's management structure is attached. (Appendix 2)

HB 609 – Promote Water Supply Development/Efficiency

This legislation provides CWMTF the authority to fund the acquisition of land for the purpose of water supply reservoirs. CWMTF is working to implement this legislation and will adopt criteria for the consideration of funding reservoirs in coordination with the Division of Water Resources which is responsible for the implementation of this legislation.

Summary

In 2011 CWMTF did not have the opportunity to fund but a small percentage of the applications. More than $127,000,000 in requests will go unfunded this year. However, the projects funded will support economically distressed communities help to protect the drinking water of almost 2 million North Carolina citizens and creating needed jobs in 26 counties.

CWMTF will continue to steward state dollars in its administration of grants and in funding projects that provide the greatest water quality benefit to the surface waters of the state. Water is a resource that is vital to current economic engines in North Carolina such as agriculture, tourism and recreation. Access to clean water is critical in recruiting new industry. It is important to continue to assist local governments with infrastructure needs and keep our surface water clean for business interests and the people of North Carolina.

Project Type	Board Approved For Funding	Board Conditional Approval Pending Funds Becoming Available	Total Project Cost	% Matching Funds
Protection of Military Installations	$2,194,817	$0	$4,583,019	52%
Donated Minigrant*	$253,765	$0	$5,055,203	95%
Wastewater Infrastructure	$5,526,500	$2,433,221	$20,338,755	61%
Restoration/Stormwater	$2,092,811	$2,423,818	$12,320,606	63%
Total	**$10,067,893**	**$4,857,039**	**$42,297,583**	**65%**

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Overview of CWMTF 2011 Awards:

* 46 awards made in 26 different counties across the state
* CWMTF funds will leverage an overall 65% in matching funds
* 76% of wastewater awards made to economically distressed communities
* Infrastructure awards focus on projects that are construction ready
* 17 awards will help to protect downstream water supplies serving over 1.8 million people in 26 different communities, with 3 communities serving over 250,000

Projects Receiving Final Awards

	Application Name	Board Approved For Funding	Board Conditional Approval Pending Funds Becoming	Total Project Cost	% Matching Funds	Proposed Project Description	County
	Protection of Military Installations						
1	NC Coastal Land Trust - Military Land Acquistion/ Lukens Island Phase III, Brown's Creek	$1,022,744		$2,375,344	57%	Acquire easements on 678 acres along Brown's Creek to protect water quality and the Marine Corps Piney Island Bombing Range from encroachment.	Carteret
2	NC Coastal Land Trust - Military Land Acquisition/ MCAS Cherry Pt, Lewis Farm Tract, Goodwin Cr	$427,125		$927,250	54%	Acquire 49 acres along an unnamed tributary to Goodwin Creek to protect MCAS Cherry Point military installation from encroachment. Property to be managed as park by City of Havelock.	Craven
3	Sandhills Area Land Trust - Military Land Acquisition/ Ft. Bragg, Thompson Tract, Deep River	$330,548		$451,625	27%	Acquire 116 acres along McLendons Creek to protect Ft. Bragg military training lands.	Moore
4	The Nature Conservancy- Military Land Acquisition/ Seymour Johnson AFB, Davis & Kilkenny Tracts, Alligator River	$414,400		$828,800	50%	Acquire 1,655 acres along the South West Fork of the Alligator River to protect the primary approach corridor to the Dare Co Bombing Range.	Tyrrell
	Protection of Military Installations Subtotal	**$2,194,817**		**$4,583,019**	52%		
	Donated Minigrants						
5	12 Donated Minigrants have been awarded to date	$253,765		$5,055,203	95%	Fund transaction costs to accept the donation of conservation easements on over 800 acres along streams across the state providing significant water quality benefits and matching funds.	

	Application Name	Board Approved For Funding	Conditional Approval Pending Funds Becoming Available	Total Project Cost	% Matching Funds	Proposed Project Description	County
	Wastewater Final Awards						
6	Bath, Town of - Wastewater/ WWTP & Disposal Upgrade, Carter Creek	$600,000		$1,388,915	57%	Fund first phase of a WWTP and disposal upgrade project to treat effluent to reuse standards and reduce pollutant loading to Carter Creek, a nutrient sensitive water in the Tar-Pamlico river basin.	Beaufort
7	Camden County - Septic Tanks/ South Mills Septic Tank Elimination, Dismal Swamp Canal	$600,000		$1,010,025	41%	Eliminate failing septic systems in South Mills Community by constructing septic tank effluent pump (STEP) systems to serve residences and the NCDOT Visitor Center. Waste would be transported to South Camden Water & Sewer District WWTP and would improve water quality in Dismal Swamp Canal.	Camden
8	Gastonia, City of - Wastewater/ Cramerton & Gastonia Regional Sewer Project, South Fork Catawba River	$600,000		$2,800,000	79%	Continues work to eliminate the Town of McAdenville and Pharr Yarns wastewater treatment plants and send wastewater to Gastonia Long Creek plant which will reduce pollutant loading to South Fork Catawba River, an impaired stream.	Gaston
9	Green Level, Town of - Wastewater/ Sewer Rehabilitation, Haw River	$220,000		$2,094,900	89%	Construct upgrade to Otter Creek pump station and force main to transport wastewater from GreenLevel to the East Burlington WWTP. Project will mitigate sewer overflows and reduce pollutant loading to Otter Creek, an impaired stream,and help protect downstream water supplies on the Haw River (serving Pittsboro) and on Jordan Lake (serving over 120,000 customers in Chatham County and Cary).	Alamance
10	Johnston County - Wastewater/ Community College Reclaimed Water System, Neuse River	$580,000		$1,532,000	62%	Expand Johnston County reclaimed wastewater disposal system to serve Johnston County Community College, Williams Lumber Company and Lampe Malphrus Lumber Company. Will decrease wastewater discharge and nutrient loading to the Neuse River, a nutrient sensitive waterbody, and help protect downstream water supply for Goldsboro.	Johnston
11	Maysville, Town of - Wastewater/ Treatment System Upgrades, White Oak River	$440,000		$550,000	20%	Construct first phase of a WWTP upgrade project by installing a pump station and force main to irrigate leased land with a reel gun until storage ponds and an infiltration basin can be funded. Will improve water quality in the White Oak River, a state significant aquatic habitat.	Jones

	Application Name	Board Approved For Funding	Conditional Approval Pending Funds Becoming Available	Total Project Cost	% Matching Funds	Proposed Project Description	County
12	Salisbury, City of - Wastewater/ WWTP Elimination, Second Creek	$600,000		$1,771,700	66%	Construct wastewater regionalization project to eliminate one pumping station and a poorly performing package treatment plant. Will reduce pollutant loading to Second Creek, an impaired stream, and help to protect downstream water supplies on the Yadkin River serving Denton and on Tuckertown Reservoir serving Albemarle.	Rowan
13	Stantonsburg, Town of - Wastewater/ WWTP Improvements Phase I, Contentnea Creek	$600,000		$2,054,400	71%	Construct WWTP improvements to reduce discharge of pollutants to Contentnea Creek, an impaired stream, and reduce nutrient loading to nutrient sensitive waters in the Neuse River basin.	Wilson
14	Taylorsville, Town of - Septic Tanks/ Lower Little River Catawba	$600,000		$1,950,335	69%	Construct wastewater collection system to eliminate failing septic systems in the community of Millersville and transport wastewater to Taylorsville's WWTP for treatment. Will improve water quality in the Lower Little River and help to protect a downstream water supply on Lake Norman, serving over 740,000 customers in the areas of Charlotte-Mecklenburg, Lincoln County, and Mooresville.	Alexander
15	Troy, Town of - Wastewater/ Discharge Reduction & Land Application, Densons Creek	$600,000		$1,219,919	51%	Construct pump station and force main to transport reuse quality effluent from Town's WWTP to municipal golf course for spray application. Will reduce pollutant loading to Denson's Creek, home of rare aquatic species, and help protect downstream water supply on the Pee Dee River serving Richmond and Anson Counties.	Montgomery
16	West Jefferson, Town of - Wastewater/ Sewer Rehabilitation, Little Buffalo Creek	$86,500		$183,000	53%	Replace gravity sewer and rehabilitate manholes to reduce wastewater spills to Little Buffalo Creek, an impaired stream, and to protect waters further downstream supporting trout and rare aquatic species.	Ashe
	Wastewater Final Awards Subtotal	**$5,526,500**		**$16,555,194**	**67%**		
	Restoration / Stormwater Final Awards						
17	Charlotte, City of - Stormwater/ South Park Campus Watershed Enhancement, Little Sugar Creek	$400,000		$1,544,764	74%	Construct 6 stormwater best management practices on multi-school campus which would help to improve downstream impaired Little Sugar Creek. Continues comprehensive local effort to improve water quality in Little Sugar Creek.	Mecklenburg

	Application Name	Board Approved For Funding	Conditional Approval Pending Funds Becoming Available	Total Project Cost	% Matching Funds	Proposed Project Description	County
18	Durham, City of - Stormwater/ LID Raincatchers Retrofit, Ellerbe Creek	$242,811		$436,881	44%	Install stormwater best management practices at 230 residences as a pilot project to determine the cost effectiveness of installing residential retrofits in reducing the pollutant loading to surface waters. Will improve the quality of runoff entering Ellerbe Creek, an impaired stream, and help to protect downsteam water supply on Falls Lake serving Raleigh (over 345,000 customers).	Durham
19	Mecklenburg County Stormwater Services - Restoration/ Torrence Creek Tributary #1 Restoration Phase I	$400,000		$2,089,000	81%	Continue stream restoration and enhancement work in Torrence Creek watershed. This will help to protect downstream water supply on Mountain Island Lake serving the Charlotte-Meckenburg area (over 775,000 served) and improve water quality in an impaired stream.	Mecklenburg
20	National Committee for the New River - Restoration/ South Fork Boone Greenway Restoration	$250,000		$1,956,100	87%	Construct stream enhancement project on South Fork New River at Town of Boone Greenway and ASU athletic fields. Will help to protect a downstream water supply on the South Fork New River serving the Town of Jefferson and pristine waters that support a significant aquatic habitat for rare species.	Watauga
21	NC Coastal Federation - Restoration/ Mattamuskeet Ventures Farm (Lux Farm) Watershed Restoration	$400,000		$934,273	57%	Fund phase I of a 3-phase project to reroute runoff from 42,500 acres of drained agricultural land back to its natural drainage pattern and help to protect sensitive shellfish waters. When completed, the effort will be the largest of its kind in NC to demonstrate the integration of innovative agricultural operations with water quality objectives.	Hyde
22	Resource Institue, Inc - Restoration/ Ararat Phase II Restoration & Greenway	$400,000		$985,085	59%	Construct 3 stormwater best management practices in developed areas to improve water quality in the Ararat River and help to protect downstream water supply on Yadkin River serving Davie County and King. Complete preliminary design for stream enhancement on Ararat River & Lovills Ck, which will be integrated & complementary to greenway design along same reaches.	Surry
	Restoration /Stormwater Final Awards Subtotal	**$2,092,811**		**$7,946,103**	**74%**		

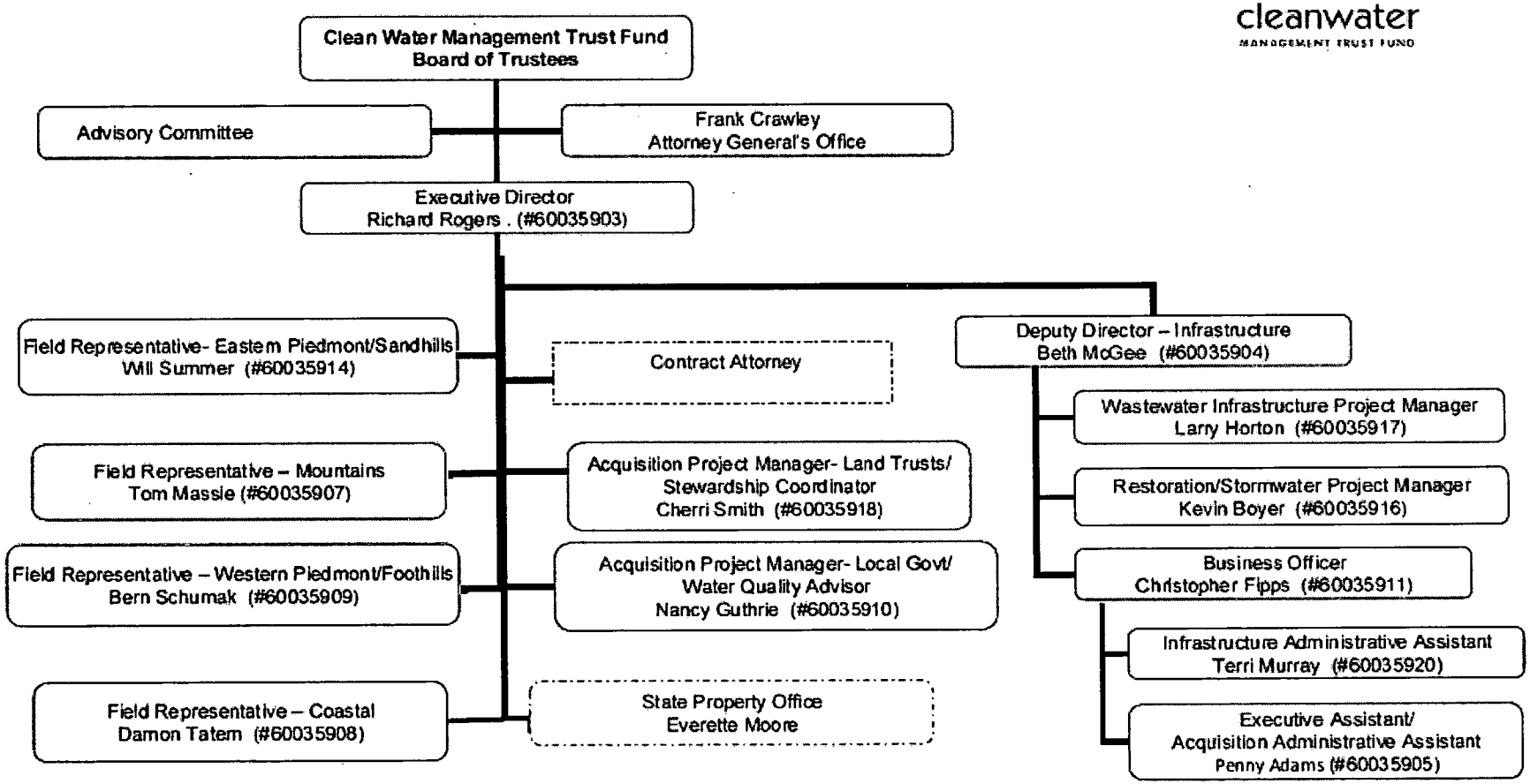
	Application Name	Board Approved For Funding	Conditional Approval Pending Funds Becoming Available	Total Project Cost	% Matching Funds	Proposed Project Description	County
	Projects Receiving Conditional Awards Pending Funds Becoming Available						
	Wastewater Conditional Awards						
23	Fairmont, Town of - Wastewater/ Sewer Rehabilitation Phase I, Lumber River		$600,000	$1,000,000	40%	Replace and rehabilitate sewer lines and manholes to reduce overflows of untreated sewage and improve water quality in the Lumber River, a state significant aquatic habitat with rare aquatic species.	Robeson
24	Thomasville, City of - Wastewater/ Sewer Rehabilitation, Hamby Creek		$563,750	$668,175	16%	Upgrade the East Davidson pump station to mitigate overflows of untreated sewage to Hamby Creek, and impaired stream, and help to protect downstream water supplies on Badin Lake, Yadkin River and Tuckertown Reservoir serving Albemarle and Denton.	Davidson
25	Ayden, Town of - Wastewater/Sewer Rehabilitation, Swift Cr		$180,160	$225,200	20%	Replace sewer lines and manholes to mitigate exfiltration/infiltration and overflows into Swift Creek, an impaired stream in the Neuse River basin.	Pitt
26	Pembroke, Town of - Wastewater/ Sewer Rehabilitation, Bear Swamp		$600,000	$750,000	20%	Rehabilitate gravity sewers and add standby power at 10 pump stations to mitigate overflows and reduce pollutant loading to a downstream water supply on the Lumber River serving Lumberton, and into Bear Swamp, an impaired stream. Will also reduce hydraulic loading to Pembroke WWTP.	Robeson
27	Saratoga, Town of - Wastewater/ Sewer Rehabilitation, Toisnot Swamp		$459,811	$1,106,401	58%	Rehabilitate manholes, repair sewer service lateral connections to the sewer main, and improve pump stations to reduce hydraulic leading to the Stantonsburg WWTP and improve water quality in Toisnot Swamp in the Neuse River basin.	Wilson
28	Enfield, Town of - Septic Tanks/ Watson St Septic Tank Elimination, Fishing Creek		$29,500	$33,785	13%	Construct gravity sewer and service laterals to residences along Cub Drive to eliminate failing septic tanks and improve water quality in Fishing Creek and a downstream water supply on the Tar River serving Tarboro.	Halifax
	Wastewater Conditional Awards Subtotal		**$2,433,221**	**$3,783,561**	**36%**		
	Restoration / Stormwater Conditional Awards						
29	RiverLink - Stormwater/ Ross Creek Stormwater & Restoration		$365,000	$909,000	60%	Construct 7 stormwater best management practices to reduce pollutant loading from existing development into Ross Creek, an impaired stream. Helps to begin implementation of the City's master plan for the watershed.	Buncombe

	Application Name	Board Approved For Funding	Conditional Approval Pending Funds Becoming Available	Total Project Cost	% Matching Funds	Proposed Project Description	County
30	Pilot View RC&D, Inc - Restoration/ Elkin Creek Stream Restoration & Riparian Buffer Enhancement		$371,038	$526,697	30%	Construct stream enhancement project along Elkin Creek which will help protect downstream water supplies on the Yadkin River serving Winston-Salem (over 275,000 customers), Davie County, King and Jonesville. Will also improve water quality in Elkin Creek, a trout stream.	Surry
31	Durham Soil & Water Conservation District - Restoration/ Upper Sandy Creek Restoration Phase V		$370,100	$475,819	22%	Construct stormwater wetland to treat runoff from developed areas and stream restoration project along portion of unnamed tributary to Upper Sandy Creek. Part of a larger water quality improvement project in the watershed and would help protect downstream water supply at Jordan Lake serving Chatham County and Cary (over 120,000 customers).	Durham
32	Charlotte, City of - Stormwater/ McDonald Pond Rehabilitation, Irwin Creek		$200,000	$625,715	68%	Reconstruct pond's dam and spillway structure to optimize its performance in treating runoff from 98 acres and to improve water quality in Irwin Creek, an impaired stream.	Mecklenburg
33	Mecklenburg County Stormwater Services - Restoration/ Upper Torrence Creek Restoration Phase I		$400,000	$957,800	58%	Continue stream restoration and enhancement work in Torrence Creek watershed. This will help to protect downstream water supply on Mountain Island Lake serving the Charlotte-Meckenburg area (over 775,000 served) and improve water quality in an impaired stream.	Mecklenburg
34	Durham Soil & Water Conservation District - Stormwater/ Southern High School Stormwater BMP Construction, Chunky Pipe Creek		$320,000	$370,692	14%	Construct stream stabilization project to improve water quality in Chunky Pipe Creek, an impaired stream, and help protect downstream water supply on Falls Lake for City of Raleigh (serving over 345,000 customers). Design, permit and record easements for a stormwater wetland to improve stormwater runoff from high school.	Durham
35	Pilot View RC&D, Inc - Restoration/ Linville River Watershed Phase III Restoration		$397,680	$508,780	22%	Construct stream restoration or enhancement project on the Linville River and a tributary. Would help to protect trout stream and dowstream water supplies on Lake Rhodhiss and the Catawba River serving Morganton, Lenoir, Granite Falls and Valdese.	Avery
	Restoration / Stormwater Conditional Awards Subtotal		**$2,423,818**	**$4,374,503**	**45%**		

Clean Water Management Trust Fund Organizational Chart With Position Numbers

Appendix 2

cleanwater
MANAGEMENT TRUST FUND



Current as of 07-2011

= part time contract employee

Clean Water Management Trust Fund - Projects Not Funded in the 2011 Awards Cycle				
Application ID	**Applicant/Project Name**	**Amount Requested**	**Total Project Cost**	**County**
Wastewater Infrastructure				
2011-505	Bladenboro, Town of - WW/ Sewer Rehabilitation Phase I, Big Swamp	$489,000.00	$1,023,308.00	Bladen
2011-607	Northwest, City of - Septic/ Sanitation Improvement, Cape Fear River	$944,000.00	$1,444,023.00	Brunswick
2011-514	Kannapolis, City of - WW/ Reclaimed Water Plant, Rocky River	$3,000,000.00	$15,558,920.00	Cabarrus
2011-518	Lenoir, City of - WW/ Lower Creek Biosolids Facility Improvements	$3,000,000.00	$5,950,000.00	Caldwell
2011-507	Claremont, City of- WW/ Regionalization Planning & Design Implementation, Lyle & McLin Creeks	$500,000.00	$600,000.00	Catawba
2011-506	Chadbourn, Town of - WW/ WWTP Upgrades, Soules Swamp	$435,000.00	$549,802.00	Columbus
2011-810	Vanceboro, Town of - WW/ Plan/ Sanitary Sewer Evaluation, Swift Creek	$40,000.00	$60,000.00	Craven
2011-530	Spring Lake, Town of - WW/ Reclaimed Water System, Lower Little River	$2,871,682.00	$5,743,365.00	Cumberland
2011-515	Kill Devil Hills, Town of - WW/ Purchase of Kill Devil Hills WWTP, Buzzard Bay	$3,300,000.00	$3,300,000.00	Dare
2011-603	Edgecombe Water & Sewer District No 4 - Septic/ Town of Speed Septic Tank Elimination, Deep Creek	$3,000,000.00	$5,000,000.00	Edgecombe
2011-525	Robbinsville, Town of - WW/ WWTP Upgrades, Cheoah River	$3,000,000.00	$7,000,000.00	Graham
2011-528	Scotland Neck, Town of - WW/ Sewer Rehabilitation Phase V, Canal Creek	$2,197,231.00	$2,697,231.00	Halifax
2011-512	Hoke County - WW/ Water Reuse, Rockfish Creek	$3,000,000.00	$6,020,000.00	Hoke
2011-529	Selma, Town of - WW/ Sewer Rehabilitation, Bawdy Swamp	$273,000.00	$334,230.00	Johnston
2011-516	Kinston, City of - WW/ Queen Street Sewer Rehabilitation, Neuse River	$1,600,000.00	$2,000,000.00	Lenoir
2011-517	Kinston, City of - WW/ WWTP Biosolids Composting	$532,000.00	$665,000.00	Lenoir
2011-605	Highlands, Town of - Septic/ Lake Sequoyah Wastewater Collection, Cullasaja River	$3,000,000.00	$3,750,000.00	Macon
2011-521	Moore County - WW/ Discharge Elimination, Little River	$1,443,713.00	$2,672,913.00	Moore
2011-502	Bailey, Town of - WW/Sewer Rehabilitation, Camp Branch	$636,000.00	$1,082,000.00	Nash
2011-522	Onslow Water & Sewer Authority - WW/ Package Plant Elimination, Dunns Marsh	$2,844,195.00	$4,184,000.00	Onslow
2011-602	Candlewick Area Sanitary District- Septic/ Engineering Design for Sewer Rehabilitation, Little Contentnea Creek	$133,000.00	$133,000.00	Pitt
2011-608	Simpson, Village of - Septic/ Simpson Septic Tank Elimination, Bates Branch	$1,806,180.00	$4,969,181.00	Pitt
2011-606	Hoffman, Town of - Septic/ Design Permitting & Acquisition for Hoffman Wastewater Collection, Drowning Creek	$3,000,000.00	$7,224,000.00	Richmond

2011-519	Lumberton, City of - WW/ Sewer Rehabilitation, Stormwater Separation, Lumber River	$1,623,600.00	$1,804,000.00	Robeson
2011-523	Parkton, Town of - WW/ Regional Wastewater System Implementation, Dunns Marsh	$3,000,000.00	$3,835,400.00	Robeson
2011-531	St. Pauls, Town of - WW/ Sewer Rehabilitation, Big Marsh Swamp	$430,350.00	$453,000.00	Robeson
2011-536	Wingate, Town of - WW/ Sewer Rehabilitation, Ray's Fork	$770,000.00	$2,823,000.00	Union
2011-504	Beech Mountain, Town of - WW/ Grassy Gap Sewer Rehabilation Phase 1, Buckeye Creek	$500,000.00	$758,800.00	Watauga
2011-509	Elm City, Town of - WW/ Sewer Rehabilitation, Town Creek	$90,000.00	$110,000.00	Wilson
Restoration/Stormwater/Greenways				
2011-709	Piedmont Conservation Council - Storm/ Alamance Community College Stormwater Mgmt, Haw River	$429,350.00	$464,000.00	Alamance
2011-411	Pilot View RC & D - Rest/ Bledsoe Creek Stream Restoration & Stormwater	$955,000.00	$1,985,269.00	Alleghany
2011-421	Resource Institute - Rest/ Little Pine & Brush Creeks Restoration	$529,238.00	$657,585.00	Alleghany
2011-710	Pilot View Rc & D - Storm/ Sparta Stormwater BMPs, Bledsoe Creek	$437,050.00	$696,050.00	Alleghany
2011-406	National Committee for the New River - Rest/ Helton Creek Restoration	$135,882.00	$175,838.00	Ashe
2011-409	New River SWCD - Rest/ Grassy Creek Restoration	$142,400.00	$223,288.00	Ashe
2011-805	National Committee for the New River - Rest/ Plan/ New River Watershed Study	$35,000.00	$90,000.00	Ashe
2011-401	Appalachian Voices - Rest/ Elk River Restoration	$108,500.00	$216,945.00	Avery
2011-701	Avery County School Board - Storm/ Avery County High School Stormwater Wetland, Kentucky Creek	$309,000.00	$386,281.00	Avery
2011-802	Elizabethtown, Town of - Green/Plan/ Tory Hole Park Greenway Master Plan, Cape Fear River	$40,000.00	$144,000.00	Bladen
2011-713	RiverLink, Inc. - Storm/ Odyssey School Stormwater, Reed Creek	$122,635.00	$379,675.00	Buncombe
2011-702	Carolina Land & Lakes RC & D - Storm/ Drexel Heritage Stormwater BMPs, Hunting Creek	$296,668.00	$857,168.00	Burke
2011-422	Resource Institute - Rest/ Upper Kings Creek Watershed Restoration	$2,003,980.00	$3,313,888.00	Cleveland
2011-809	Lake Waccamaw, Town of - Storm/Plan/ Water Quality Monitoring Program	$43,200.00	$45,200.00	Columbus
2011-715	Tryon Palace Council of Friends - Storm/ Wetland Replanting, Trent River	$28,125.00	$31,125.00	Craven
2011-707	Hope Mills, Town of - Storm/ Lake Snack Bar Stormwater, Hope Mills Lake	$34,224.00	$48,200.00	Cumberland
2011-414	Pilot View RC & D - Rest/ Rich Fork & Abbotts Creeks Restoration	$687,225.00	$730,925.00	Davidson
2011-807	Piedmont Triad Council of Government - Rest/ Plan/ Swearing Creek Watershed Restoration Plan	$52,300.00	$255,656.00	Davidson
2011-402	Durham SWCD - Rest/ Stirrup Iron Creek Restoration	$530,730.00	$823,891.00	Durham
2011-423	Roanoke Rapids Sanitary District - Rest/ Roanoke River Tributary Restoration	$923,600.00	$1,250,500.00	Halifax

2011-419	Resource Institute - Rest/ Garden Creek Restoration, Pigeon River	$190,600.00	$230,600.00	Haywood
2011-425	Upper Callasaja Watershed Association - Rest/ Callasaja Club Stream Restoration, Callasaja River	$60,000.00	$2,518,440.00	Macon
2011-428	Mecklenburg SWCD - Rest/ Urban Cost Share Program	$25,000.00	$50,000.00	Mecklenburg
2011-201	Candor, Town of- Green/Candor Greenway Phase I, Little River	$220,300.00	$269,000.00	Montgomery
2011-803	Troy, Town of - Green/ Troy Greenway Expansion	$24,000.00	$30,000.00	Montgomery
2011-808	Oriental, Town of - Storm/Plan/Raccoon Creek Stormwater Study, Raccoon Creek	$10,000.00	$10,000.00	Pamlico
2011-410	Pamlico-Tar River Foundation - Rest/ Greenville County Club Stream & Wetland Restoration	$2,046,019.00	$2,633,162.00	Pitt
2011-711	Polk SWCD - Storm/ Middle School & Recreation Complex Stormwater BMPs, Little White Oak Creek	$283,700.00	$294,700.00	Polk
2011-202	Randleman, City of - Green/ Deep River Nature Trail, Deep River	$99,700.00	$137,000.00	Randolph
2011-806	Piedmont Triad Council of Government - Rest/ Plan/ Asheboro Municipal Watershed Restoration Plan, Haskett Creek	$51,300.00	$220,396.00	Randolph
2011-420	Resource Institue - Rest/ Hitchcock Creek Stream & Wetland Restoration	$661,000.00	$1,062,026.00	Richmond
2011-408	NC Division of Soil & Water Conservation - Rest/ Conservation Reserve Enhancement Program Phase V	$2,673,636.00	$7,432,895.00	Statewide/Regional
2011-708	NC Division of Soil & Water Conservation - Storm/ Community Conservation Assistance Program	$906,246.00	$1,504,961.00	Statewide/Regional
2011-203	Walnut Cove, Town of - Green/ Walnut Cove Greenway	$153,280.00	$386,130.00	Stokes
2011-415	Pilot View RC & D - Rest/ Stewarts Creek Restoration	$590,555.00	$843,215.00	Surry
2011-417	Resource Institute - Rest/ Big Creek Phase 2 Stream Restoration	$654,680.00	$714,138.00	Surry
2011-424	Surry SWCD - Rest/ Horne Creek Stream Restoration	$374,500.00	$436,200.00	Surry
2011-205	Wingate, Town of - Green/ Wingate Greenway	$46,000.00	$281,500.00	Union
2011-712	Raleigh, City of - Storm/ East College Park Water Quality Improvements, Walnut Creek	$222,000.00	$631,000.00	Wake
2011-204	Watauga County - Green/ South Fork New River Greenway	$453,520.00	$566,900.00	Watauga
2011-426	Wilkes Community College - Rest/ Moravian Creek Restoration	$754,000.00	$946,680.00	Wilkes
2011-427	Wilkesboro, Town of - Rest/ Tuckerhole Creek Restoration	$485,000.00	$722,260.00	Wilkes
2011-716	Wilson, City of - Storm/ Merrimont Park Stormwater Quality, Hominy Swamp Creek	$700,859.00	$1,115,791.00	Wilson
2011-418	Resource Institute - Rest/ Cane River Restoration	$394,500.00	$473,040.00	Yancey
2011-804	Blue Ridge RC & D - Rest/ Plan Cane River Dam Removal & Stream Restoration Phase I	$538,700.00	$820,520.00	Yancey
Acquisition				
2011-001	Alamance County Recreation & Parks - Acq/ Cane Mountain/ Faircloth Tract, Varnals Creek	$255,500.00	$336,400.00	Alamance
2011-020	Mebane, City of - Acq/ Cates/Swarthmoor Farm, Mill Creek	$1,855,000.00	$4,570,000.00	Alamance

2011-017	Land Trust for Central NC - Acq/ Conrad Brewer Tract, Brown Creek	$181,450.00	$187,050.00	Anson
2011-023	Nature Conservancy, The - Acq/ Community One Bank Tract, Little Phoenix Creek	$940,633.00	$1,800,633.00	Ashe
2011-026	Nature Conservancy, The - Acq/ Hightower Tract, Three Top Creek	$1,167,109.00	$1,667,109.00	Ashe
2011-036	NC Division of Parks & Recreation - Acq/ Vannoy Heirs Phase II, Naked Creek	$953,000.00	$1,913,000.00	Ashe
2011-004	Blue Ridge Conservancy - Acq/ Schenck Tract, Linville River	$2,592,868.00	$8,927,425.00	Avery
2011-027	Nature Conservancy, The - Acq/ Mitchell Tract, Justice Creek	$860,845.00	$1,629,395.00	Avery
2011-041	North American Land Trust - Acq/ Williams Tract, Jones & Pyatt Creeks	$2,091,000.00	$5,161,000.00	Avery
2011-042	Southern Appalachian Highlands Conservancy - Acq/ National Trails Tract, Roaring Creek	$737,133.00	$1,859,450.00	Avery
2011-025	Nature Conservancy, The - Acq/ Green Swamp, pinch Gut	$2,239,388.00	$3,926,688.00	Brunswick
2011-044	Sunset Beach, Town of - Acq/ Town Park Acquisition, Mary's Creek	$150,000.00	$3,400,000.00	Brunswick
2011-005	Carolina Mountain Land Conservancy - Acq/ Camp Woodson Tract, UT Flat Creek	$557,480.00	$2,451,480.00	Buncombe
2011-011	Conservation Trust for NC - Acq/ heffner Gap Tract, UT Honeycutt Creek	$159,113.00	$740,812.00	Caldwell
2011-032	NC Division of Forest Resources - Acq/ Backbone Ridge Tract Phase II, Racket Creek	$1,629,710.00	$8,422,762.00	Caldwell
2011-028	Nature Conservancy, The - Acq/ Riverstone Tract, Waccamaw River	$14,840,616.00	$19,459,716.00	Columbus
2011-037	NC Division of Soil & Water Conservation - Acq/ Swine Buyout Program, Phase V	$730,750.00	$743,750.00	Craven
2011-033	NC Division of Parks & Recreation - Acq/ Black Meadow Ridge Tracts, Eno River	$571,000.00	$3,408,500.00	Durham
2011-046	Tar River Land Conservancy - Acq/ Bell's Bridge Tract, Tar River	$40,950.00	$73,730.00	Edgecombe
2011-047	Tar River Land Conservancy - Acq/ Fishing Creek Floodplain Forest, Fishing Creek	$383,590.00	$746,490.00	Edgecombe
2011-048	Tar River Land Conservancy - Acq/ Huckleberry Ridge Tracts, Tar River	$1,902,930.00	$3,179,430.00	Edgecombe
2011-045	Tar River Land Conservancy - Acq/ Beckham Tract, Tar River	$77,480.00	$117,680.00	Franklin
2011-034	NC Division of Parks & Recreation - Acq/ Harrell Tract, Bennett's Creek	$75,000.00	$182,715.00	Gates
2011-052	Tar River Land Conservancy - Acq/ Triassic Basin Tract, Tar River	$96,060.00	$206,560.00	Granville
2011-029	Nature Conservancy, The - Acq/ Wheatly Farms Tract, Roanoke River	$492,187.00	$992,187.00	Halifax
2011-051	Tar River Land Conservancy - Acq/ Quality Forest Tract, Fishing Creek	$55,025.00	$95,025.00	Halifax
2011-053	Triangle Land Conservancy - Acq/ Massengill Tract, Neuse River	$668,212.00	$971,262.00	Johnston
2011-019	Land Trust for the Little Tennesse - Acq/ Lakey Creek/Potts Branch Tracts, Little Tennessee River	$99,900.00	$306,420.00	Macon
2011-014	Foothills Conservancy of NC - Acq/ Kerlee Tract, Glade Creek	$663,760.00	$1,235,485.00	McDowell
2011-015	Foothills Conservancy of NC - Acq/ Silver Tract, Cutris Creek	$371,460.00	$657,600.00	McDowell

2011-012	Davidson, Town of - Acq/ Abersham Tract, West Branch Rocky River	$1,265,245.00	$1,621,405.00	Mecklenburg
2011-016	Land Trust for Central NC - Acq/ Capel Tract, Uwharrie River	$475,000.00	$2,008,100.00	Montgomery
2011-018	Land Trust for Central NC - Acq/ Pugh Tract, Uwharrie River	$321,600.00	$543,100.00	Montgomery
2011-039	NC Zoological park - Acq/ Arnett Branch Longleaf Pine Forest Preservation, West Fork Little River	$123,875.00	$473,718.00	Montgomery
2011-043	Star, Town of - Acq/ McFetters Tract, Forks of the Little River	$71,933.00	$114,100.00	Montgomery
2011-040	New Hanover County - Green/ Smith Creek Greenway	$110,350.00	$115,225.00	New Hanover
2011-031	NC Coastal Land Trust - Acq/ Virginia LLC Tract, Meherrin River	$709,309.00	$1,760,109.00	Northampton
2011-022	Nature Conservancy, The - Acq/ Brunswick Timber LLC Tract, Shelter Swamp Creek	$3,305,780.00	$10,856,992.00	Onslow
2011-013	Eno River Association - Acq/ Highland Farm Tract, Upper Eno River	$138,386.00	$190,160.00	Orange
2011-021	Nature Conservancy, The - Acq/ Birgil Tract, Black River	$311,665.00	$585,965.00	Pender
2011-024	Nature Conservancy, The - Acq/ Godwin Tract, NE Cape Fear River	$264,960.00	$423,880.00	Pender
2011-801	Lake Lure, Town of - Acq/Plan/ Town Center Master Plan Development, Upper Broad Watershed	$63,600.00	$133,600.00	Rutherford
2011-002	Albemarle, City of - Acq/ Rock Creek Park Expansion	$35,000.00	$79,100.00	Stanly
2011-008	Catawba Lands Conservancy - Acq/ Carolina Thread Trail	$3,000,000.00	$6,000,000.00	Statewide/Regional
2011-006	Carolina Mountain Land Conservancy - Acq/ Eagle's Nest Branch Tract, Eagle's Nest Branch	$393,880.00	$875,730.00	Transylvania
2011-007	Carolina Mountain Land Conservancy - Acq/ Thompson River Headwaters, Thompson River	$373,680.00	$1,049,610.00	Transylvania
2011-010	Conservation Fund, The - Acq/ East Fork of the French Broad Headwaters, Phase II	$6,087,000.00	$12,087,000.00	Transylvania
2011-009	Conservation Fund, The - Acq/ Texas Plantation Tract, Little Alligator River	$1,730,712.00	$2,304,434.00	Tyrrell
2011-054	Trust for Public Land - Acq/ Goldston Tract, Beaverdam Creek Reservoir	$854,950.00	$2,144,950.00	Wake
2011-038	NC Wildlife Resources Commission - Acq/ Tar River Timber & Rankin Tracts, Shocco Creek	$113,000.00	$472,000.00	Warren
2011-049	Tar River Land Conservancy - Acq/ Lawrence Tract, Fishing Creek	$67,705.00	$120,205.00	Warren
2011-050	Tar River Land Conservancy - Acq/ Possumquarter Tracts, Possumquarter Creek	$192,480.00	$364,980.00	Warren
2011-035	NC Division of Parks & Recreation - Acq/ Patrick Tracts, Scuppernong River	$170,000.00	$371,000.00	Washington
2011-003	Blue Ridge Conservancy - Acq/ Proffitt & Ray Tract Tater Hill Bog, Norris Fork	$1,916,420.00	$3,020,420.00	Watauga
2011-055	Wilson, City of - Acq/ Hominy Swamp Water Quality Project, Hominy Swamp Creek	$55,380.00	$74,245.00	Wilson

North Carolina
Agricultural Development and Farmland Preservation Trust Fund

2011 Report to the Environmental Review Commission

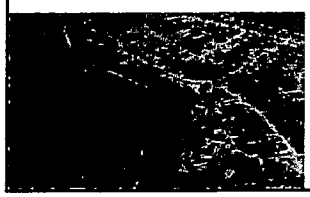
Dewitt Hardee
Manager
Environmental Programs
NC ADFP Trust Fund
NCDA&CS

ADFP Trust Fund Purpose

To fund projects that encourage the preservation of qualifying agricultural, horticultural, and forest lands, and to foster the growth, development, and sustainability of family farms.

Grant Priorities:

- conservation easements (permanent easements)
- agricultural agreements (term easements)
- sustainable and viable agriculture programs

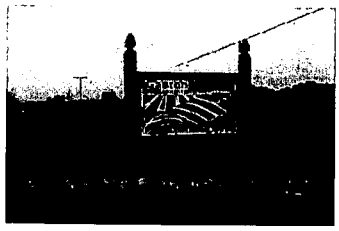




Who Can Apply?

- Counties





- Non-Profit Conservation Groups

ASAP Appalachian Sustainable Agriculture Project

North Carolina Foundation for Soil & Water Conservation, Inc.

Catawba Lands Conservancy

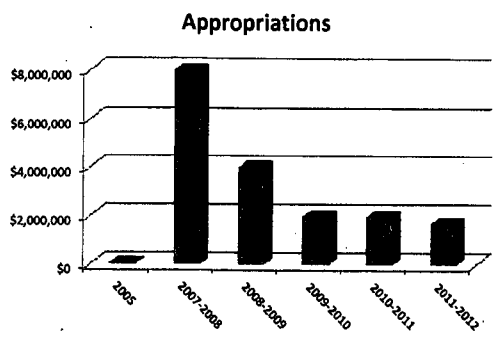
tlc Triangle Land Conservancy

ADFP Funding History

- 2005 - Initial appropriation of **$50,000** from the General Assembly

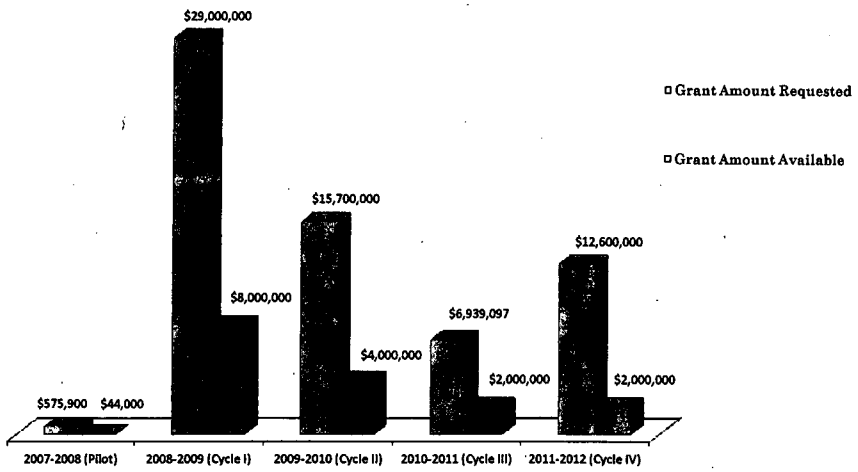
- **2007-2008 - $8 million**
- **2008-2009 - $4 million**
- **2009-2010 - $2 million**
- **2010-2011 - $2 million***
- **2011-2012 - $1.7 million**

* $2,173,989 returned at the request of the Office of State Budget and Management



Grant Requests

All Cycles



ADFP Completed Projects

All Cycles



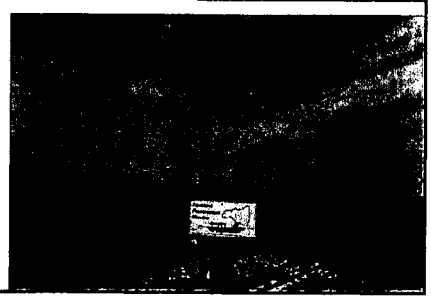
Easements

Total Easements:	34
Total Farm Acreage Protected:	6,204
Amount Awarded:	$7,545,829
Matching Funds:	$17,422,488

Plans & Projects

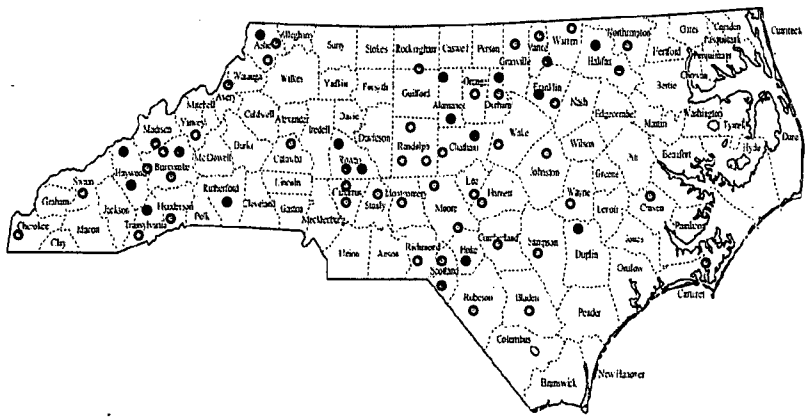
Total Projects:	46
Amount Awarded:	$2,181,911
Matching Funds:	$4,063,017

Total Amount Awarded: **$9,727,740**
Total Grant Impact: **$31,213,245**



Closed Grants Map

Cycles I-III



* Does not denote physical location of farm

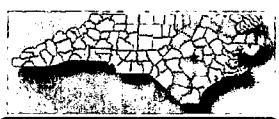
- Easements
- Plans / Projects

Examples of Major Regional Projects

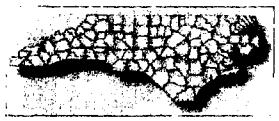
Cycle I



Operation Spring Plant: Helped limited-resource farmers develop alternate fuels by providing a soybean crusher.



Natural Capital Investment Fund: Assisted in the purchase of farm storage bins for limited-resource farmers



NC Association for Dairy Stabilization and Growth: Development of a dairy strategic plan that will work to improve opportunities for conventional and grass-fed dairies in North Carolina

Cycle II



NC Farm Transition Network: Developed a statewide program to finance beginning farm loan applications to attract new farmers, and worked to enhance the role of local and community banks in new farm financing



The Mixing Bowl: Assisted with the development of a publication and a website that linked local food suppliers to area buyers in Western NC



NC Foundation for Soil & Water Conservation: Assisted the NC Soil and Water Districts to analyze the status of 96 conservation districts and work to preserve farms and forests

ADFP Easement Recordings Update
July 1, 2010 – June 30, 2011

Rollans Farm Easement
The Land Trust for Central North Carolina
266.23 acres

Starnes Farm Easement
Rowan County Soil and Water Conservation District
150.82 acres

Bunn Farm Easement
Triangle Land Conservancy
287.83 acres

Hickory Nut Gap Farm Easement (II)
Southern Appalachian Highlands Conservancy
28.337 acres

Whitaker Farm Easement
Piedmont Land Conservancy
97.710 acres

Gainey Farm Easement
Sandhills Area Land Trust
171.360 acres

New Lake Farm Easement
Hyde County Soil & Water District
250 acres

Wilkie Farm Easement
Fishing Creek Soil & Water District
34.36 acres

Snelson Farm Easement
Buncombe County Soil & Water District
139.07 acres

Henson Easement
Southwestern NC RC&D Council
13 acres

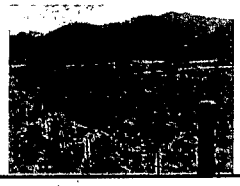
Gainey II Easement
Sandhills Area Land Trust
94.86 acres

Petch Easement
Brunswick County Soil and Water Conservation District
101.15 acres

Rising Meadows Easement
Piedmont Land Conservancy
63.94 acres

Lois Knox Farm Easement
Land Trust of Central North Carolina
196.0 acres

Henson Farm



Gainey Farm



ADFP Grant Update

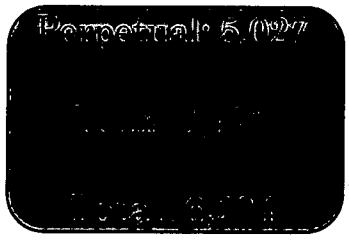
As of Nov. 30, 2011

Grant Type/ Cycle	ADFP Expenditures Closed Grants	Total Project Amount Closed Grants	ADFP Encumbrances Open Grants	Total Project Amount Open Grants	Acreage Closed Easements	Acreage Open Easements	Grants Closed	Grants Open
Easements / I	$4,601,399	$11,292,860	$252,000	$1,034,700	2,927	306	18	1
Plans & Projects / I	$1,484,607	$2,589,534	$675,000	$874,250			19	1
Total / Cycle I	$6,086,006	$13,882,394	$927,000	$1,908,950	2,927	306	37	2
Easements / II	$2,732,140	$13,342,056	0	0	3,101	0	14	0
Plans & Projects / II	$499,771	$856,050	0	0			20	0
Total / Cycle II	$3,231,911	$14,198,106	0	0	3,101	0	34	0
Easements / III	$212,290	$333,401	$1,814,460	$6,805,363	176	1,104	2	11
Plans & Projects / III	$197,533	$2,799,344	$125,000	$174,000			7	2
Total / Cycle III	$409,823	$3,132,745	$1,939,460	$6,979,363	176	1,104	9	13
Easements/ IV	0	0	$1,302,323	$6,056,422	0	747	0	9
Plans & Projects / IV	0	0	$503,000	$782,688			0	10
Total/ Cycle IV	0	0	$1,805,323	$6,839,110	0	747	0	19
Easements / All	$7,545,829	$24,968,317	$3,368,783	$13,896,485	6,204	2,157	34	21
Plans & Projects / All	$2,181,911	$6,244,928	$1,303,000	$1,830,938			46	13
Total / All	$9,727,740	$31,213,245	$4,671,783	$15,727,423	6,204	2,157	80	34

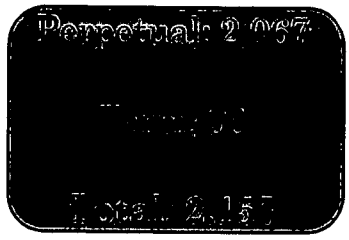
Total Easement Acreage

All Cycles

CLOSED



OPEN



Open Grants

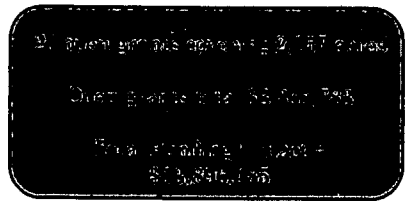
Easements

Cycle I:
- Piedmont Land Conservancy - **Gerringer Farm**

Cycle II: None

Cycle III:
- Orange County - **Breeze Farm**
- Black Family Land Trust - **Thompson Farm**
- Catawba Lands Conservancy - **Howey Farm**
- Foothills Conservancy - **Jones Farm**
- Land Trust for Central NC - **Stokes Farm**
- NC Coastal Land Trust - **Guthrie Farm**
- North American Land Trust - **Harris Farm I**
- North American Land Trust - **Harris Farm II**
- Piedmont Land Conservancy - **Iseley Farm**
- Southwestern NC - **Robinson Farm**
- Triangle Land Conservancy - **Cohen Farm**

Cycle IV:
- Alamance County – **Wilkins Farm**
- Land Trust for Central NC – **Bishop Farm**
- Southern Appalachian Highlands Conservancy – **Perkinson Farm**
- Cabarrus SWCD – **Porter Farm**
- Triangle land Conservancy – **Lindley / Campbell Farm**
- Duplin SWCD – **Parks Farm**
- Durham County – **Krabbe / Spann Farm**
- Southwestern N.C. Resource Conservation and Development Council Inc. – **Smathers Farm**
- Catawba Lands Conservancy – **Howey Farm**



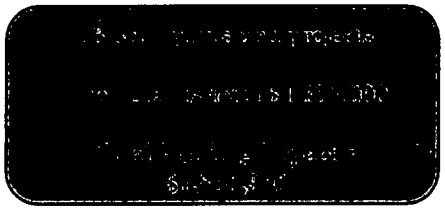
Open Grants

Plans and Projects

Cycle I:
- Cabarrus County - **Agricultural Development Plan**

Cycle II: None

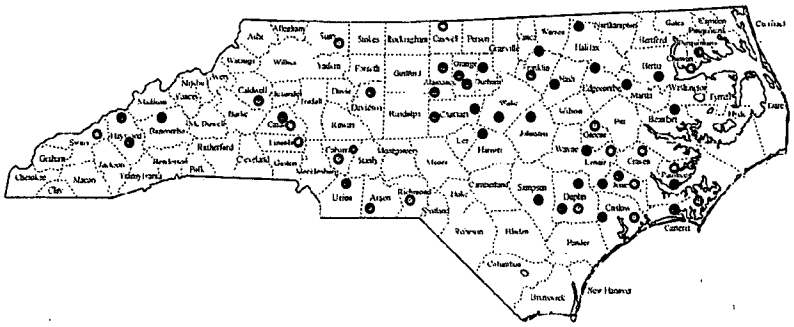
Cycle III:
- NC's Eastern Region **Greene, Lenoir, Onslow, and Jones County Protection Plans**
- Piedmont Land Conservancy - **Surry County Plan**



Cycle IV:
- Piedmont Conservation Council – **Caswell County Plan**
- Catawba County – **Protection Plan**
- Chowan SWCD – **VAD support**
- Lincoln SWCD – **Protection Plan**
- Perquimans County – **VAD support**
- Richmond County – **VAD support**
- Swain County – **Protection Plan**
- Duplin County – Assist with development of a livestock handling and processing facility serving **Brunswick, Duplin, Jones, Pender, Sampson** and **Wayne** counties.
- NC Foundation for Soil and Water Conservation – Assist with easements in military training routes in **Beaufort, Bertie, Duplin, Edgecombe, Franklin, Halifax, Harnett, Johnston, Jones, Lenoir, Martin, Nash, Onslow, Pamlico, Sampson** and **Wake** counties.
- NC's Eastern Region – Development of Protection Plans in **Carteret, Craven** and **Pamlico** counties.

Open Grants Map

Cycles I - IV



* Does not denote physical location of farm

- Plans / Projects
- Easements
- NC Foundation for Soil and Water Conservation program (Cycle IV) aimed at creating 30-year easements in military training routes

Grant Cycle IV (2011-2012) Overview

Application Type	Number of Grantees	ADFP Trust Fund Grant Value	Matching Funds
Easements	9 (7 perpetual, 2 term)	$1,302,323	$4,754,099
Plans / Projects	10	$503,000	$279,668
TOTAL	19	$1,805,323	$5,033,767

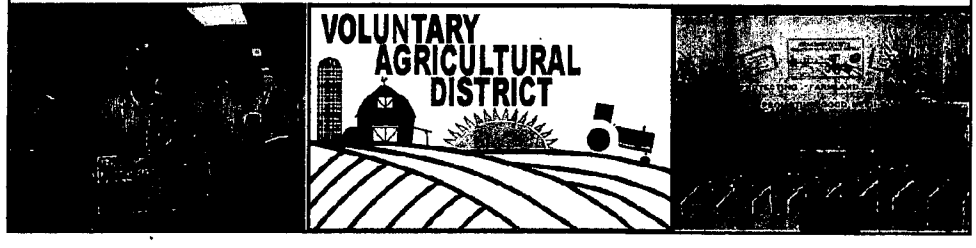
* In Cycle IV, there were a total of 46 applicants requesting $12.6 million with estimated matching resources of $26.5 million

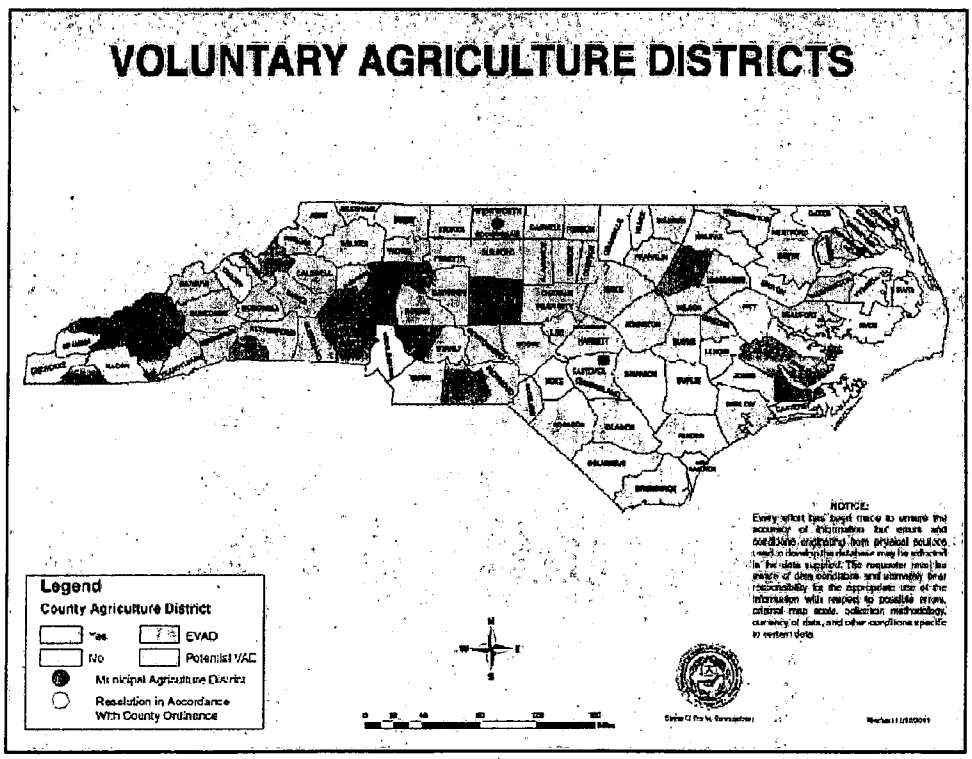
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Voluntary Agricultural Districts

Highlights:

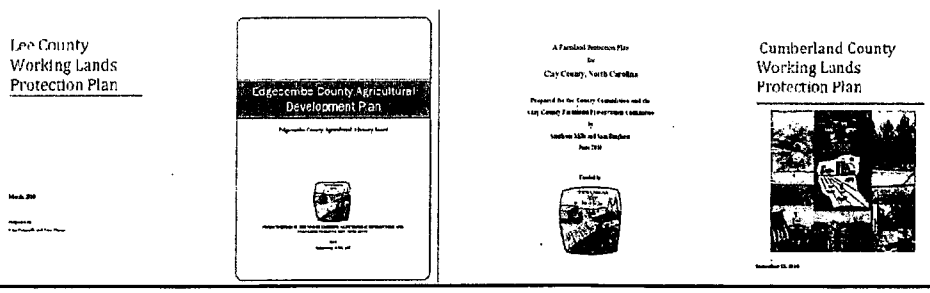
- **83** counties currently enrolled in the VAD program, an increase of **7** counties since last year
- Clay County joined the Enhanced VAD program, bringing the county total to **17**
- **12** counties are potential VAD members



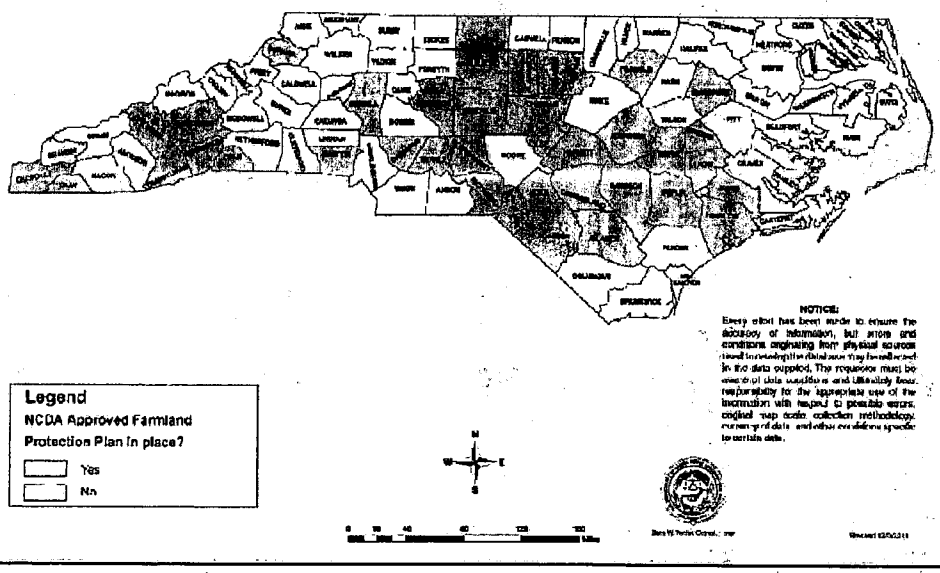


Farmland Protection Plans

39 counties have NCDA approved Farmland Protection Plans, an increase of **28** counties since 2009

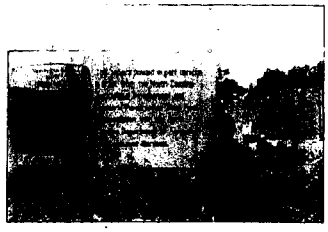


FARMLAND PROTECTION PLANS



ADFP Trust Fund
Recent Projects





Cruse Meats Processing Facility



PIEDMONT FOOD & AG PROCESSING CENTER
MILLSBOROUGH, NORTH CAROLINA

WNC Regional *Livestock* Center LLC

ADFP Trust Fund / Environmental Programs Recent Headlines

Meat processor will support local ranchers
State grant helps county partner with Cruse Meats
11/02/11
The Charlotte Observer

Harnett County's Working Lands Protection Plan is State Certified
3/30/11
"The region's working lands will help maintain the operational readiness of Fort Bragg and reduce the problems posed by development and other land uses that are incompatible with the Army's training and operational objectives."
FORT BRAGG REGIONAL ALLIANCE

Nearly 1,000 acres in Union Co. to be protected from development
8/14/11
"The Catawba Lands Conservancy, with grants from the North Carolina Agricultural Development and Farmland Preservation Trust Fund, will ensure Howey's property stays farmland."

Union County is the fastest growing county in North Carolina. It lost 10 percent of its farmland to development in five years.
NEWS 14 Carolina

ADFT Trust Fund Advisory Committee

Steve Troxler
Chair
Commissioner of Agriculture

<u>Farmers</u>:
Jackie Thompson - Appointed by the Governor
Anne Briley - Appointed by the Speaker of the House
William Holbrook - Appointed by the President Pro Tempore of the Senate

<u>Agencies/Universities</u>:
Garrett Wyckoff - Economic Development Representative, N.C. Department of Commerce
Manly Wilder - Deputy Secretary, N.C. Department of Environment and Natural Resources
Dr. Tom Melton - Associate Director, N.C. Cooperative Extension, N.C. State University
Dr. Donald McDowell - Dean, School of Agriculture and Environmental Sciences, N.C. A&T State University
B. Ray Jeffers – Commissioner, Person County

<u>Agricultural Organizations</u>:
Steve Woodson - Associate General Counsel, N.C. Farm Bureau
Gillistine Richardson - President, Black Farmers and Agriculturalists Association
Craig Frazier - President, N.C. Association of Soil & Water Conservation Districts
Robert Slocum Jr. - Executive Vice President, N.C. Forestry Association
Edgar Miller - Government Relations Director, Conservation Trust for North Carolina
Erica Peterson - Executive Secretary, N.C. Agribusiness Council
Billy Guillet - Dir. of the Ag. Advancement Consortium, NC Rural Economic Development Center
Scott Marlow - Interim Executive Director, RAFI-USA
Jimmy Gentry - President, N.C. State Grange

Questions?

Contact:
Dewitt Hardee
Manager
Environmental Programs
NC ADFP Trust Fund
NCDA&CS
Dewitt.Hardee@ncagr.gov
919-707-3069





North Carolina Agricultural Development & Farmland Preservation Trust Fund

Chair, Steve Troxler
NC DEPT. OF AGRICULTURE & CONSUMER SERVICES

Anne Briley
OFFICE OF THE SPEAKER OF THE HOUSE OF REPRESENTATIVES

Craig Frazier
NC ASSOC. OF SOIL & WATER CONSERVATION DISTRICTS

Jimmy Gentry
THE NC STATE GRANGE

Billy Guillet
NC RURAL ECONOMIC DEVELOPMENT CENTER, INC.

William Holbrook
OFFICE OF THE PRESIDENT PRO TEMPORE

B. Ray Jeffers
PERSON COUNTY COMMISSIONER

Scott Marlow
RURAL ADVANCEMENT FOUNDATION INTERNATIONAL - USA

Dr. Tom Melton
NC STATE UNIVERSITY - CALS

Dr. Bill Randle
NC A&T STATE UNIVSERITY

Edgar Miller
CONSERVATION TRUST FOR NC

Erica Peterson
NC AGRIBUSINESS COUNCIL

Gilistine Richardson
NC BLACK FARMERS & AGRICULTURALISTS ASSOC.

Robert Slocum Jr.
NC FORESTRY ASSOC.

Jackie Thompson
OFFICE OF THE GOVERNOR

Manly Wilder
NC DENR Deputy Secretary

Steve Woodson
NC FARM BUREAU

Garrett Wyckoff
NC DEPT. OF COMMERCE

ADFP Trust Fund 2010 - 2011 Annual Report To

The Joint Legislative Commission on Governmental Operations

The Environmental Review Commission

The House and Senate NER Subcommittees on Natural and Economic Resources

June 30, 2011

Pursuit to G.S. 106.744 (i) ... The Advisory Committee shall report no later than October 1 of each year to the Joint Legislative Commission on Governmental Operations, the Environmental Review Commission, and the House of Representatives and Senate Appropriations Subcommittees on Natural and Economic Resources regarding the activities of the Advisory Committee, the agriculture easements purchased, and agricultural projects funded during the previous year. (1991, c. 734, s. 1; 2000-171, ss. 1, 2; 2005-390, ss. 4, 17; 2006-252, s. 2.12; 2007-495, s. 23; 2009-303, ss. 1, 2, 3; 2009-484, s. 12.)

Steven W. Troxler
North Carolina Commissioner of Agriculture

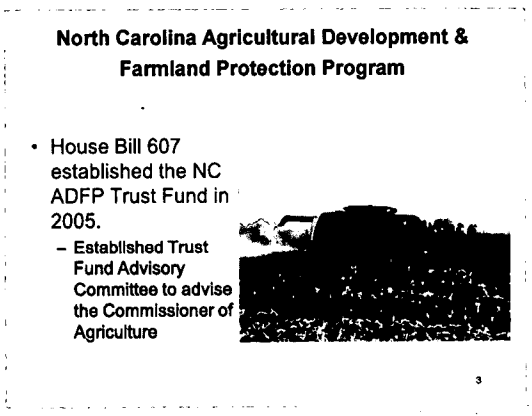
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1001 MAIL SERVICE CENTER
RALEIGH, NC 27699-1001

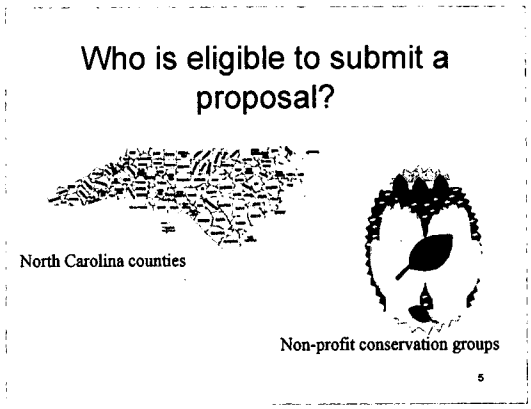
PHONE: (919) 707-3071 · FAX: (919) 716-0105
www.ncagr.gov
E-MAIL: ncadfp@ncagr.gov

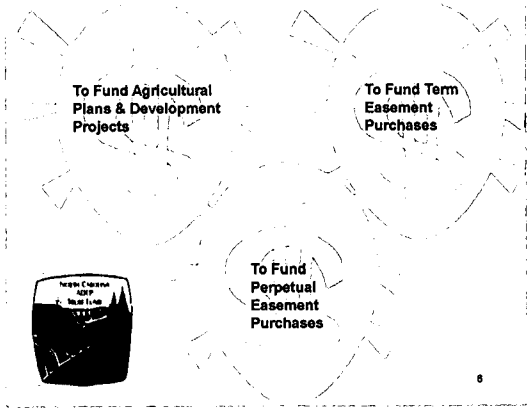
LOCATION:
2 WEST EDENTON ST.
RALEIGH, NC 27601

The Agricultural Development and Farmland Preservation Trust Fund
2010-11 Fiscal Year Report

The primary objective of the ADFP Trust Fund is to fund projects that encourage the preservation of qualifying agricultural, horticultural, and forestlands while fostering the growth, development, and sustainability of family farms. The Trust Fund was established by the General Assembly in 2005 with an initial $50,000 appropriation. A 19 member Advisory Committee which is chaired by the Commissioner of Agriculture advises the NC Department of Agriculture & Consumer Services on the administration of grant funds provided to county governments and non-profit conservation organizations. Grants are provided for the removal of development rights through perpetual and term easements. Grants are also provided for agricultural development projects and plans.







Historical Funding

The General Assembly appropriated $8 million for the 2007-08 fiscal year, $4 million for 2008-09 fiscal year, $2 million for the 2009-10 fiscal year and $2 million for the 2010-11 fiscal year. For the 2010-11 fiscal year, the ADFP Trust Fund returned $2,173,989 at the request of the Office of State Budget and Management.

The ADFP Trust Fund has awarded approximately $13.7 million for 95 grant contacts in the first three grant cycles. As of June 30, 2011, seventy seven of the contracts have been completed and closed out. The ADFP Trust Fund has paid out $8.9 million and has an additional $3.7 million still under contract for grant cycles I, II, & III. Matching funds for closed grant projects is more than $39.3 million and the estimated matching funds associated with the current open contracts is more than $8.2 million. The current ratio of matching expenditures to grant expenditures for the closed projects is 4.4 to 1.

Achievements to Date

Approximately 76% of all grant funding has been awarded to easement projects for a total of 46 easement contracted projects of which 31 projects have been closed. These closings accounted for 4,232 acres having received perpetual easements and 1,177 acres having received term easements which removed development rights while allowing the continuation of farming and forestry practices on the land. Attached is a listing of recorded ADFP Trust Fund easements during the 2010-11 fiscal year. The other 15 open easement contracts have 2,206 acres of land awaiting the recording of a perpetual easement.

ADFP Trust Fund Easement Acres

As of June 30, 2011



- Cycles I (07-08), II (08-09) & III (09-10)
  - **Recorded Conservation Acres: 5,409**
    - 4,232 Perpetual
    - 1,177 Term
  - **Conservation Acres Under Contract: 2,206**
    - All Perpetual
- Cycle IV (11-12)
  - **Easement Acres To Be Contracted: 740**
    - 708 Perpetual
    - 32 Term

12

Completed ADFP Projects For Cycles I, II, & III

As of June 30, 2011



Conservation Easements:	**31**
Total acreage protected:	**5,409**
Amount Awarded:	**$6,721,807**
Match Funding:	**$15,283,563**
Development Projects / Plans:	**46**
Amount Awarded:	**$2,181,911**
Match Funding:	**$24,063,017**

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Open ADFP Projects Remaining From Cycles I,II,& III

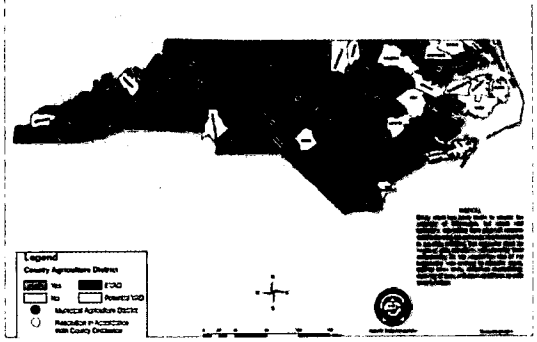
As of June 30, 2011

Conservation Easements:	**15**
Total acreage protected:	**2,206**
Amount Awarded:	**$2,901,679**
Anticipated Match Funding:	**$7,953,676**
Development Projects / Plans:	**3**
Amount Awarded:	**$800,000**
Anticipated Match Funding:	**$248,250**

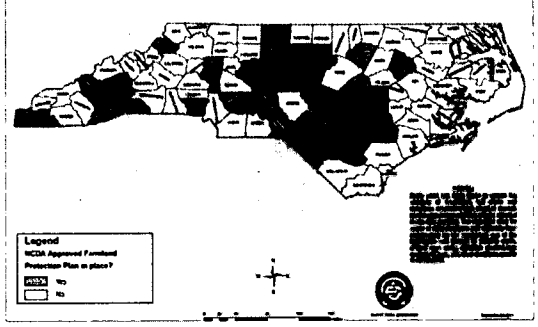
14

The remaining 24% of the grant funding has been allocated to 49 projects and plans of which 46 have been closed out. These funds have been targeted to local county agriculture programs such as farmland protection planning and agriculture value added marketing projects. Currently 81 of 100 North Carolina counties have an established Voluntary Agricultural District and /or Enhanced Voluntary District program which is up from the estimated 35 active programs in 2005. County Farmland Protection Plans have been developed and adopted by 35 North Carolina county governments since the conception of the ADFP Trust Fund. All of these County Farmland Protection Plans have been approved by the ADFP Trust Fund as meeting all state statue requirements. These programs are essential components of an overall support system based upon the local community being the initial cornerstone. These farmland protection programs are the principle building blocks of support where the local agriculture community is threaten by an ever increasing metropolitan population. North Carolina's economy is dependent upon the existence of these agricultural resources such as the cropland and forestland to maintain the state's number one industry, agriculture and agribusiness, which provides more than 17% of all jobs and contributes approximately $70 billion to the state's economy.

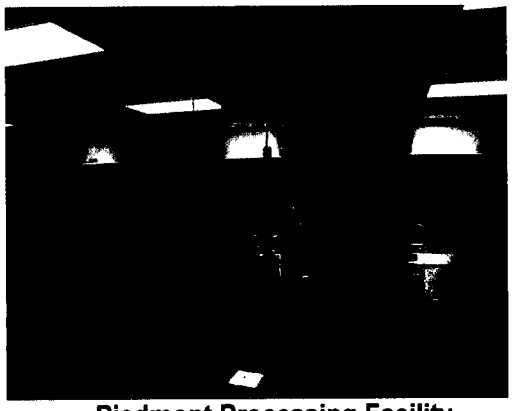
VOLUNTARY AGRICULTURE DISTRICTS



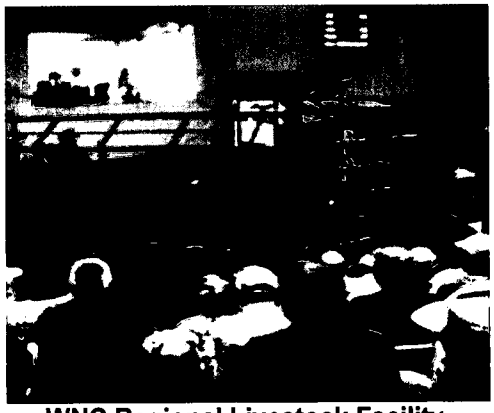
FARMLAND PROTECTION PLANS



A few of the more prominent development projects that have received ADFP Trust Fund assistance in the first grant cycles include WNC Regional Livestock Facility in Waynesville and the Piedmont Food Processing Center in Hillsborough. These types of facilities have provided improved marketing opportunities and profits for farmers in those regions by adding additional values to the products being sold or establishing a market that allows the farm products a more visible and creditable marketing outlet. These types of activities are essential in maintaining profitability for a producer to stay on the land and be a key contributor to the local community economically. These projects not only enhance the competitiveness of North Carolina agriculture products but also help our citizens with a local supply of healthy produced products. By producing locally our dependence on foreign resources including foreign oil is reduced due the reduction of transportation costs which also helps to decrease our carbon footprint.



Piedmont Processing Facility



WNC Regional Livestock Facility

Future Plans & Projects

Cycle IV have been reviewed and recommendations made by the ADFP Advisory Committee and accepted by Commissioner Steve Troxler. Selected applicants have been notified and will be awarded contracts using the $1.7 million state appropriation for 2011-12 and anticipated grant returns from current open grants from grant cycles I, II, and III. ADFP Trust Fund Cycle IV has 46 applicants requesting $12.6 million with estimated matching resources of $26.5 million. From these 46 applications, 19 grantees were selected for grant awards totaling $1,805,323 for an overall estimated project value of $5.1 million. Ten of the grants to be awarded totaling $503,000 were for projects and plans. The remaining nine awarded grants were for 8 perpetual easements and 1 term easement totaling $1,302,323 to be placed on 740 acres of crop and forest land.
For the fiscal year 2011-12, the ADFP Trust Fund has plans to solicit requests for proposals (RFPs) for a cycle V granting program. These proposals will be used to select and award grants from anticipated state appropriations for fiscal year 2012-13.

ADFP Trust Fund Easement Recordings
July 1, 2010 – June 30, 2011

Rollans Farm Easement
The Land Trust for Central North Carolina
Recorded on 7/08/2010 @ Book 1164, Page 385, Rowan County Registry
266.23 acres

Starnes Farm Easement
Rowan County Soil and Water Conservation District
Recorded on 7/14/2010 @ Book 1163, Page 792, Rowan County Registry
150.82 acres

Bunn Farm Easement
Triangle Land Conservancy (a nonprofit corporation)
Recorded on 9/24/2010 @ Book 3896, Page 10, Johnston County Registry
287.83 acres

Hickory Nut Gap Farm Easement (II)
Southern Appalachian Highlands Conservancy (a nonprofit corporation)
Recorded on 9/27/2010 @ Book 4820, Page 1078, Buncombe County Registry
28.337 acres

Whitaker Farm Easement
Piedmont Land Conservancy (a nonprofit corporation)
Randolph County
Recorded on 10/26/2010 @ Book 2205, Page 557, Randolph County Registry
97.710 acres

Gainey Farm Easement
Sandhills Area Land Trust (a nonprofit corporation)
Scotland County
Recorded on 11/08/2010 @ Book 1287, Page 122, Scotland County Registry
171.360 acres

New Lake Farm Easement
Hyde County Soil & Water District
Hyde County
Recorded on 11/09/2010 @ Book 243, Page 744, Hyde County Registry

Wilkie Farm Easement
Fishing Creek Soil & Water District
Halifax County
Recorded on 12/29/2010
34.36 acres

Snelson Farm Easement
Buncombe County Soil & Water District
Buncombe County
Recorded on 12/29/2010
139.07 acres

Henson Easement
Southwestern NC RC&D Council
Haywood County
Recorded 4/20/2011
13 acres

Gainey II Easement
Sandhills Area Land Trust
Scotland County
Recorded on 6/2/2011 @ Book 1308, Page 16, Scotland County Registry
94.86 acres; $159,940.00

Petch Easement
Brunswick County Soil and Water Conservation District
Brunswick County
Recorded on 6/21/2011 @ Book 3170, Page 260, Brunswick County Registry
101.15 acres

Rising Meadows Easement
Piedmont Land Conservancy
Randolph County
Recorded on 6/29/2011 @ Book 2239, Page 846, Randolph County Registry
63.94 acres

Lois Knox Farm Easement
Land Trust of Central North Carolina
Rowan County
Recorded on 6/30/2011 @ Book 1182, Page 259, Rowan County Registry
196.0 acres

LAND TOMORROW

LAND TOMORROW

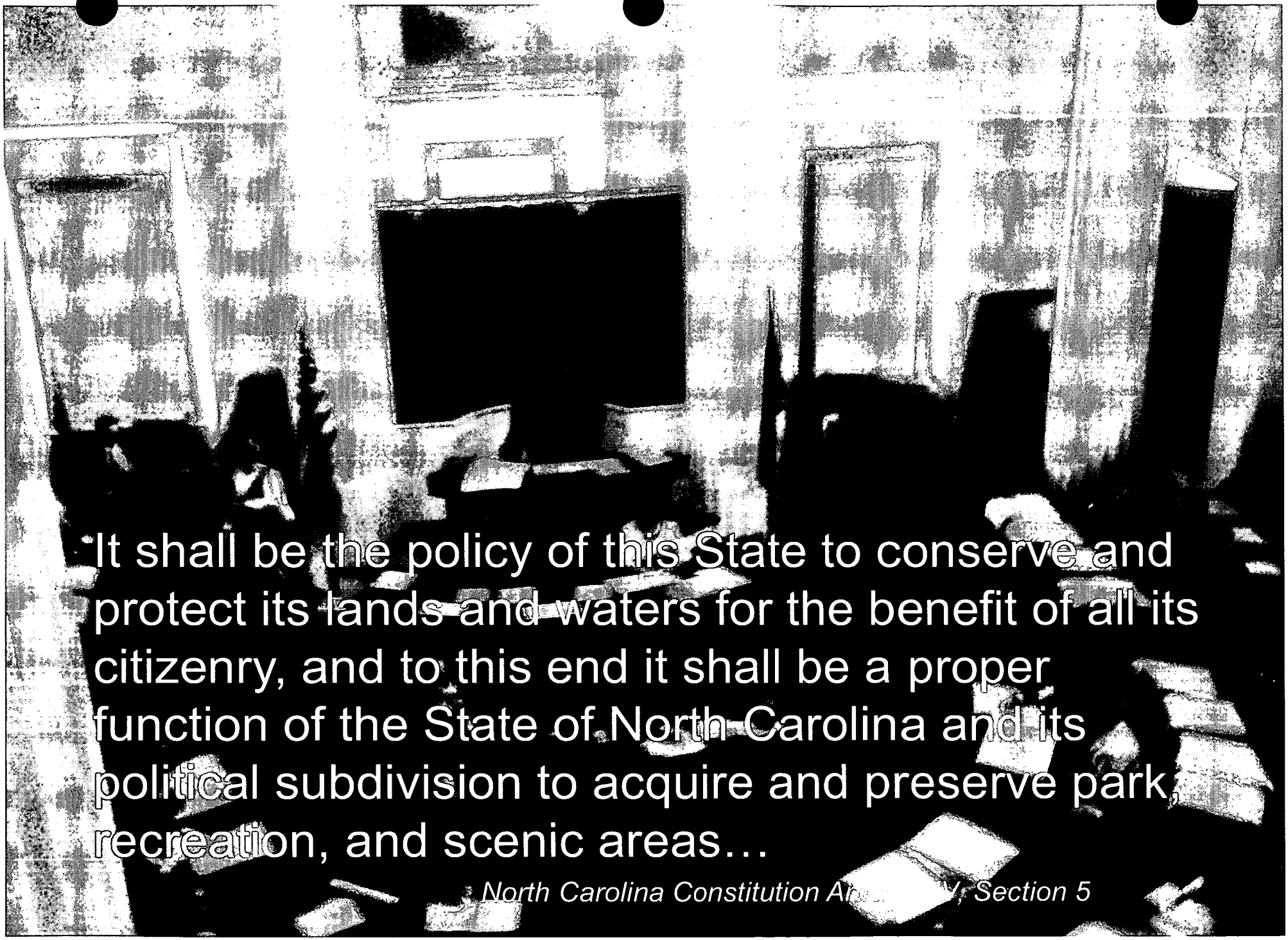
A partnership of concerned citizens, businesses and interest groups dedicated to supporting and promoting the value of North Carolina's four conservation trust funds:

- Clean Water Management Trust Fund (CWMTF)
- Natural Heritage Trust Fund (NHTF)
- Parks and Recreation Trust Fund (PARTF)
- Agricultural Development & Farmland Preservation Trust Fund (ADFPTF)

Good for NC's economy

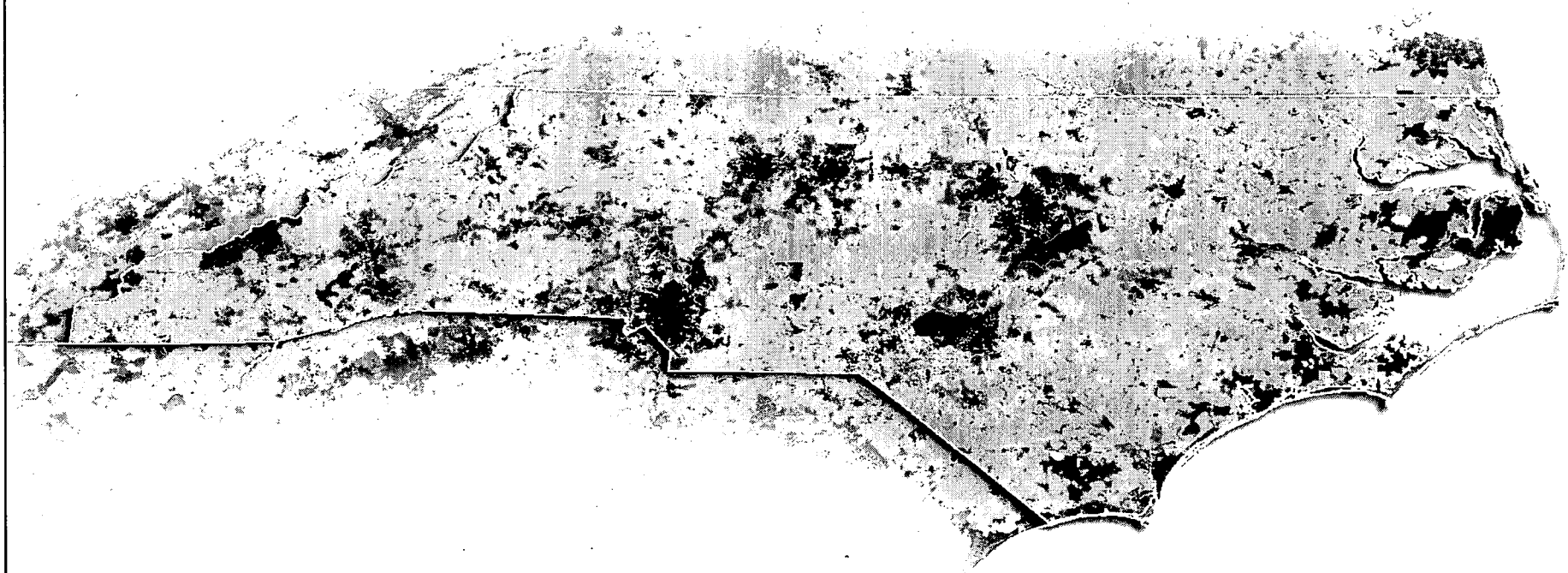
- Hunting/Fishing
- Military
- Tourism
- Outdoor Recreation
- Agriculture & Forestry




"It shall be the policy of this State to conserve and protect its lands and waters for the benefit of all its citizenry, and to this end it shall be a proper function of the State of North Carolina and its political subdivision to acquire and preserve park, recreation, and scenic areas…
North Carolina Constitution Ar[illegible], Section 5

Housing Density Across North Carolina

Hammer and Radeloff, 2004



Southern Environmental Law Center

0 12.5 25 50 mi

Open Water

Housing density data from U.S. Census Bureau Values for 2010-2030 based on linear projection of 1990-2000

Housing Units/Acre

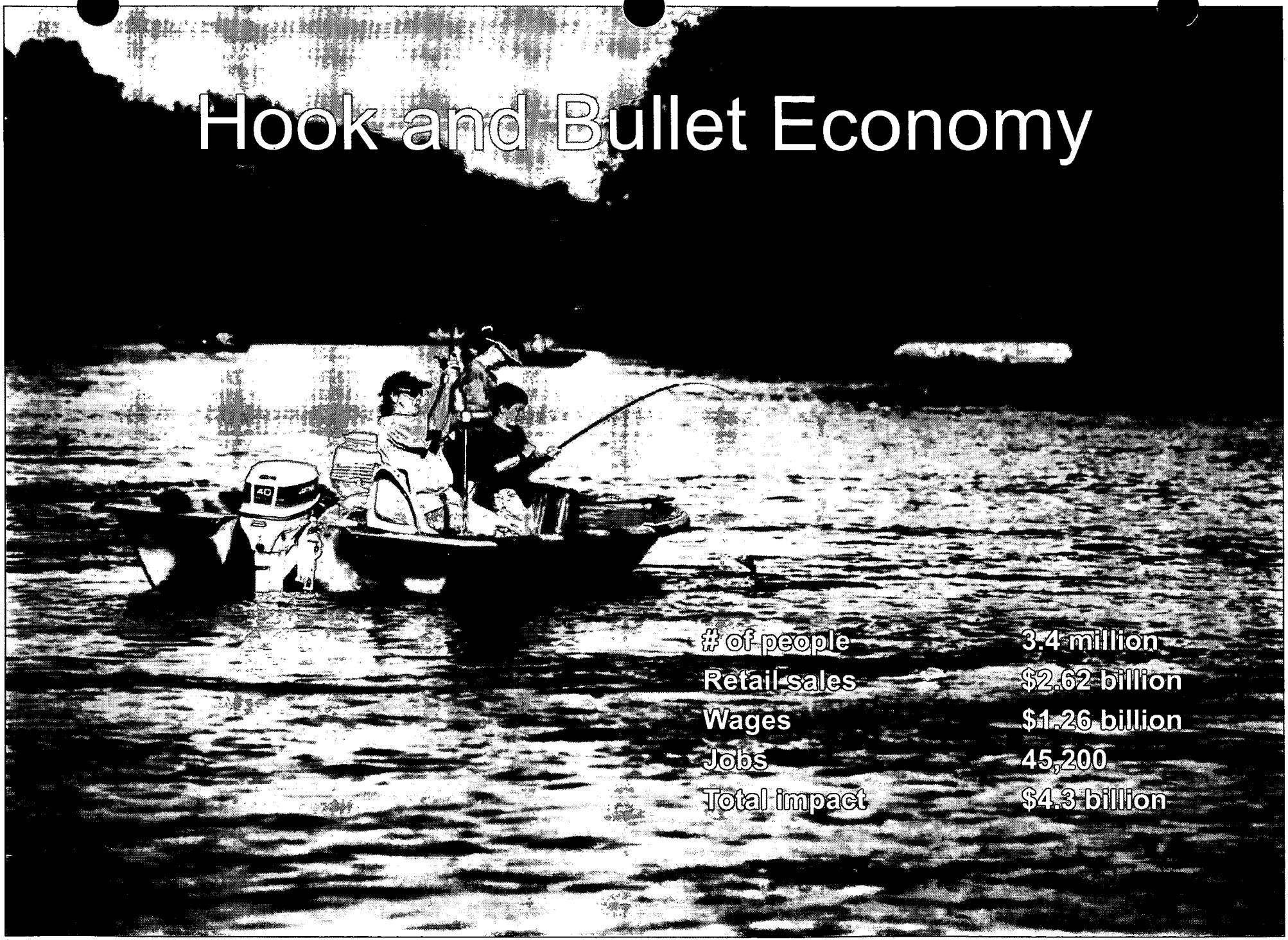
>10

1-2

<0.25

2030

Hook and Bullet Economy



# of people	3.4 million
Retail sales	$2.62 billion
Wages	$1.26 billion
Jobs	45,200
Total impact	$4.3 billion

MILITARY

"Fort Bragg created the gold standard of military conservation by addressing federally endangered species and encroachment around post, he said.

The partnership's efforts have been copied in various parts of the country, from different military installations in North Carolina to Hawaii.

Sixteen miles of Fort Bragg boundary also has been protected through the Sandhills Conservation Partnership's efforts, which has prevented encroachment on the post..."

The Fayetteville Observer

September 19, 2010

TOURISM

$17 billion

6th most visited state



OUTDOOR RECREATION

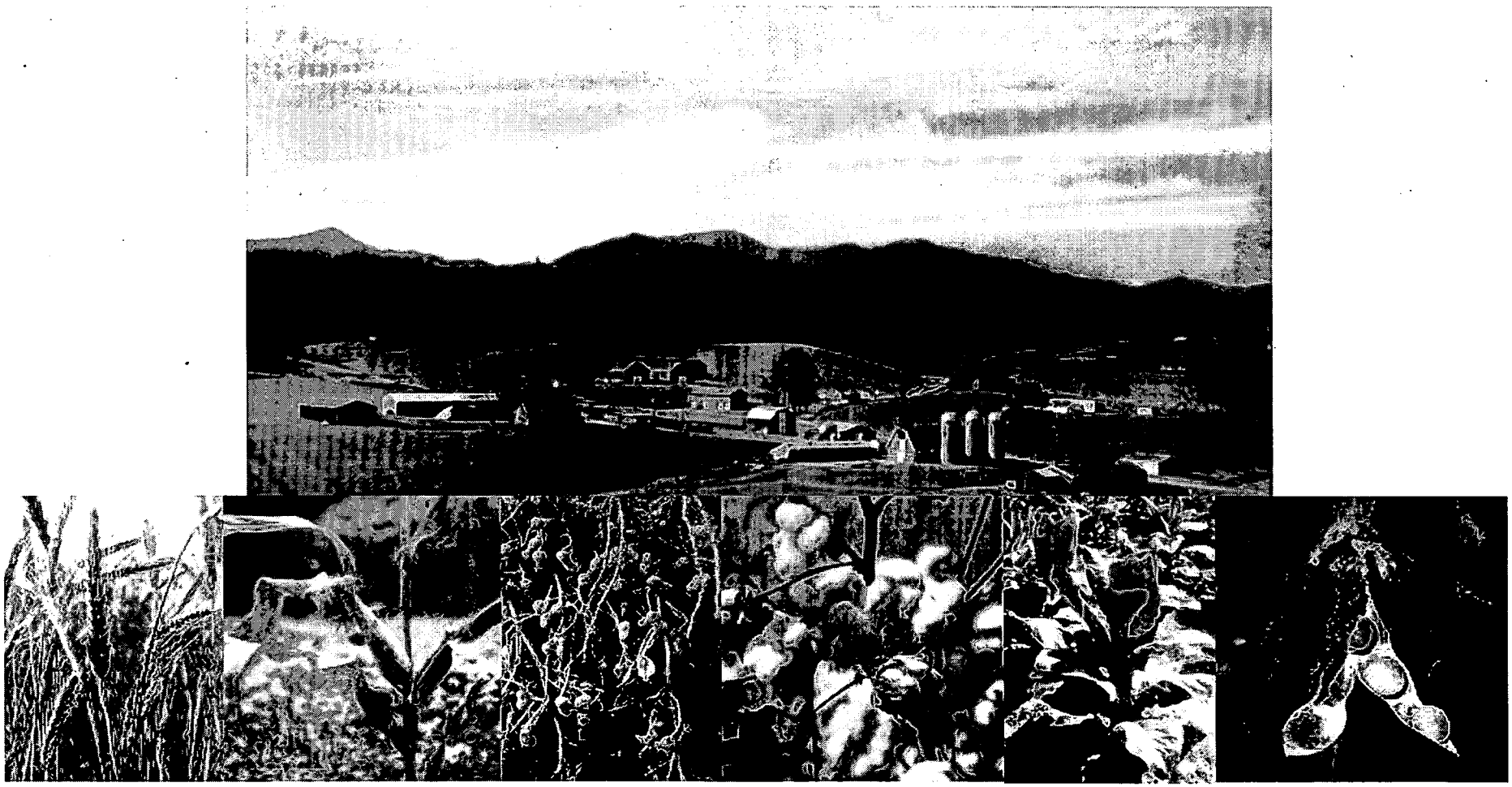
$7.5 billion to NC's economy
$430 million in tax revenue
95,000 jobs





AGRICULTURE

$32.1 billion for NC economy
120,000 jobs



FORESTRY

Economic impact $6 billion

Jobs 75,000



Federal Partners

Land and Water Conservation Fund
Military Buffer Program (REPI)
Conservation Tax Incentives



- $40 million for Clean Water
  - $40 million

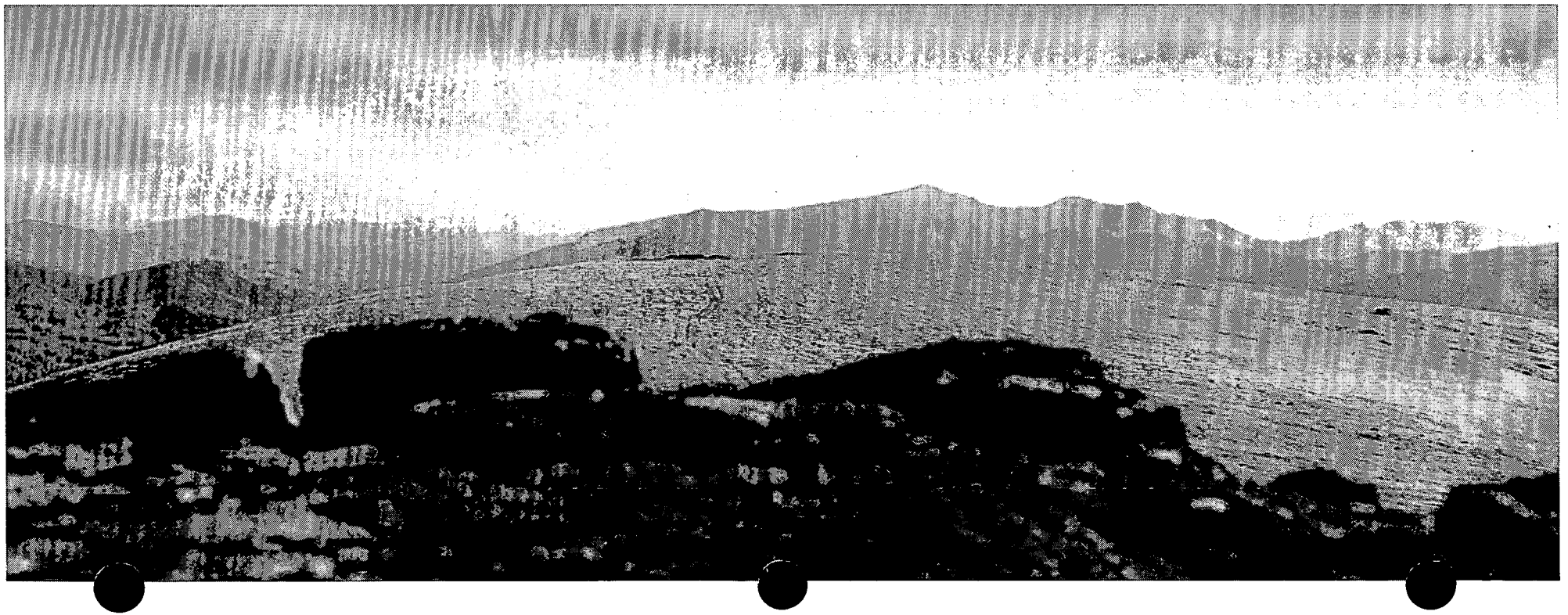
Leave intact Natural Heritage and Parks Trust Funds

Increased funding for Ag Trust Fund



LAND *for* TOMORROW

Tom Cors
The Nature Conservancy
tcors@tnc.org



21

Riparian Buffers in North Carolina

Coleen H. Sullins, Director
Division of Water Quality

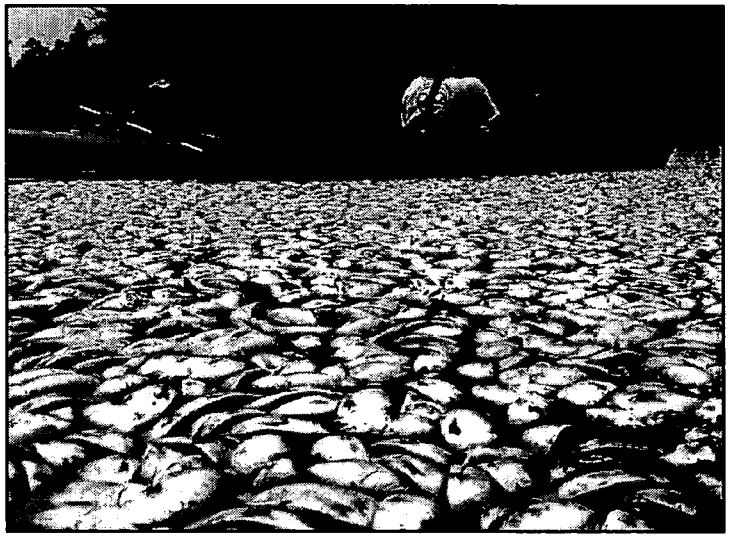
What is a Riparian Buffer?

- A riparian buffer is a strip of forested or vegetated land bordering a body of water



Photo courtesy of USDA





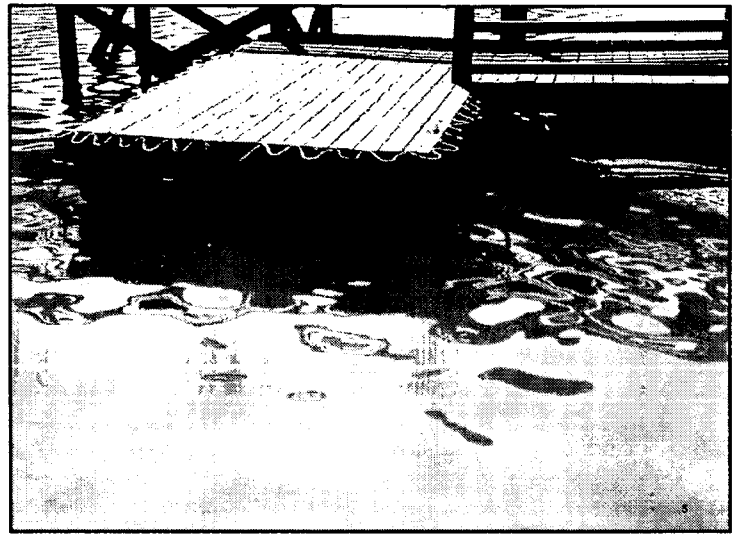






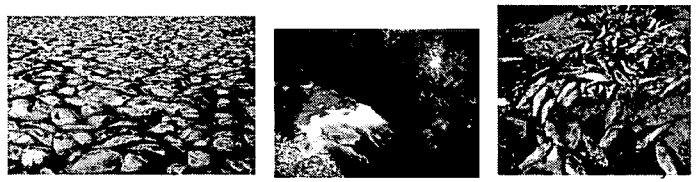
Photo courtesy of NCDENR



N.C. General Assembly took action

June 19, 1996

- SL 1995-572
  - Directed the Environmental Management Commission (EMC) to develop a plan to reduce the average annual load of nitrogen to the Neuse River Estuary by 30%



Photos courtesy of NCDENR and UNC-Chapel Hill

Neuse Management Strategy

- The EMC adopted the Neuse River Basin - Nutrient Sensitive Waters Management Strategy for:
  - **protection and maintenance of riparian areas**
  - wastewater discharges
  - urban stormwater management
  - agricultural nitrogen reduction
  - fertilizer management
  - nitrogen offset fees



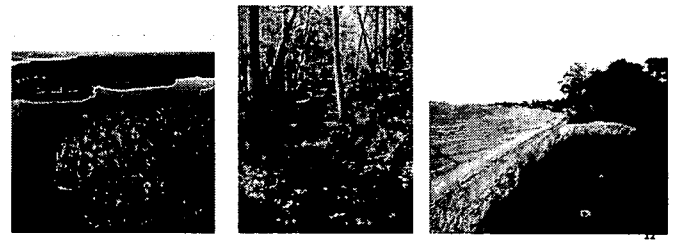
10

How do Riparian Buffers Work?



How do Riparian Buffers Work?

- Studies show that the first 50 feet adjacent to a water body provide the highest proportion of water quality benefits



Photos courtesy of NC DWQ and NC State Parks

Buffer Benefits

- Remove nutrients
- Filter stormwater runoff







Photos courtesy of DENR, WakeUp Wake County

13

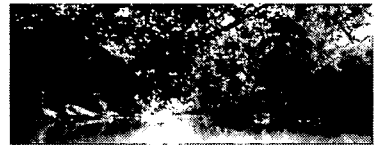
Buffer Benefits



Flood control



Prevent erosion



Provide fish & wildlife habitat

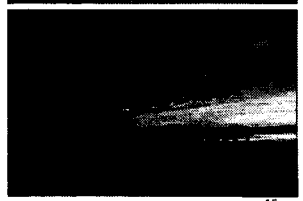
14

Photos courtesy of ASU, NCSWC and NCDENR

Buffer Benefits

- A study done in Craven County found that waterfront property commands a higher premium compared to an otherwise equivalent property
- The study also found that the mandatory riparian buffer rules did not lower waterfront property values





15

Photos courtesy of NC State Parks

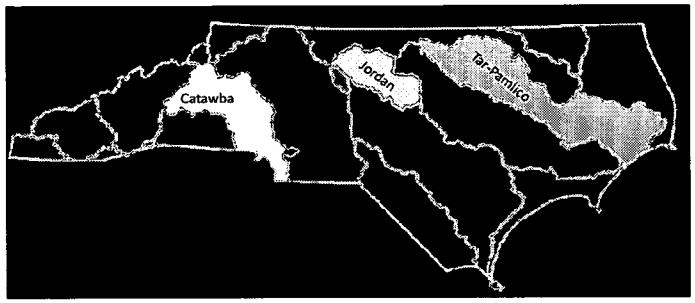
Neuse Riparian Buffer Rules

- Initial rules adopted in July 22, 1997
  - Main purpose: **protect <u>existing</u> stream buffers**
- Revised rules
  - SL 1998-221: Stakeholder Advisory Committee
  - June 1999: Revised rules adopted by EMC



16

North Carolina Riparian Buffer Rules



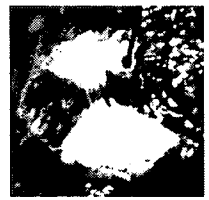
- Neuse River Basin (Jul. 22, 1997/ Aug. 1, 2000)
- Randleman Lake Watershed (Apr. 1, 1999/Jun. 1, 2010)
- Tar-Pamlico River Basin (Aug. 1, 2000)
- Catawba River Basin (Jun. 30, 2001)
- Goose Creek Watershed (Feb. 1, 2009)
- Jordan Lake Watershed (Aug. 1, 2009)[17]

The Benefits are Crystal Clear

- Riparian buffers provide many benefits
  - Remove nutrients
  - Filter stormwater runoff
  - Provide flood control
  - Prevent erosion / protect investment
  - Provide fish and wildlife habitat
  - Protect tourism industry
- Riparian buffer protection rules are part of comprehensive strategies to address water quality issues



Jordan Lake - August 2005



Phelps Lake - July 2005[18]



19

22

Ecological Flows for Hydrologic Modeling in North Carolina

Environmental Review Commission
December 14, 2011

Overview

- What are ecological flows?
- Why are they important?
- How do other states handle ecological flows?
- What is North Carolina doing?

2

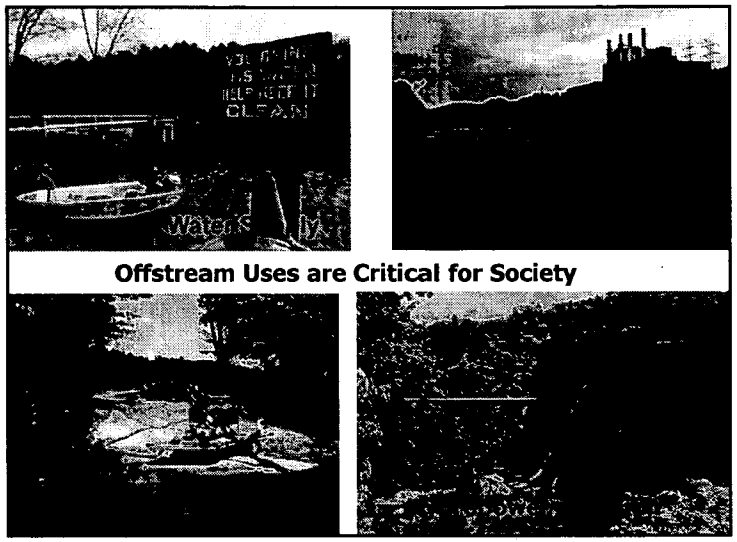
What are Ecological Flows?

- **Flow needed to maintain instream uses.**
- **Site Specific – habitat type, species of interest, drainage area**
- **Varies with Time – monthly, seasonal , or yearly variation**

3

Instream Flows Provide for a Diversity of Uses





Ecological Flows vs. Minimum Flows

- **Minimum flows – a minimal threshold to maintain aquatic life for short periods of time**
- **The lower the minimum flow – the more it is suited only to allow survival for brief periods**
- **Ecosystems suffer when the minimum flow becomes <u>THE</u> flow for extended periods.**



6

Ecological Flow Regime

- **Retains natural stream flow variability:**
  - **magnitude**
  - **timing**
  - **frequency**
  - **duration**
  - **rate of change**
- **Variability differs depending upon location & type of water body**
  - **<u>This makes statewide determination of proper ecological flows very challenging</u>.**

7

What Are Other States Doing?

- **Minimum Flow Thresholds**
  - 7Q10 drought flow (e.g., AL, LA, MS)
  - Percentage of Average Yearly Flow (e.g., AR, GA, SC)
- **Flow Regime with Allowable Percentage Reduction**
  - Florida - SW Florida and Suwannee River WMDs
- **Under Development**: NC, VA, TX

8

What is NC Doing?

- SL 2010-143 mandated that DENR:
  - Identify the flow necessary to maintain ecological integrity.
  - Incorporate ecological flows into hydrologic river basin models.
  - Determine if ecological flows will be adversely affected by existing or future water withdrawals.
  - Create a Science Advisory Board to assist in characterizing and determining ecological flows.

9

Why must Ecological Flows be Incorporated in Hydrologic Models?

- **If not included – the assumption would be that all flow in a stream is available for withdrawal and offstream use.**

10

Challenges to Eco Flow Determination

- **Wide variety of water bodies**
  - **One-size fits all approach is not suitable for NC's diversity of rivers and streams**
- **Seasonal fluctuations**
  - **Flow should vary throughout the year**
- **Field studies at every location are not practical**

11

1st Step - Stream Classification

- **Sorting streams by hydrology also sorts into ecologically distinct types**
- **Other states have started similarly**
- **Consistent with differences in geology**
- **Evaluating consistency with different types of aquatic ecosystems (underway)**

12

Next Steps

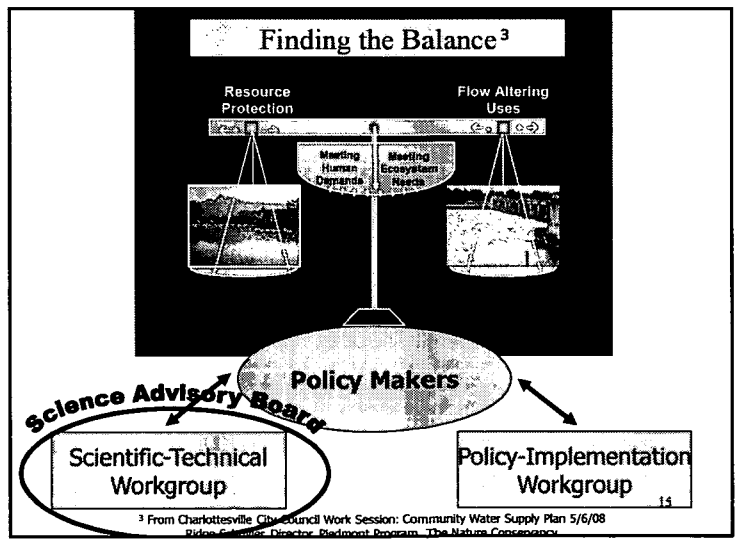
- **Ensure the hydrologic classification system captures ecological differences**
- **Determine the threshold to include in the models for each classification**
  - **How much can flow change without unacceptable ecological impacts?**

13

Ecological Flows Science Advisory Board (SAB)

- **16-member panel of experts in aquatic ecology, representing diverse stakeholders as specified in SL 2010-143**
- **Monthly meetings open to the public**
- **Will recommend approach/method for determining ecological flows**
- **SAB will recommend methods, not determine specific flow numbers.**

14





http://www.ncwater.org/Data_and_Modeling/eflows/

16

Contact Information

Tom Reeder
Director, NC Division of Water Resources
919-715-3045
tom.reeder@ncdenr.gov

DWR
Division of Water Resources

BEFORE THE NORTH CAROLINA SECRETARY OF ADMINISTRATION

YADKIN RIVERKEEPER, INC. Petitioner.	))))))	REQUEST FOR DECLARATORY RULING

I. Nature of Request

Pursuant to N.C. Gen. Stat. § 150B-4 and 01 N.C. Admin. Code 01B.0602 et seq., the Yadkin Riverkeeper, Inc. ("Yadkin Riverkeeper") submits this Request for Declaratory Ruling to the North Carolina Secretary of Administration ("Secretary") requesting the following rulings: (a) that the Department of Administration has the duty to maintain an accurate inventory of all state-owned lands; (b) that the State of North Carolina owns the bed of the Yadkin River in trust for the People of North Carolina as subject to the doctrine of the Public Trust; (c) that the State of North Carolina has asserted to FERC that the license for the Yadkin Project no longer serves the public interest and the Department of Administration is obligated to assist the State in its efforts to recapture the Yadkin Project; (d) that the Department of Administration is the proper agency of the State of North Carolina to defend the State's real property interests in the bed of the Yadkin River in the Yadkin Project; and (e) that the Department of Administration must investigate whether title has been granted away from the State in the bed of the Yadkin River in the vicinity of the Yadkin Project.

II. Nature of the Requesting Party

Yadkin Riverkeeper, Inc. ("Yadkin Riverkeeper" hereafter) is a nonprofit corporation dedicated to respecting, protecting and improving the Yadkin River Basin

through education, advocacy and action. The Yadkin Riverkeeper's mailing address is 308 Patterson Avenue, Winston-Salem, NC, 27101. Yadkin Riverkeeper works on behalf of its members to protect this public trust resource by: conducting regular patrols of the river; analyzing water quality permits; hosting education programs; and working with regulators and elected officials to enforce compliance with the federal Clean Water Act and NC pollution control laws.

III. Statement of the Facts Stipulated for this Declaratory Ruling

a. In 1879, the Secretary of War reported to the United States Congress on the results of a survey of the Yadkin River from Wilkesboro to the railroad bridge above the Yadkin Project, finding long stretches of the River navigable for steam ships but identifying many small mill dams obstructing the river. A copy is attached in the Appendix of Exhibits.

b. In 1885, the North Carolina General Assembly passed an Act declaring the Yadkin River a public highway for commerce, making it illegal to erect dams that impeded the navigation of boats, flats, and rafts on the river. A copy is attached in the Appendix of Exhibits.

c. In 1895, the Register of Deeds of Stanly County recorded a series of documents that reflect grant by the State of North Carolina of sections of the Riverbed of the Yadkin River under the Entry and Grant laws to W. Smithdeal beginning at Book 21, page 264("Smithdeal Grants" hereafter). A copy is attached in the Appendix of Exhibits.

d. The Smithdeal Grants reflect the actions of the State of North Carolina in transferring its title to the bed of the Yadkin River in 1895 as submerged lands under navigable waters subject to entry and grant laws.

e. The Smithdeal Grants further reserve to the State interests: "Yielding and paying to us such sums of money, yearly or otherwise, as our General Assembly may from time to time direct, and promising obedience to all acts of the General Assembly now existing or hereafter to be enacted, concerning the passage of fish in the waters of said premises."

f. In 1896, the Register of Deeds of Stanly County recorded the conveyance of the Smithdeal Grants to a Powell Evans and a T. Klutz, beginning at Book 21, Page 353. A copy is attached in the Appendix of Exhibits.

g. In 1899, the Register of Deeds of Stanly County recorded the conveyance of the Smithdeal Grants from Powell Evans and T. Klutz to the Yadkin River Power Company, beginning at Book 23, Page 469. A copy is attached in the Appendix of Exhibits.

h. That the description of property purported to be conveyed by the Smithdeal Grants' appears to embrace the foundation of some of the dams in the Yadkin Project, but not all of the bed of the Yadkin River in the Yadkin Project

i. No subsequent conveyance of the Smithdeal Grants appears in the records of the Register of Deeds of Stanly County.

j. In 1958, the Federal Energy Regulatory Commission ("FERC") granted to Carolina Aluminum Company, a 50-year federal license to operate four dams along the Yadkin River, known as the Yadkin Project.

k. In April of 2006, a subsidiary of Aluminum Company of America, Alcoa Power Generating Inc. (hereafter referred to as "Alcoa") applied to FERC for a new fifty-year license to operate the Yadkin Project. As part of its application, Alcoa had to fill out an initial statement, which reads as follows, in pertinent part: "North Carolina follows the riparian system of water rights, whereby the owner of riparian land possesses the right to use the waters passing over its lands reasonably, including temporarily impounding the water through the erection of a dam. *See, e.g.,* Dunlap v. Carolina Power & Light Co., 212 N.C. 814, 823 (N.C. 1938). APGI owns all of the lands and riparian rights necessary under North Carolina law to operate and maintain the developments of the Yadkin Project. APGI is a Tennessee Corporation, originally incorporated as Knoxville Power Company. It was domesticated in North Carolina in 1954." A copy of the Initial Statement portion of Alcoa's application is attached in the Appendix of Exhibits.

l. In its application, Alcoa calculated the "Fair Value" for the Yadkin Project, under the Federal Power Act, as $137,339,555, including the land acquired. A copy of the "Exhibit D" to its application which details this calculation is attached in the Appendix of Exhibits.

m. Alcoa explained its need for the power generated by the Yadkin Project as follows: "Alcoa Inc. (Alcoa) owns all of the outstanding common stock of APGI and is the nation's largest producer of aluminum and aluminum products. Alcoa has several aluminum smelters and related operations in the United States, including extensive operations in the southeast and Midwest regions, particularly in North Carolina, South Carolina, Indiana, and Tennessee. Aluminum smelting

requires large amounts of low cost, reliable electricity, and energy can comprise more than 30 percent of the cost of producing aluminum. Thus, the competitiveness of Alcoa's primary aluminum business is closely tied to the availability of economical electric power rates. For this reason, Alcoa has located its smelting operations in close proximity to low-cost sources of reliable electric power such as the Yadkin Project hydropower developments, owned and operated by APGI. The Yadkin Project is critical to Alcoa's Primary Metals Operations because it enables Alcoa to maintain its competitiveness in the domestic aluminum market. For many years, the power from the Yadkin Project was a source of power for Alcoa's Badin Works, an aluminum smelter and processing plant. More recently, the smelting operations at Badin were curtailed, but the hydropower developments have continued to supply some power directly to Badin Works, with the remaining power sold to help offset the cost of electricity purchases required for Alcoa's other domestic smelting operations. Currently, the Yadkin Project provides 3 to 5 megawatts (MW) of electricity directly to Badin Works for aluminum refining and other operations that still occur at the plant, with the balance being sold into the wholesale market. Whether the energy from the Yadkin Project is sold into the wholesale market or used to directly supply Alcoa's smelting facilities, access to that source of low cost power is important to Alcoa's Primary Metals Business." A copy of Exhibit H to Alcoa's License Application is attached in the Appendix of Exhibits.

n. The N.C. Department of Environment and Natural Resources was allowed to intervene in Alcoa's FERC Relicensing proceeding upon Motion citing the nature

of the State's ownership interests in the submerged land and in protecting public trust resources. A copy is attached in the Appendix of Exhibits.

o. In May of 2008, Alcoa filed a 401 Certification Form requesting DWQ to certify that the activities covered by the proposed relicensing of the Yadkin Project would not violate state water quality standards. A copy is attached in the Appendix of Exhibits.

p. On September 18, 2009, the State of North Carolina filed a Motion to Present Evidence before FERC in the Relicensing Proceeding("Motion to Present Evidence" hereafter). A copy of the Motion is attached in the Appendix of Exhibits.

q. In the Motion to Present Evidence, the State argued: "The State's opposition to Alcoa's relicensing application and its request for a recapture recommendation arise out of: (A) Alcoa's failure to keep its promise to the State that, in exchange for the State's support of Alcoa's initial license application, it would create, maintain and provide North Carolina's people with significant socioeconomic benefits; (B) Alcoa's failure as a trustee and steward of the Yadkin River, Badin Lake and the health and safety of the people who live nearby; and (C) significant changes which have occurred since 1958 and which the State believes require a completely new analysis of how best to use the flows of the Yadkin River as a public resource - in particular, the need for clean, accessible water supplies has become critical to the State's continued growth, development and prosperity." See Motion at page 5 attached in the Appendix of Exhibits.

r. Dean Naujoks, employee of the Yadkin Riverkeeper, regularly patrols the river by boat.

s. In April 2011, Naujoks, undertook the "Tour de Yadkin" during which he paddled 185 miles down the length of the Yadkin River. The details of Mr. Naujoks' observations regarding the navigability of the river are outlined in his Affidavit. A copy is attached in the Appendix of Exhibits.

IV. Statutes and Rules to Which the Request Relates

a. In 1758, the Colonial Government of North Carolina enacted a law to encourage the development of public mills as regulated monopolies providing public service under controlled prices. A copy of that statute is attached in the appendix of Exhibits.

b. In December of 1776, North Carolina enacted its first Constitution as a State with an accompanying Declaration of Rights. The third provision of the North Carolina Declaration of Rights read: "III. That no man or set of men are entitled to exclusive or separate emoluments or privileges from the community, but in consideration of public services."

c. In 1777, the State of North Carolina enacted a law to encourage the development of public mills as regulated monopolies providing public service under controlled prices.

d. The North Carolina Constitution declares that the State must "protect and conserve its lands and waters for the benefit of all citizenry." N.C. Const. art. XIV, § 5.

e. It is the public policy of the State of North Carolina "to provide for the conservation of its water and air resources." N.C. Gen. Stat. § 143-211(a)

f. The General Assembly recognizes "that the water and air resources of the State belong to the people" and "affirms the State's ultimate responsibility for the preservation and development of these resources in the best interest of all its citizens . . ." N.C. Gen. Stat. § 143-211(a).

g. The North Carolina Administrative Procedure Act states that "an agency shall issue a declaratory ruling . . . as to the applicability to a given state of facts of a statute administered by the agency or of a rule or order of the agency" when requested by a person aggrieved. N.C. Gen. Stat. § 150B-4(a).

h. Upon request for a declaratory ruling, the agency has 30 days to "make a written to grant or deny the request." N.C. Gen. Stat. § 150B-4(a)(1).

i. The North Carolina Department of Administration has the duty "[t]o prepare and keep current a complete and accurate inventory of all land owned or leased by the State or by any State agency." N.C. Gen. Stat. § 143-341(4)(a).

j. Through the Division of State Property, the Department of Administration "is the administering agency in state government for the acquisition and disposition of all state owned land or any interest therein by deed, lease, easement, or allocation." N.C. Admin. Code 6N.0101.

k. It is the duty of the Department of Administration "to provide for such ancillary services as the other departments of State government might need to insure efficient and effective operations." N.C. Gen. Stat. § 143B-367.

l. The North Carolina Department of Environment and Natural resources has the duty to "secure for the people of North Carolina, now and in the future, the beneficial uses of these great natural resources." N.C. Gen. Stat. § 143-211(c).

m. For the purposes of defining state lands, " '[n]avigable waters' means all water which are navigable in fact." N.C. Gen. Stat. § 146-64(4).

n. The General Assembly has declared and found as legislative fact that the Yadkin and Pee Dee Rivers from Davidson County's northern boundary to the South Carolina state line are to be public highways and mandated "the free passage of boats, flats, rafts and other means of transportation." 1885 N.C. Sess. Laws 389-91.

o. Title to real property held by the State and subject to public trust rights may not be acquired by adverse possession. N.C. Gen. Stat. § 1-45.1.

p. All conveyances heretofore made by the Governor, attested by the Secretary of State, and authorized by the Council of State, in the manner provided by G.S. 146-74 and 146-75 of any lands are validated by statute. See N.C. Gen. Stat. § 146-78.

q. Public trust rights are "rights held in trust by the State for the use and benefit of the people of the State in common . . . They include, but are not limited to, the right to navigate, swim, hunt, fish, and enjoy all recreational activities in the watercourses of the State . . ." N.C. Gen. Stat. § 1-45.1.

r. The North Carolina Department of Administration has enacted rules recognizing its roles and responsibilities, codified in Title 1 of the North Carolina Administrative Code.

s. Rule 01 NCAC 06B.101 sets forth these responsibilities as follows: "The Division of State Property is the administering agency in state government for the acquisition and disposition of all state owned land or any interest therein by deed, lease, easement, or allocation."

V. Concise Statement of the Manner in Which the Petitioner is Aggrieved by the Application of the Laws and Rules Cited to the Facts

(A) STATE OF NC HAS ARGUED TO FERC THAT ALCOA'S LICENSE IS NO LONGER SERVING THE PUBLIC INTEREST, MAKING GRANTS OF PRIVILEGE TO IT UNLAWFUL

North Carolina filed a Motion to Intervene in the FERC relicensing proceeding for the Yadkin Project. On September 18, 2009, the State filed a Motion to Present Evidence before FERC. In the body of the Motion and in the attached evidence, the State argued compellingly as to why Alcoa's proposed relicensing does not serve the public interest. The State's Motion is still pending before FERC. If the State's Motion is granted, a critical question to be resolved would be the value of the project including the ownership of land necessary to operate the Yadkin Project. The Department of Administration is the state agency responsible for maintaining the inventory of state lands and acquiring and defending title to same.

In its Motion to Present Evidence before FERC, the State argued that the 1958 FERC license was in consideration of public service through significant employment. Other FERC licenses in the State of North Carolina have gone to entities subject to public service requirements, such as utilities regulated by the Utilities Commission. The State said this was primarily due to "Alcoa's failure to keep its promise to the State that, in exchange for the State's support of Alcoa's initial license application, it would create,

maintain and provide North Carolina's people with significant socioeconomic benefits" See Motion at page 5.

Alcoa very forthrightly explained its use of the Yadkin Project as a source of revenue to support its smelting operations in other locations. See Initial Statement in Appendix. Alcoa made no pretense to FERC that the Yadkin Project is about North Carolina jobs. Rather the Yadkin Project provides a small amount of electricity for use (estimated at 3-5 megawatts) at the plant, with the bulk going to the wholesale market. See Alcoa Exhibit H in the Appendix of Exhibits. Alcoa explained the Need for the Yadkin Project, in part, as follows: "the smelting operations at Badin were curtailed, but the hydropower developments have continued to supply some power directly to Badin Works, with the remaining power sold to help offset the cost of electricity purchases required for Alcoa's other domestic smelting operations."

(B) THE NORTH CAROLINA CONSTITUTION PROHIBITS MONOPOLIES AND THE GRANTING OF EXCLUSIVE PRIVILEGES, EXCEPT IN CONSIDERATION OF PUBLIC SERVICE

The North Carolina Constitution from early times has prohibited monopolies and the granting of exclusive privileges, except in consideration of public service. See N.C. Constitution, Art. I, § 32, 33 and 34. The colonial government of North Carolina enacted a statute allowing persons to build grist mills on rivers and streams, but only public grist mills. See Public Mill Act of 1758 in the Appendix of Exhibits. These mills were required to choose customers according to a turn system, charge no more than a maximum toll for grinding grain, and required to grind the grain well. In exchange for this public benefit, the grist mill operators were given a monopoly and an exclusive privilege: no other mill could be within two miles along the stream or river. At common

law, mill impoundments were generally unlawful as a violation of the natural flow doctrine. The colonial government created an exception to benefit the public's need to get flour and corn meal at a reasonable price.

Constructions of mill dams were allowed under the common law of North Carolina as regulated public monopolies in late colonial times. The Public Mill Act of 1753 regulated the amount that could be charged, how customers were served and the quality of product. Any miller was subject to a fine if they: took more than the prescribed toll; did not grind the grain well; or who took loads of grain out of turn had to pay to the injured party a fee.

After the American Revolution, the General Assembly enacted a similar law to the 1753 statute allowing the construction of public grist mills. For public grist mills, the owner was required to grind corn for anyone who came asking for the service. The toll charged on the corn was subject to a statutory maximum charge: "All millers of public mills shall grind according to turn, and shall well and sufficiently grind the grain brought to their mills, if the water will permit, and shall take no more toll for grinding than one-eighth part of the Indian corn and wheat, and one-fourteenth part for chopping grain of any kind." See N.C. Gen. Stat. § 73-2.

As grain harvest increased in the area, the need for the grist mill dams increased. By the end of the 1800s many great rivers in North Carolina and nearly all large streams in the Piedmont were clogged with mill dams. While the Colony and then the State had regulated public mills as a regulated monopoly, it did not restrict the number of them. Thus, the State found itself with many mill dams that no longer served a public purpose.

At the time of the survey done by the Secretary of War in 1879, many on the Yadkin were no longer operable or had fallen to disuse.

The North Carolina Constitution forbids the State from assigning any person "exclusive or separate emoluments or privileges from the community but in consideration of public services." N.C. Const. art. I, § 32. Furthermore, "[p]erpetuities and monopolies are contrary to the genius of a free state and shall not be allowed." *Id.* § 34. The granting of "special privileges to private corporations" would violate Article I, section 32. *See* State v. Felton, 239 N.C. 575, 585, 80 S.E.2d 625, 633 (1954) (stating that such acts have consistently been found unconstitutional).

The Constitution's prohibition of exclusive emoluments does not extend to those grants "in consideration of public services." N.C. Const. art. I, § 32. Entities regulated as public utilities may receive exclusive emoluments in return for providing critical services to the public such as electricity and telecommunications. *Felton*, 239 N.C. at 585. An entity qualifies as a public utility when it generates or delivers electricity to the public for compensation, but those entities that generate electricity for wholesale distribution or self-use are not public utilities. N.C. Gen. Stat. § 62-3(23)(a). The Utilities Commission possesses the "authority to supervise and control" public utilities, including the ability to make rules and regulations, set rates, order the construction of improvements, and investigate financial records. *Id.* § 62-30 –54.

A governmental grant to a private entity is an unconstitutional monopoly or perpetuity when the grant assigns away the "exclusive privilege to construct and maintain waterworks . . . and the exclusive use of . . . public grounds [and] streams." Thrift v. Bd. of Comm'rs of Town of Elizabeth City, 30 S.E. 349, 351 (N.C. 1898) (invalidating a

town's contract that assigned exclusive rights to a water supplier). "A monopoly need not be a perpetuity, nor is a perpetuity necessarily a monopoly," but both are condemned under the Constitution. *Id.* A government may not "deliberately surrender to a private individual its highest attributes of . . . sovereignty." *See id.*

An exemption from certain laws for particular parties is not an exclusive emolument if: "(1) the exemption is intended to promote the general welfare rather than the benefit of the individual, and (2) there is a reasonable basis for the legislature to conclude the granting of the exemption serves the public interest." *Town of Emerald Isle By and Through Smith v. State*, 320 N.C. 640, 654, 360 S.E.2d 756, 764 (1987). For example, providing tax incentives to a manufacturer who relocates to a community would not be an exclusive emolument because the new employment benefits the public generally, not merely the specific corporate recipient. *See Blinson v. State*, 186 N.C. App. 328, 342, 651 S.E.2d 268, 278 (N.C. Ct. App. 2007).

Alcoa, as a wholesale producer of electricity, is not a public utility under the law and has not been recognized as such by the Utilities Commission. While its use of the river once supported the local community by providing jobs at the company's aluminum smelting plant, Alcoa currently sells all the electricity generated by the Yadkin on the wholesale market; this benefits only Alcoa, not the general welfare. In contrast to the manufacturer in *Blinson*, who had specific plans to relocate to North Carolina, Alcoa has offered nothing in the public interest beside a vague offer of jobs. *Blinson*, 186 N.C. App. at 330. A legislature may more reasonably determine that an exemption serves the general welfare when there is a concrete promise of employment opportunities, not a mere possibility.

(C) Manmade Obstructions to Navigation along the Yadkin River are Unlawful if they Do Not Provide a Public Service

North Carolina's First Constitution prohibited emoluments and privileges except in consideration of public services. This prohibition has continued in force of law through today. The Colonial statute recognized that regulation was necessary to prevent "evil-minded, covetous and exacting millers or owners of mills" from gouging their customers or otherwise abusing the privilege of a public monopoly. The obstructions to navigation on the Yadkin River in the late 1800s were primarily attributable to the State's policy of encouraging the development of mills for the public benefit.

The Survey of the Secretary of War as reported to Congress in 1879 looked to see whether the Yadkin River could be made navigable for steamboats to pass from Wilkesboro to the Railroad Bridge near Salisbury. Surveyors found primary obstacles to navigation to consist of dams, many of which were no longer being used. They also catalogued a number of shoals associated with these dams. When the General Assembly enacted the law declaring the Yadkin River to be public highways, they recognized that the removal of dams from the river was a key public purpose and they sought specifically to protect "the free passage of boats, flats, rafts and other means of transportation." 1885 N.C. Sess. Laws 389-91.

(D) The Yadkin River was Navigable Historically and Is Navigable Today

The General Assembly passed legislation in 1885 declaring the Yadkin and Pee Dee Rivers from Davidson County's northern boundary to the South Carolina state line to be public highways and mandating "the free passage of boats, flats, rafts and other means

of transportation." 1885 N.C. Sess. Laws 389-91. A Department of War Survey of 1879 found that a multitude of mill dams and associated man-made obstacle, blocked passage of boats for stretches on the Yadkin River. The Yadkin River is a navigable river in fact, both historically and in its present state.

In 1859, the state Supreme Court noted that "flats and canoes" had crossed the Yadkin and used it for transporting flour and lime. State v. Tyre Glen, 52 N.C. 321, 323 (1859). While the Court ultimately determined that a stretch of the Yadkin in was non-navigable, it did so under an archaic rule under which navigable in fact meant navigable by sea-going vessels. *Id.* The *Tyre Glen* Court thus concluded that since the Yadkin River was not wide or deep enough for navigation by steam boats. The Court reasoned that since the owner had a grant from the State of North Carolina to the portion of the riverbed dated before 1794, that the owner was entitled to erect a mill and dam the river. If legislation declared a river to be a navigable stream, the Court noted, it would be so in law. *Id at* 333. Subsequent to the *Tyre Glen* case decision, such legislation was enacted declaring the Yadkin River to be a public highway.

The *Tyre Glen* case arose in Yadkin County, which is located upstream of the Yadkin Project and above the area delineated as a public highway by the General Assembly's Act of 1885. The North Carolina Supreme Court has since held that navigable waters include those waters which can be navigated by recreational craft such as canoes as well as those which would have met the old "sea vessel" test. *See* Gwathmey v. State, 342 N.C 287, 300, 464 S.E.2d 674, 682 (1995). *Tyre Glen*'s description of the Yadkin reveals that the river as it flowed through Yadkin county in 1859 was navigable under the modern definition. Title to land is presumed to be in the

State of North Carolina in any dispute between any party and the State. See N.C. Gen. Stat. § 146-79. This would include the relicensing proceeding at FERC.

(E) STATE OF NC OWNS THE BED OF THE YADKIN RIVER

State title to the bed of navigable rivers was an incident of state sovereignty, long recognized at law. After the American Revolution, the original states became sovereign. As sovereign states, instead of colonies, each held "absolute right to all their navigable waters *and the soils under them* for their own common use, subject only to the rights since surrendered by the Constitution to the general government." Martin v. Waddell, 41 U.S. (16 Pet.) 367, 410 (1842) (emphasis added). Title to beds of navigable rivers allowed the sovereign states to protect the public interests in using waters and beds, such as the public grist mills allowed under North Carolina law.

At their inception, states "succeeded to the rights, both of the crown and of the proprietors, in the navigable waters and the soil under them." Shively v. Bowlby, 152 U.S. 1, 23 (1894). The *Shively* court reviewed a long history of cases establishing state sovereign title to beds of navigable waters. States received such title to protect and defend the interests of the people, as the ultimate sovereign, for use of these lands for navigation, commerce, and fishing. *Shively*, 152 U.S. at 11-12. See also Montana v. United States, 450 U.S. 544, 552 (1981) and United States v. Alaska, 521 U.S. 1, 5 (1997). Lands under river beds were "infused with a public trust the State itself is bound to respect." Idaho v. Coeur d'Alene Tribe, 521 U.S. 261, 283 (1987) (Kennedy, J., plurality opinion). The Supreme Court of the United States recognized this public trust in the *Illinois Central* case. *Illinois Central Railroad Co. v. Illinois* 146 U.S. 387, 453-54 (1892). The *Illinois Central* Court held that the Illinois legislature lacked power to grant

submerged lands along Lake Michigan. While states may sell, lease, and allow private use of lands under navigable waters, a state cannot "abdicate its trust over property in which the whole people are interested, like navigable waters and soils under them, so as to leave them entirely under the use and control of private parties[.]" *Illinois Central*, 146 U.S. at 453.

North Carolina courts have also recognized that State ownership of submerged lands is subject to the public trust doctrine. The State of North Carolina recognizes the common law doctrine of public trust over navigable waters. State ex rel. Rohrer v. Credle, 322 N.C. 522, 527, 369 S.E. 825, 828 (1988). The lands submerged beneath the state's navigable waters are held "in trust by the State for the benefit of the public." *Id.* As trustee, the state has a fiduciary duty of loyalty to the beneficiaries of our natural resources: the public. *Cf.* N.C. Gen. Stat. § 36C-8-802 ("A trustee shall administer the trust solely in the interests of the beneficiaries."). Furthermore, the State Constitution enshrined the principle that the State must "protect and conserve its lands and waters for the benefit of all its citizenry." N.C. Const. art. XIV, § 5. State law recognizes that "the water and air resources of the State belong to the people" and must be preserved and developed "in the best interest of all its citizens." N.C. Gen. Stat. § 143-211(a). The public trust doctrine is a rule of construction "creating a presumption that the General Assembly did not intend to convey lands in a matter that would impair public trust rights." Gwathmey v. State, 342 N.C 287, 304, 464 S.E.2d 674, 684 (1995).

The definition of navigability has evolved from the common law of England which labeled as navigable only those rivers affected by the "ebbing and flowing of the tides." North Carolina rejected that narrow conception in 1828. *See* Wilson v. Forbes,

13 N.C. 30, 34-35 (1828). Today, legal navigability depends on the waters' navigability "in fact." N.C. Gen. Stat. § 146-64(4). A stream's navigability in fact does not depend on its historical use for trade, but instead on whether it could be navigated by watercraft in its natural state. *Gwathmey*, 342 N.C. at 301. The watercraft may simply be recreational boats, including canoes and kayaks, and is not limited to craft used for trade. *Id.* at 300. The question is one of capacity to be used, not purpose of use. *See id.* at 301.

In *Gwathmey*, the owners of marshlands conveyed by the State argued that the submerged lands were not navigable in fact. *Id.* at 292. The trial court agreed, but the Supreme Court overturned the ruling because the lower court based its inquiry on the historical use of the waters. *Id.* at 310-11. The Court ruled that the proper test is whether navigation is possible. *Id.* at 311. While evidence of past or present navigation "tends to support a finding that the waters are navigable in fact," it is not essential to reach a conclusion of navigability. *Id.*

(F) NAVIGABILITY CANNOT BE DEFEATED BY SHOWING THAT OBSTRUCTIONS TO NAVIGATION EXIST ON A RIVER

The long-standing test used by the United States Supreme Court upholds state title to land under rivers even if there are interruptions or obstructions on the river to navigation. In 1870, the United States Supreme Court held that rivers in the states were navigable for hundreds of miles above tidewater, and for these rivers a navigability-in-fact test applied. The test was articulated as follows:

"A different test must, therefore, be applied to determine the navigability of our rivers, and that is found in their navigable capacity. Those rivers must be regarded as public navigable rivers in law which are navigable-in-fact. And *they are navigable-in-fact*

when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water."

The Daniel Ball, 77 U.S. 557, 563 (1870) (emphasis added).

Four years later the Supreme Court established that navigability-in-fact was not defeated and did not disappear at the segments of a river posing common obstructions to navigation. See United States v. The Steamer Montello, 87 U.S. 430, 432 (1874). The *Montello* Court considered the Fox River in Wisconsin, which included chutes, falls, and rapids that made navigation difficult: "All these embarrassed the navigation of early days, but they did not destroy or even much arrest it." *Id.* Explorers and fur traders had traveled the Fox River before the Revolution, despite obstructions. They would unload their boats and portage the cargo, loading it into another boat or the same boat to continue the journey up to the source of the Fox River. After this, the traders portaged to the Grand River, which connected to the Mississippi. *Id.*

Navigability is proven when a river can be used as a highway for commerce, interruptions on that highway do not defeat navigability. *Tyre Glen* was decided before both the *Daniel Ball* and the *Montello* cases and did not analyze the facts using those tests either. The *Montello* Court held:

"[T]he true test of the navigability of a stream does not depend on the mode by which commerce is, or may be conducted, *nor the difficulties attending navigation.* If this were so, the public would be deprived of the use of many of the large rivers of the country over which rafts of lumber of great value are constantly taken to market. * * *

Indeed, there are but few of our fresh water rivers which did not originally present serious obstructions to an uninterrupted navigation. "

United States v. The Steamer Montello, 87 U.S. 430, 441 (1874) (emphasis added).

The Secretary of War's efforts and the enactment of the General Assembly also show that the Yadkin River is navigable under the test as articulated by the United States Supreme Court in *Montello*. Just as in the Yadkin River, the Fox River had obstacles to navigation. Like the Fox River, the Yadkin River had both natural and manmade obstacles to uninterrupted navigation. To hold that such obstructions defeat title would allow private parties erecting mill dams to defeat state title and claim public land thereby. Such can only happen by explicit grant from the state to a private owner and then only if for a public benefit and subject to the public trust doctrine.

In 2009, the Court of Appeals held that plaintiffs had failed to meet their burden of proof to show navigability of a stream. *See* Bauman v. Woodlake Partners, LLC, 681 S.E.2d 819, 826 (N.C. Ct. App. 2009). The *Bauman* court held that the plaintiff boaters did not establish that the river was navigable beyond several isolated stretches and failed to offer evidence of its navigability in fact prior to the dam's construction. *Id.* at 826-27. The Court noted that the dam itself now posed an obstacle to navigation, but that this physical obstacle would not render the stream non-navigable at law. In explaining its reasoning, the court said: "Were we to adopt such a rule, many of the major rivers in North Carolina, such as the Catawba and the Yadkin, would become non-navigable, which would be a troubling result." *Id.* at 826. The *Bauman* court, thus noted the navigability of the Yadkin River as established in fact and law. Interruptions in its

navigability caused by dams and other obstructions do not defeat state title. The result in *Bauman* is consistent with precedent from the United States Supreme Court in the *Montello* and *Daniel Ball* cases.

The navigability in fact test does not distinguish between natural and artificial waterways. In *Fish House, Inc. v. Clarke*, the owner of a private canal connecting to a navigable river brought a trespass action against a boater. 693 S.E.2d 208, 210 (N.C. Ct. App. 2010). The defendant argued that she could not be excluded from the canal because the lands submerged beneath it were protected by the public trust doctrine because the canal was navigable. *Id.* at 210. The Court of Appeals agreed, and noted that the South Carolina Supreme Court had reached the same conclusion based on the same definition of navigability applied in North Carolina. *Id.* at 211-12 (citing Hughes v. Nelson, 303 S.C. 102, 399 S.E.2d 24 (1990)).

The North Carolina Department of Environment and Natural Resources based its intervention in FERC's relicensing process in part on the State's title to the beds of navigable waters, strongly suggesting that the Yadkin riverbed is held by the State. *See* Notice of Intervention at 4. The Superior Court of Forsyth County ruled that the Yadkin was navigable in 2002 based on the fact that it "historically was navigated by ferries, flatboats, and pleasure craft." Carolina Sand, Inc. v. Northbrook Carolina Hydro, LLC, 2002 WL 34146903 (N.C. Super. 2002). The construction of Alcoa's dams did not render the Yadkin legally non-navigable. *See Bauman*, 681 S.E.2d at 826. N.C. Gen. Stat. § 76-40 excludes reservoirs related to hydropower from the definition of navigable waters, but only for the purposes of one section of Chapter 76, the section which prescribes procedures for filling of navigable waterways. *See* N.C. Gen. Stat. § 76-40.

For all other purposes, a hydropower reservoir is subject to the same rules and laws as any other navigable waters.

The Yadkin River's navigability is supported by concrete evidence of recent navigation. Dean Naujoks of the Yadkin Riverkeeper paddled 185 contiguous miles of the Yadkin in 2010 and 2011. *See* Naujoks Aff. On his tour, he discovered that the only portage required is at dams on the River and no other obstacles to navigation exist on the river. *Id.* With the exception of the dams, the Yadkin is physically navigable by canoe and kayak from at least the W. Kerr Reservoir to Morrow Mountain State Park. *Id.* Naujoks' excursion demonstrates that the Yadkin remains a navigable river with the only obstacles to navigation being dams.

FERC has jurisdiction over hydropower projects on the navigable waters of the United States. 16 U.S.C. § 797(e). Were the Yadkin to fall outside of that category, FERC could not regulate hydroelectric projects on it. FERC officially recognized the Yadkin's navigability in hearings on the Idols project, upstream of the Yadkin Project. *See In re Duke Power Co.*, 12 F.E.R.C. 62,052, 63,101-02 (1980). The federal definition of navigability, moreover, is narrower than the North Carolina definition. Because federal navigability depends on the Commerce Clause, its navigability in fact inquiry examines a water body's potential *commercial* use. The Daniel Ball, 77 U.S. 557, 563 (1870). In contrast, purely recreational boating alone can indicate navigability in fact according to state law. *Gwathmey*, 342 N.C. at 301.

FERC's involvement confirms that the Yadkin River is navigable under federal law, and Alcoa's application to FERC for licensing constitutes an admission as to its

navigability under the federal test. Because it is navigable under the narrower federal definition, the Yadkin is clearly navigable under the less stringent state test.

As it runs today, the Yadkin is far easier to navigate than other rivers held navigable for purposes of FERC jurisdiction. The Yadkin is far easier to navigate by canoe than the New River, a flashy whitewater stream as it courses through Virginia and West Virginia, which the Supreme Court held was navigable. United States v. Appalachian Electric Power, 311 U.S. 371 (1940). The size of the vessels used does not determine navigability in any respect, nor do interrupting rapids or falls. *Id.* Moreover, the expansion of the Yadkin River's boundaries through damming may have brought additional submerged lands into the public trust. *Fish House* shows that a private party can expand the reach of navigable waters when it builds a canal connecting to a navigable stream. *Fish House*, 693 S.E.2d at 211. Alcoa's dams flooded many acres of shoreline, turning previously dry land into navigable waters.

(G) THE DEPARTMENT OF ADMINISTRATION IS THE PROPER AGENCY OF THE STATE OF NORTH CAROLINA TO DEFEND THE STATE'S TITLE TO THE BED OF THE YADKIN RIVER

The State of North Carolina has divided its public trust responsibilities between DOA and DENR. DOA has a statutory duty to "provide for such ancillary services as the other departments of State government might need to insure efficient and effective operations." N.C. Gen. Stat. § 143B-367. One such service is keeping an inventory of all state-owned lands. *See id.* § 143-341(4)(a). Any sale, lease, or gift of state land must be made by DOA and approved by the governor and Council of State. *Id.* § 146-27. Moreover, sales of lands worth more than $25,000 may only occur upon consultation with the Joint Legislative Commission on Government Operations. *Id.* Finally, sales of

public trust lands can only occur with the express approval of the General Assembly. *Gwathmey v. State*, 342 N.C. 287, 304, 464 S.E.2d 674, 684 (1995).

To fulfill its duty to assist other agencies, DOA must investigate whether Alcoa is entitled to use the submerged lands on which the dam was built. *See* N.C. Gen. Stat. § 143B-367. The Motion to Present Evidence, if successful, will require that the State prepare and produce evidence regarding ownership of lands under the Yadkin Project, including the flooded riverbed. If DOA refuses to identify state-owned resources, it effectively creates a presumption that Alcoa may use the public land and then charge the State to buy it back if recapture is effectuated. The General Assembly gave DOA the role of assisting any state agency to perform its duties. DOA has the responsibility to maintain the inventory of state lands, and effective administration begins there. *See* N.C. Gen. Stat. § 143B-367.

Following passage of the 1885 law, the General Assembly chartered a number of public utilities which sought to create regulated public power systems. In 1897, the State of North Carolina executed grants under the entry and grant system to sections of the bed of the Yadkin River to a person identified as W. Smithdeal. These grants can only have been properly made if the State of North Carolina had title to the bed of the Yadkin River to begin with. Thus, the grants themselves are evidence that the State had title to the bed of the Yadkin River and attempted to convey some of its interests therein to Mr. Smithdeal. In turn, these grants were transferred to the Yadkin River Power Company and do not appear to have transferred further according to the records of the Stanly County Register of Deeds.

DOA must now investigate whether the Yadkin riverbed was state-owned or is currently so. The Smithdeal Deeds were only discovered by the undersigned two weeks ago, but they raise critical issues about the Motion that the State of North Carolina has filed in the FERC case. Should the Department of Administration fail to investigate the state of Alcoa's title vitiates its statutory duty to maintain the inventory of public lands. This omission yields a situation where Alcoa's mere claim of ownership amounts to a *de facto* determination by the State of such a right, despite the lack of evidence indicating Alcoa's title, easement, or other instrument allowing exclusive use of a public trust resource.

(H) THE STATE MAY HAVE CONVEYED PORTIONS OF THE BED OF THE YADKIN RIVER TO PREDECESSORS OF THE YADKIN RIVER POWER COMPANY AND THE DOA HAS DUTY TO INVESTIGATE WHETHER THE STATE DID SO

Public trust lands owned by the State cannot be sold or otherwise conveyed to a private party unless the General Assembly authorizes the sale "in the clearest and most express terms." *Gwathmey v. State*, 342 N.C. 287, 304, 464 S.E.2d 674, 684 (1995). Absent that express authorization, a presumption exists that no conveyance ever occurred. *Id.* Additionally, in disputes over land that may be potentially owned by the State, it is presumed that the State is the true owner unless the other party shows "good and valid title." N.C. Gen. Stat. § 146-79. Given that the Yadkin River is navigable and therefore its bed is held by the State in trust for the public, title for the riverbed belongs to the State barring evidence that the General Assembly expressly conveyed title to Alcoa. The Smithdeal Deeds do provide evidence that some portions of the bed of the Yadkin

River were conveyed away to the Yadkin River Power Company. There is no record evidence that these deeds were conveyed to Alcoa or its predecessors.

The General Assembly gave DOA responsibility to manage submerged lands in 1959. N.C. Gen. Stat. § 146-1. In 1995, The General Assembly prescribed a method for obtaining easements for these lands in exempted FERC-licensed hydroelectric reservoirs. 1995 N.C. Sess. Laws 529. The exemption, however, does not mean that FERC licensees may simply use state land as it wishes without permission. Nothing in the General Statutes suggests that the General Assembly intended to assign such a blanket right to occupy public trust resources. *Gwathmey* would strongly hold against such a conclusion. *Gwathmey*, 342 N.C. at 304.

Prior to 1995's amendments, easements in lands covered by navigable waters had to be approved by the Governor and Council of State. 1995 N.C. Sess. Laws 529. Alcoa's Tuckertown dam was not built until 1962 and therefore needed to obtain an easement; there is no record of such an easement. Before Section 146-1's enactment in 1959, a dam operator would still need to obtain a legal right to use public lands, just not through the exact procedures later codified in Chapter 146.

Alcoa cannot claim an implied easement by necessity. To be eligible for an easement by necessity, the claimant must prove that the claimed dominant and subservient tracts were once commonly owned and that the necessity for the easement stemmed from their separation. Jernigan v. McLamb, 192 N.C. App. 523, 526, 665 S.E.2d 589, 592 (N.C. Ct. App. 2008). Alcoa acquired many parcels of shoreline from various private landowners, but never did or could own the public trust riverbed. The

riverbed cannot be a claimed dominant tract because it was never of a common ownership with the shoreline.

Alcoa cannot credibly claim that it acquired the right to the riverbed through adverse possession. Property held in trust for the public cannot be adversely possessed. N.C. Gen. Stat. § 1-45.1. The General Assembly's declaration that the Yadkin was navigable passed in 1885, decades before Alcoa built any dams. 1885 N.C. Sess. Laws 389-91. Furthermore, while Alcoa claimed that the Yadkin River was non-navigable, its acceptance of FERC jurisdiction manifests a belief that it was navigable. *See* Application for License at 2, Feb. 1, 1956. Without navigability, FERC could not be involved with the approval of the Yadkin Project.

North Carolina courts have never held that public trust resources could be adversely possessed. *Walker v. Parker* suggested that adverse possession of some state lands was at least once accepted practice. *See* 85 S.E. 306, 308 (N.C. 1915). Not all state lands, however, are public trust resources, and courts in the early twentieth century routinely held that public trust resources were not treated like ordinary real property held by the state. *See, e.g.,* State v. Twiford, 136 N.C. 603, 609, 48 S.E. at 586, 588 (1904); Shepard's Point Land Co. v. Atlantic Hotel, 132 N.C. 517, 527, 44 S.E. 39, 42 (1903). At the time of the construction of the first dam, no party could reasonably have been under the misapprehension that public trust resources could be adversely possessed.

(I) THE YADKIN RIVER BED OWNERSHIP ISSUE HAS IMPLICATIONS FOR DENR'S EXERCISE OF ITS ROLES AS PROTECTOR OF PUBLIC TRUST

Referring to the Public Trust Resources, the General Assembly has stated that DENR has the responsibility to "secure for the people of North Carolina, now and in the

future, the beneficial uses of these great natural resources." N.C. Gen. Stat. § 143-211(c). The General Assembly authorizes DENR and the Wildlife Resources Commission to:

> (1) Comment on and object to permit applications submitted to State agencies which may affect the public trust resources in the land and water areas subject to their respective management duties so as to conserve and protect the public trust rights in such land and water areas;
>
> (2) Investigate alleged encroachments upon, usurpations of, or other actions in violation of the public trust rights of the people of the State; and
>
> (3) Initiate contested case proceedings under Chapter 150B for review of permit decisions by State agencies which will adversely affect the public trust rights of the people of the State or initiate civil actions to remove or restrain any unlawful or unauthorized encroachment upon, usurpation of, or any other violation of the public trust rights of the people of the State or legal rights of access to such public trust areas.
>
> *Id.* § 113-131(b).

Public trust rights "include, but are not limited to, the right to navigate, swim, hunt, fish, and enjoy all recreational activities in the watercourses of the State." *Id.* § 1-45.1. DENR may bring civil actions against any legal entity that has "unlawfully encroached upon, usurped, or otherwise violated the public trust rights of the people of the State or legal rights of access to such

public trust areas." *Id.* § 113-131(c). In addition, the General Assembly directed DENR "to administer a complete program of water and air conservation [and] pollution abatement and control." *Id.* § 143-211(c). This includes the power to review, approve, and reject Clean Water Act 401 certifications. *Id.* § 143B-282(a)(1)(u).

Since DENR has the power by statute to initiate investigations of and litigation against public trust violations, its failure to do so in this case clearly contradicts the State's overarching duties as trustee of the public's natural resources.[1] The Constitution demands that the air and water resources of North Carolina be "protect[ed] and conserv[ed] . . . for the benefit of all its citizenry." N.C. Const. art. XIV, § 5. DENR must work with DOA to fulfill its statutory duties to guard the Public Trust

(J) YADKIN RIVERKEEPER IS A PERSON AGGRIEVED BY THE STATE'S FAILURE TO INVENTORY THE SUBMERGED LANDS OF THE YADKIN RIVER IN THE YADKIN PROJECT

Since 1958, Alcoa has been allowed by FERC license to monopolize the bed of the Yadkin. The failure to inventory the state owned submerged lands in The Yadkin River directly harms the ability of the State to pursue recapture of Alcoa's license at FERC. The Yadkin Project dams infringe the Yadkin Riverkeeper's members' rights of navigation. Their dams impede the movement of fish up and down the Yadkin River. The Yadkin Riverkeeper's members live, work, and recreate in the vicinity of the Yadkin River Project. Thus, the failure to protect the waters of the Yadkin for the public trust impairs the Yadkin Riverkeeper's organizational efforts to maintain a healthy Yadkin

[1] While the Yadkin Riverkeeper has challenged DENR's decision to grant Alcoa a 401 certification in the Office of Administrative Hearings, those particular claims were based on DENR's failure to comply with the North Carolina Environmental Policy Act (SEPA). The Riverkeeper raises no such issues here, nor any claims directly related to SEPA. The stay issued in that case therefore has no application to this petition and its subject matter.

River Basin. In addition, the State's failure to assert public trust rights on the Yadkin River harms the rights of residents of North Carolina, many of whom are members of the Yadkin Riverkeeper. Any failure to protect its member's interests harms the organization.

The Department of Administration's duty is to protect as a public trust resource the riverbed of the Yadkin obstructs the Yadkin Riverkeeper's organizational purpose of protecting and maintaining public use of the Yadkin. Further, it deprives the organization's members of their public trust rights to full use of the riverbed of the Yadkin. A favorable determination by the Secretary of Administration on this request for declaratory ruling would redress these harms. The Yadkin Riverkeeper is a "person aggrieved" pursuant to N.C. Gen. Stat. § 150B-2(6).

The FERC license for the Yadkin Project allows the applicant to act as though it has a monopoly on the Yadkin River, but this cannot pass constitutional muster when for private gain. *See Thrift*, 30 S.E. at 351. Alcoa has been receiving an exclusive emolument without providing a public service. An inventory of the submerged lands on the Yadkin River would allow the State the information it needs to defend the rights of the public. This emolument is injuring the Yadkin River, a public trust resource. The State violates its duty to the public as trustee by failing to assert its ownership; to inventory these lands; to research these deeds and thereby to protect the Yadkin. In researching these deeds, the State may discover that they are part owners of the dams themselves as fixtures attached to State Land. If the reservation of rights calling for rent has not been collected, the State may be owed monies for the use of these lands by the Yadkin Project for dam construction. Without an inventory of the Yadkin River's state-

owned submerged lands, the State cannot carry out its duties to defend the Public Trust resources of the River.

VI. Conclusion

By law, DOA must keep an inventory of lands held by the State in trust for the public. The bed of the Yadkin River is a public trust resource held by the State because the river is navigable in fact, was declared navigable by the General Assembly, and was never expressly conveyed to Alcoa or its predecessors in title by the General Assembly. DOA must recognize the public ownership of the Yadkin riverbed because no other conclusion can be supported by fact or law and must investigate the Smithdeal Deeds and any other original records of grants in its files to conduct such an inventory.

VII. Proposed Ruling

Pursuant to N.C. Gen. Stat. §§ 143-341(4)(a) and 143B-367, the Yadkin Riverkeeper respectfully requests that the Secretary issue a ruling declaring that: (a) that the Department of Administration has the duty to maintain an accurate inventory of all state-owned lands; (b) that the State of North Carolina owns the bed of the Yadkin River in trust for the People of North Carolina as subject to the doctrine of the Public Trust; (c) that the State of North Carolina has asserted to FERC that the license for the Yadkin Project no longer serves the public interest and the Department of Administration is obligated to assist the State in its efforts to recapture the Yadkin Project; (d) that the Department of Administration is the proper agency of the State of North Carolina to defend the State's real property interests in the bed of the Yadkin River in the Yadkin Project; and (e) that the Department of Administration must investigate whether title has

been granted away from the State in the bed of the Yadkin River in the vicinity of the Yadkin Project.

VIII. Request for Oral Argument

Petitioners request the opportunity for oral argument before the Secretary. The interplay between DOA's duties, the public trust doctrine, and common-law and constitutional prohibitions is complex and the issue warrants a hearing.

Respectfully submitted this 13th day of December 2011.

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Counsel for Petitioner Yadkin Riverkeeper

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Request for Declaratory Ruling have been be served by being mailed via U.S.P.S. to the following addressees:

Secretary of Administration,
116 West Jones Street
Raleigh, North Carolina 27611
(per rule 01 NCAC 01B.0602)

Moses Carey, Jr.
Secretary of Administration
1301 Mail Service Center
Raleigh, NC 27699-1301

Roy Cooper
Attorney General of North Carolina
9001 Mail Service Center
Raleigh, N.C. 27699-9001

This the **13th** day of **December, 2011**

James P. Longest, Jr. "Ryke"
State Bar No. 18297

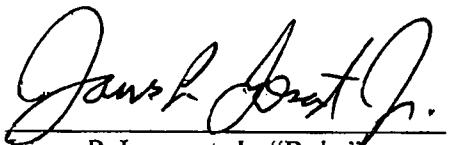
BEFORE THE NORTH CAROLINA SECRETARY OF ADMINISTRATION

YADKIN RIVERKEEPER, INC. Petitioner.	)	APPENDIX OF EXHIBITS

I. **APPENDIX OF DOCUMENTS SUPPORTING THE FACTS PRESENTED IN THE YADKIN RIVERKEEPER'S REQUEST FOR DECLARATORY RULING**

Pursuant to N.C. Gen. Stat. § 150B-4 and 01 N.C. Admin. Code 01B.0602 et seq., the Yadkin Riverkeeper, Inc. ("Yadkin Riverkeeper") submits this Appendix of Exhibits in support of the facts set forth in its Request for Declaratory Ruling to the North Carolina Secretary of Administration ("Secretary") requesting the following rulings: (a) that the Department of Administration has the duty to maintain an accurate inventory of all state-owned lands; (b) that the State of North Carolina owns the bed of the Yadkin River in trust for the People of North Carolina as subject to the doctrine of the Public Trust; (c) that the State of North Carolina has asserted to FERC that the license for the Yadkin Project no longer serves the public interest and the Department of Administration is obligated to assist the State in its efforts to recapture the Yadkin Project; (d) that the Department of Administration is the proper agency of the State of North Carolina to defend the State's real property interests in the bed of the Yadkin River in the Yadkin Project; and (e) that the Department of Administration must investigate whether title has been granted away from the State in the bed of the Yadkin River in the vicinity of the Yadkin Project.

Respectfully submitted this 13th day of December 2011.



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Counsel for Petitioner Yadkin Riverkeeper

46TH CONGRESS, 1st Session. | SENATE. | Ex. Doc No. 35.

LETTER

FROM

THE SECRETARY OF WAR,

COMMUNICATING

In obedience to law a copy of the report of S. T. Abert, United States civil engineer, upon the survey of the Yadkin River, North Carolina, "between the bridge on the North Carolina Railroad and Wilkesborough."

JUNE 9, 1879.—Referred to the Committee on Commerce.
JUNE 28, 1879.—Ordered to be printed.

WAR DEPARTMENT,
Washington City, June 5, 1879.

The Secretary of War has the honor to transmit to the United States Senate, in compliance with section 2 of the river and harbor act of June 18, 1878, copy of report from Mr. S. T. Abert, United States civil engineer, upon the survey of Yadkin River, North Carolina, "between the bridge on the North Carolina Railroad and Wilkesborough."

G. W. McCRARY,
Secretary of War.

The PRESIDENT *pro tempore United States Senate.*

OFFICE OF THE CHIEF OF ENGINEERS,
Washington, D. C., June 5, 1879.

SIR: In compliance with the requirements of section 2 of the river and harbor act of June 18, 1878, I have the honor to submit herewith a copy of the report to this office of Mr. S. T. Abert, United States civil engineer, upon the results of a survey of Yadkin River, North Carolina, "between the bridge on the North Carolina Railroad and Wilkesborough," with estimates of cost of improvements suggested.

Very respectfully, your obedient servant,

H. G. WRIGHT,
Acting Chief of Engineers.

Hon. GEO. W. McCRARY,
Secretary of War.

SURVEY OF YADKIN RIVER, NORTH CAROLINA, BETWEEN THE BRIDGE ON THE NORTH CAROLINA RAILROAD AND WILKESBOROUGH.

UNITED STATES ENGINEER OFFICE,
Washington, D. C., May 12, 1879.

GENERAL: I have the honor to submit the following report upon a survey of the Yadkin River, North Carolina, "below the bridge on the

EXHIBIT III a
PENGAD 800-631-6989

North Carolina Railroad and Wilkesborough," provided for by the act of appropriation for rivers and harbors approved June 18, 1878, and assigned to me by your letter of July 8, 1878.

The Yadkin River rises in Caldwell County, North Carolina, at the foot of the Blue Ridge, between Watauga Gap and Blowing Rock. Its general course is southeast, flowing through fine alluvial bottom-lands, and through remarkably picturesque rapids called the Narrows; it empties into the Atlantic at Georgetown, S. C. In the last State it takes the name of the Great Pee Dee, and is navigable for steamers 120 miles from its mouth.

The part of the river to which the following report is limited extends from Wilkesborough, in Wilkes County, N. C., to within 5 miles of Salisbury, in Rowan County, N. C.

FLOODS.

The stage of the river at the time of commencing the survey was 4 inches above low-water, and no floods occurred until November 26, when the survey had proceeded as far as Clouse's Shoal, 84 miles from Wilkesborough. At this point, November 27, the river rose 10.1 feet above low-water. The next flood, December 2, rose at Bailey's Ferry 12.4 feet above low-water.

The third flood occurred December 11, when the river at Motley's plantation, 3 miles above the mouth of the South Yadkin, was 9.7 feet above low-water. The flood of September, 1878, was the highest ever experienced at Wilkesborough, rising 23 feet above low-water.

The high-water mark at Langenhone & Neason's mill is 22.9 feet above low-water. Ordinary floods subside in from 36 to 48 hours. Twenty-five years ago high floods rarely occurred. Their frequent occurrence at the present day is probably due to the clearing of the hillsides and the removal of obstructions from the river and its numerous tributaries.

AGRICULTURE.

From the slopes of the Blue Ridge on the north, the Brushy Mountains on the south, and the valley between, nearly everything compassed by the wants of man may be produced. The Blue Ridge country is especially adapted to grazing. In cereals, grasses, and garden vegetables the broad bottom-lands of the valley are exceedingly productive. Lands which have been cultivated for one hundred consecutive years, producing corn and wheat, are more productive to-day than ever, and that, too, with no fertilizers except the deposits of floods. The flood of September, 1878, covered the bottom-lands of Wilkes County with a rich sediment 2 to 10 inches in depth. The yield of bottom-land per acre is: of corn, 40 to 70 bushels; of wheat, 15 to 30 bushels. Tobacco is grown quite extensively on the high ground adjoining the bottom-lands above the flood limits. The quality is fine and the yield per acre is good. The Brushy Mountain region is especially noted for its fruits. Apples, pears, peaches, plums, quinces, grapes, berries, &c., are produced. Early fruits are raised here, and some varieties of apples produce two crops annually. Cotton is raised to some extent, and some good fields were noticed. Davidson County land is well adapted to cotton-culture.

The following, compiled from statistics furnished by the department of agriculture at Raleigh, and information obtained from prominent

citizens and large land owners, is a fair estimate of the annual products of the more important crops in the several counties bordering on the Yadkin where the survey was made:

Wheat.	Corn.	Sweet potatoes.	Irish potatoes.	Oats.	Sorghum.	Tobacco.	Green fruit.	Dried fruit.	Butter.
Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Gallons.*	*Pounds.*	*Bushels.*	*Pounds.*	*Pounds.*
535,000	2,073,000	94,000	70,000	387,000	133,000	2,046,000	695,000	1,498,000	575,700

The quantities, however, are largely in excess of the amount which would become tributary to the trade of the river in its improved condition, which, assuming that the river will drain an area of 10 miles upon each side, would be as follows:

Wheat.	Corn.	Oats.	Sweet potatoes.	Irish potatoes.	Sorghum.	Tobacco.	Green fruit.	Dried fruit.	Butter.
Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Gallons.*	*Pounds.*	*Bushels.*	*Pounds.*	*Pounds.*
165,000	962,000	109,000	30,000	24,000	51,000	731,000	215,000	487,000	269,000

MANUFACTURES.

The manufacturing interests of that part of the valley where the survey was made are chiefly at Elkin, Surry County, on the Elkin River. The cotton mill of the Elkin Manufacturing Company employs about 40 hands, has a capacity of 1,000 spindles, and consumes 250 to 300 bales of cotton annually, producing cotton yarns and sheetings.

The Elkin Valley woolen mill employs 12 hands and manufactures woolen yarns, jeans, and cassimeres. There are flour mills in connection with the cotton and woolen mills. The Elkin River furnishes an abundant and never-failing water supply. Labor is cheap, and the locality healthy.

At Siloam, Surry County, one-half mile from the river, on Hogan's Creek, are the tobacco factory, saw and grist mills of the R. E. and M. C. Reeves, employing 20 hands.

There are a large number of saw and grist mills scattered throughout the valley, and on the Yadkin, or in the immediate vicinity on streams emptying into the Yadkin; between Wilkesborough and Salisbury are 18 saw and grist mills. On the left, below Huntsville, Yadkin County is the celebrated whisky distillery of Joseph Williams, and at Elbaville, Davie County, near Bailey's Ferry, is the distillery of Alexander Bailey. A great many creeks and small rivers rising in the northern part of North Carolina or Virginia take their courses southerly to the Yadkin, forming most excellent water-powers.

The forests abound in such timbers as ash, several varieties of oak, cedar, cherry, chestnut, hickory, locust, several varieties of pine, poplar, white and black walnut in great abundance, and many other varieties,

offering great attractions to furniture manufacturers and workers of wood generally.

The following description is from the journal of Mr. S. W. Evans, assistant engineer:

MEMORANDA OF A SURVEY OF THE YADKIN RIVER FROM WILKESBOROUGH, WILKES COUNTY, TO SALISBURY, ROWAN COUNTY, NORTH CAROLINA.

Wilkesborough is the county town of Wilkes County, and is one of the oldest towns in the State. Population, 300. It is pleasantly situated on a high bluff overlooking the valley. Besides the county buildings, it contains 3 churches, 6 stores, 1 hotel, blacksmith-shop, 2 carriage-shops, shoe and harness shops, &c.

The initial point of the survey was taken on the right bank of the river, directly back of the court-house, from which transit and level lines were run to the river. Here we crossed to the left bank. The river is 150 feet wide. The channel is on the right side and is 3 feet deep.

Reddie's River.—At 1,700 feet Reddie's River enters from the north. One mile from the Yadkin on Reddie's River is Dr. Hackett's saw-mill.

Gordon's Ford Shoal.—At 2,210 feet is Gordon's Ford Shoal. The ford is not in use. The shoal consists of gravel, small bowlders, and submerged logs Length, 300 feet; fall, 0.44 foot; depth, 1.2 feet. Thence there is good navigation 620 feet to Finley's Ford Shoal. An open bridge for carriages and foot passengers was located here, but was washed away by the flood of September, 1878.

Finley's Ford Shoal.—This shoal, like the preceding one, is composed of gravel, loose stones, and drift. Length, 440 feet; fall, 1.72 feet; depth, 0.6 foot. In low-water a bar shows near the middle of the river. Thence 1,900 feet to Blair's Island the depth is sufficient.

Blair's Island Shoal.—The island is high and cultivated. The best channel is on the left. The bottom is gravel. At the head of the island the depth is 1.8 to 2 feet for 400 feet. Near the foot is an old fish-dam and a deposit of sand and gravel below, shoaling the water to 0.6 of a foot for 130 feet. At 580 feet from the head on the left bank, a large overhanging birch should be removed. The water runs swiftly to the foot of the island. Length of shoal, 1,700 feet; fall, 3.44 feet. Thence 820 feet the depth is sufficient. Here a high point of rock is 0.6 of a foot below the surface. Thence there is good water 1,740 feet to High Rock and Buckeye Shoals.

High Rock and Buckeye Shoals.—Length of shoals, 4,722 feet; fall, 3.63 feet. Rock and gravel bottom. Depth, 1.4 to 3.7 feet. Sixteen hundred feet below is a sand bar, recently formed and probably temporary. Length, 150 feet; depth, 2 feet. Twenty-two hundred feet further on is another short bar below a branch on the right. Depth, 2 feet. Thence 1,200 feet is a bar at the mouth of Mulberry Creek. Length, 700 feet; depth, 1.5 to 2.8 feet.

Mulberry Creek rises in the northern part of Wilkes County, and forms a magnificent water-power in its course to the Yadkin. One and one-half miles from the Yadkin, on Mulberry Creek, is the saw-mill of Charles Hunt. The natural fall at the mill is 9.1 feet in a distance of 200 feet, and it is capable of being made 30 feet. On either side a rocky bluff comes to the water. From Mulberry Creek to Hunt's Islands Shoal, 570 feet, there is good water. Fall from Wilkesborough to this point, 14.55 feet.

Hunt's Islands' Shoal.—At the upper island, the channel is on the right. The bottom is gravel until the foot of the island is reached; here a ridge of rock about 6 feet wide runs from the right bank to the island. The current is very swift. Soundings were obtained on the rock by shooting the passage (50 feet wide) several times in succession, drawing the boat up by means of a rope from the bank. Just below the rock, the water is deep. From this point the best channel is along the left bank, that to the right of the second and third islands being shallow and swift. At the time of the examination of this shoal the water was 0.8 foot high, and muddy. Length of shoal, 2,600 feet; fall, 2.75 feet; depth, 1.6 to 8 feet. Thence to Raynolds' Island, 1.11 miles, the depth ranges from 2.9 to 16 feet, and the fall is 2.01 feet.

Raynold's Island.—The natural channel is on the right; two hundred feet below the head of the island is a snag with drift. The water is shallow in several places, ranging from 1.7 to 4.5 feet. Twenty-one hundred feet below the head of the island is an old fish-dam, which should be removed. Length of shoal, 1,880 feet; fall, 216 feet. Thence 1,100 feet, a sand bar shoals the water to 2.2 feet for 150 feet. Thence there is good navigation 4,900 feet, to Staylor's Ford Shoal.

Staylors' Ford Shoal.—Length of shoal, 540 feet; fall, 1.7 feet; depth, 1.7 to 4 feet. Rock bottom, covered with gravel. Thence for 5,800 feet there are several gravel bars shoaling the water to 1.5 to 2.2 feet, and at 1,300 feet below Staylor's Ford Shoal appearing above the surface in the middle of the river. The channel is along the right bank. Fall in this 5,800 feet is 3.15 feet. Thence 750 feet, to Parke's Ledge, good navigation is found.

Parke's Ledge. Here the rock appears above the surface in several places. The best location for a channel is toward the right bank. The depth ranges from 1.8 to 4.2 feet; length, 400 feet; fall, 0.43 foot. Thence good water 520 feet to Parke's Ford Shoal is found.

Parke's Ford Shoal.—The bottom is composed of rock and bowlders. Length of shoal, 150 feet; fall, 0.4 foot; depth, 1.8 to 2.8 feet. Thence 900 feet the depth is sufficient. Here a gravel bar shoals the water to 2.4 feet for about 100 feet. Thence there is good navigation 2,070 feet to Fish Trap Shoal.

Fish Trap Shoal.—An old fish-dam obstructs navigation. The bottom is rock and gravel. Length of shoal, 1,480 feet; fall, 1.36 feet; depth, 1.4 to 6 feet. Thence there is good navigation 2,020 feet. Here a gravel bar 75 feet in length shoals the depth to 2.4 feet. At 800 feet below this point another bar 50 feet in length occurs; depth, 2.3 feet. Thence 3,770 feet to Reeves' Island at Roaring River the depth ranges from 3 to 5 feet, and the width 150 to 180 feet.

Roaring River.—From Wilkesborough to Roaring River is 10.94 miles, and the fall is 34.23 feet. Half a mile north of the Yadkin on Roaring River is the saw and grist mill of Richard Reeves. The mail-route from Elkin to Roaring River and Dellaplane crosses the Yadkin at this point.

Reeves' Island and Fish-Dam.—At Reeves' Island nearly all the water runs in the right channel, giving a depth of 2.5 to 5 feet; 1,600 feet below the head of the island is an old fish-dam belonging to Messrs. Foot & Reeves. The fall here is .76 foot in 86 feet. From the head to the foot of the island is 2,700 feet and the fall is 3.86 feet. The water runs swiftly the whole distance. Thence good navigation exists for 2,240 feet to a rocky shoal with fish-dam and bowlders. Length of shoal, 600 feet; fall, .89 foot; depth, 2 feet and upwards. Thence there is good navigation 1,780 feet to Greenwood's Island.

Greenwood's Island.—The channel is on the right and the depth is sufficient except near the foot, where gravel and detached rock, are within 2 feet of the surface for 150 feet. From the head to the foot of the island is 1,900 feet; fall, 1.18 feet. At a point 1,000 feet below the island a gravel bar 50 feet in length shoals the water to 2.3 feet. Thence 4,020 feet to Adams' Island there are no obstructions to navigation. Distance from Wilkesborough to Adams' Island, 13.7 miles; fall, 44.33 feet.

Adam's Island.—Both channels were examined. In the right, which is the better one, the depth ranges from 2.4 to 3.7 feet. The bottom is gravel. From the head to the foot of the island is 1,600 feet and the fall is 1.6 feet. Thence good navigation is found for 4,800 feet to Hickerson's Island.

Hickerson's Island, No. 1.—The main channel is on the right, and is sufficiently wide and deep. An overhanging willow tree near the head of the island on the right bank should be removed. From the head to the foot of the island is 1,200 feet, and the fall is .86 foot. Thence good water is found for 800 feet to Harrell's Island.

Harrell's Island and Fish-Dam.—The water runs swiftly in both channels, but the left has the better depth and is wider than the right; 600 feet below the head of the island is a fish-dam. The depth immediately above the dam is 2.8 feet, and below 3.8 feet. Fall from the head of the rapid to a point just below the dam is 1.86 feet. Two snags at the left bank above the dam should be removed. Thence for 4,880 feet to Hickerson's Island, No. 2, the only obstructions to navigation are 3 snags.

Hickerson's Island, No. 2.—Both channels well examined. The left is the better for improvement. At the head of the island is an old fish-dam which must be removed. Toward the foot is a gravel shoal 350 feet long. Depth on the shoal 0.9 to 2.7 feet. From the head of the island to the foot of the shoal is 1,400 feet; fall, 1.36 feet. The fall at the fish-dam is .65 in 300 feet. Thence 1.33 miles to Gwynn's Island there is good navigation, the depth ranging from 3 to 12 feet, and the width 160 to 200 feet.

Gwynn's Island.—Gwynn's Island is low and sandy, supporting a few willow bushes. The left channel is crooked and shallow and receives the wash from the island in high-water. The depth in the right channel and to the foot of the shoal, below the island, is 2 to 36 feet. Length, 800 feet; fall, 0.90 foot. A short distance below the island are two snags to be removed. Thence there is good navigation 1 mile to the residence of Mr. James Gwynn. Here is an old fish-dam which should be removed. A large rock shows at this point in the middle of the river; the channel on either side is sufficiently wide and deep. Thence there are no obstructions for 1.3 miles to

Sayles' Ford.—Here a gravel bar 150 feet in length shoals the water to 2.3 feet. Thence 1,060 feet to Swan Creek Shoal good navigation exists.

Swan Creek Shoal.—On this shoal a dam extends the full width of the river, originally built (it is stated) for boats to pass through, but now used by Messrs. Greenwood & Harris for a fish-dam. The best channel is on the left. Depth on the shoal, 1.7 to 5.5 feet; length, 3,160 feet; fall, 5.40 feet; rock bottom. Thence 1.01 miles to

Little Elkin Shoal.—The depth ranges from 2.6 to 6.9 feet. There are two old fish-dams in this shoal, one below the other. The best channel is about on a line with the traps. Length of shoal, 800 feet; fall, 2.16 feet; depth, 2 to 3 feet. Gravel bottom

was found by the sounder, but the contour of the bottom indicates rock; 900 feet below is a gravel bar at

Wilcox's Ford.—Length, 100 feet; depth, 1.7 to 2.4 feet. Thence 2,800 feet the depth is sufficient. Here the depth is 2.4 feet, and from this point, 1.57 miles to Elkton and Jonesville Bridge, the depth is 2.2 to 5 feet and the fall 5.44 feet. The bottom is gravel and detached rock. At 2,800 feet above the bridge an old fish-dam obstructs navigation. Just above the bridge the current is rapid. A fish-dam extends nearly the full width of the river. Gravel has accumulated below the dam on the right. The fall in 550 feet is 1.86 feet.

Elkin Toll Bridge.—This bridge is an inclosed wooden structure, single span, 235 feet long, 18 feet wide, and 25 feet in the clear above low-water. The Elkin River, which enters a few rods above the bridge, rises in the Blue Ridge, and forms a very excellent water-power.

Elkin.—Elkin is a busy manufacturing town, containing 1 cotton-mill, woolen-mill, several flour-mills, saw-mill, stores, carriage-shop, blacksmith-shop, post-office, church, and private residences. Quite an extensive trade centers here. The town is finely located, one-fourth of a mile from the river, on the southern slope of the high ground overlooking the valley.

Jonesville.—Jonesville is a farm village on the right bank of the river, immediately opposite Elkin. From Elkin bridge there is good navigation 4,600 feet to

Town Creek Shoal.—Length of shoal, 1,000 feet; depth, 2 to 2.8 feet; fall, 0.81 foot; gravel bottom. Thence 4,600 feet to

Greenwood's Creek Shoal.—The depth is sufficient. Rock bottom. The best location for an improved channel is through the right wing of the old fish-dam, near the right bank. Length of shoal, 470 feet; fall, 1.28 feet; depth, 1.8 to to 3 feet. Thence 1,840 feet to

Morrison Shoal.—The least depth is 2.8 feet. The bottom is covered with detached rocks. Rock bottom. The ledge appears above the surface in the middle of the river. Depth, 1.8 to 4 feet; length, 280 foot; fall, 0.18 foot. Thence there is good navigation 1,800 feet to

Tumbling Falls.—Rock bottom; depth, 0.6 to 4.3 feet. In 200 feet the fall is 1.61 feet; there deep water is found for 700 feet with fall of 0.55 to Tumbling Shoal.

Tumbling Shoal.—Length, 1,770 feet; fall, 1.87 feet; depth, 1.to 87 feet. Toward the foot is a fish-dam; best water on the left. Thence 1.24 miles good navigation is found. Here are remains of an old fish-dam. The only improvement needed is the removal of a few detached rocks on the right, parts of the old dam. Thence 1.12 miles to Hurt's Ledge there is good navigation; 2,000 feet above Hurt's Ledge is Reeve's Ferry.

Hurt's Ledge.—This is a rough, rocky place, the rocks coming above the surface in the middle of the river for one-third its width. Probably the best channel for improvement would be on the left of the rocks. Length, 360 feet; fall, 0.89; depth 1.3 to 4 feet. Thence there is good navigation to Mitchel's Island Shoal, 2,180 feet.

Mitchel's Island Shoal.—In the upper part of the shoal the best water is on the left, bearing to the right when half way down, and on the right at the foot of the island and below. At the foot of the shoal are two old fish-dams. Length of shoal, 2,740, feet; fall, 4 feet; depth, 1 to 5 feet. The bottom is gravel and bowlders. Thence 5,500 feet, to Woodruff's Fish-Trap Shoal, there is fair navigation; the bottom for part of the distance is irregular, and it may be necessary to remove some high points.

Woodruff's Fish-Trap Shoal.—In the upper part of the shoal the fall is rapid; the best water is toward the right bank; near the foot is a fish-dam extending nearly across the river; here the best channel is toward the left. Length of shoal, 1,800 feet; fall, 4.55 feet; depth in the best channel, 2 to 4 feet, rock bottom. Thence there is good navigation 1.01 miles to a point 1,000 feet below Birch and Jones' Ferry. Here a row of rocks extends from the left bank to within 70 feet of the right bank. The water above and below is deep, and 3.8 feet and upwards in the channel to the right of the rocks. The fall is slight, and no improvement is required. Thence 2,000 feet, to the Devil's Staircase there is good navigation. For 1.61 miles the descent is rapid, with short stretches of deep water between the high points of rock. There are two old fish-dams on the shoal; irregular rock bottom; depth ranging from 1 to 13 feet; fall, 11.18 feet.

Thence there is good navigation 1,940 feet. Here two fish-dams extend the full width of the river, obstructing navigation.

Thence 4,380 feet there is a large rock in the middle of the river, about half a foot below the surface. Thence 1,200 feet, to the shoal at Fish River, the depth is sufficient.

Fish River Shoal.—Bottom very irregular, stratified rock; depth in best channel, 2.3 to 5.8 feet; length, 300 feet; fall, 0.08. For 600 feet below Fish River there is good water; thence the bottom is very irregular, the depth ranging from 2 to 5 feet; 1,700 feet below Fish River is an old fish-dam, and, on the left, rocks appear above the surface; 1,200 feet further on are the remains of more fish-dams and many projecting

points of rock. From this point to the "Seven Islands," so called, the depth in the best channel ranges from 2.1 to 7 feet: the bottom is rock and very irregular. From Fish River to the Seven Islands the distance is 2.11 miles, and the fall is 6.16 feet. In the small channels to the left the bottom is gravel, and the depth is 0.6 to 1.5 feet. In the main channel many rocks show above the surface: depth between the rocks, 1.8 to 4.8 feet. The water runs swiftly 2,630 feet; fall, 4.02 feet. Thence 3,450 feet, to Bohannan's grist-mill, the irregular bottom continues, but there are no rocks above the surface and the best channel ranges from 2 to 5 feet in depth: fall, 2.44 feet.

Bohannan's Mill.—The mill is on the right and receives its water-power from Fall Creek. At this point the river descends rapidly, and a great number of rocks show above the surface. To Bohannan's Island is 1,500 feet, and the fall is 3.25 feet.

Bohannan's Island.—Both channels are very rough, rocky, and swift. The right is the wider and probably better for improvement. At the head of the island the fall is 0.61 feet in 100 feet. From the head of the island to Oresfield's Ferry, at Rockford, is 1,600 feet, and the fall is 3.07 feet. Width at ferry, 420 feet.

Rockford.—Rockford, on the left bank of the river, is the old county-town of Surry County. The village contains 3 stores, post-office, hotel, school-house, and a few private residences. Previous to the removal of the county-seat to Dobson, this was a flourishing village: now the signs of decay are apparent on every hand, and the old court-house stands silent and deserted, a grim reminder of the busy past.

On the right, 2 miles distant, is Richmond Hill, the seat of the late Judge Pearson's law school. For 1,500 feet below Oresfield's Ferry the best water is toward the right, ranging from 2 to 3.5 feet in depth; thence is a long gravel shoal, underlaid with rock, with a channel 1.5 to 3.5 feet deep, at the end of which is a fish-dam with deep water and rock bottom. From Oresfield's Ferry to the foot of the shoal is 4,500 feet and the fall is 8.38 feet. Thence 2.01 miles to Foster's Upper Shoal, 1,500 feet below Double Creek, a channel of sufficient width and depth may be selected. The bottom generally is rock, very irregular; the depth in the best channel from 2.8 to 10 feet.

Foster's Upper Shoal.—In the upper part of this shoal an old fish-dam extends nearly across the river, and the ledge shows above the surface in many places. Depth, 1.8 to 5.6 feet; length, 4,570 feet; fall, 3.37 feet. Thence there is good navigation, 1,600 feet, to Foster's Lower Shoal. Length of shoal, 1,260 feet; fall, 0.61 foot; depth, 2.3 to 5.5 feet; rock bottom. Thence good navigation, 2,500 feet, to Lime Rock Shoal. On the right is Lime Rock, 169 feet in height. Lime was once burned here; the old kilns may still be seen.

Lime Rock Shoal.—Rock bottom; fish-dams in several places with sharp falls. The shoal extends 2.59 miles, to Merrimon's Ferry. Fall, 12.88 feet; depth, 1.7 to 6.6 feet.

Siloam.—On the left bank half a mile from the river is the village of Siloam, containing saw and grist mill, tobacco factory and store, property of R. E. and M. C. Reeves; post-office and several farm-houses. The mill on Hogan's Creek has a turbine wheel and circular saw, and facilities for sawing large timber. From Merrimon's Ferry, 2,800 feet, to Reeve's Fish-Trap Shoal, there is good navigation.

Reeve's Fish-Trap Shoal.—The dam extends from the right bank to a point 30 feet from the left bank and is built on the rock. Length of shoal, 600 feet; fall, 1.66 feet; depth, 1.8 to 4 feet. Thence to Ararat River is 1,400 feet, and the navigation is good.

Ararat River.—Ararat River rises in Patrick County, Va., and has fine bottom lands along its banks. It is 100 feet wide at its entrance into the Yadkin. Good navigation continues 3,000 feet. At this point the bottom is rock, very rough, rising nearly to the surface and then showing depth of 4 to 6 feet.

A channel 2 feet and more in depth may be selected by crossing from side to side. This kind of navigation continues 2.88 miles to the head of Bean Shoals. The fall in this distance is 5.95 feet. The distance from Wilkesborough to the head of Bean Shoals, measured on the axis of the river, is 53.6 miles, and the fall is 167.01 feet.

Bean Shoals.—The most rapid descent in these shoals is between the head of the shoals and a point 1,000 feet below the head of the large island. The fall in this distance, 5,300 feet, is 16.88 feet. The greatest fall is 1.34 feet in a distance of 100 feet; at another point the fall is 1.38 feet in a distance of 200 feet. The depth in the best channel ranges from 0.8 to 4 feet. At the island the best channel is on the right, and, with the exception of a high ridge of rock near the foot of the island, the depth is 2 to 3 feet. The fall from the last point to which the fall was given to the foot of the island, a distance of 3,370 feet, is 5.17 feet.

At Little Bean Shoals Creek, 1,800 feet above the foot of the island, an old fish-dam obstructs navigation. From the foot of the island to Sycamore Ford, which is considered the foot of Bean Shoals, the distance is 2.46 miles, and the fall is 17.12 feet.

The depth in the best channel is 1 to 4.5 feet; 4,400 feet below the island are two ridges of rock, each shoaling the water to 1 foot in depth, the fall at the first is 1.83 feet in a distance of 200 feet. These are the only sharp falls that occur in this part of the shoals. Length of shoals is 4.12 miles; fall, 39.17 feet, or an average fall of 9.51 feet per mile. The bottom is stratified rock, very ragged, rising in sharp points and ridges at right angle to the river's axis, forming at some points natural dams

nearly the full width of the river. Especially is this the case in that part of the shoals above the islands. Large rocks, projections from the ledge, show several feet above the surface in many places. The two large islands are high and cultivated. On the right, just above the islands, is Marten's grist-mill, operated by an undershot wheel; the water is supplied from the Yadkin by a short wing-dam. In 1830 to 1835 the Yadkin Navigation Company did considerable work at these shoals with a view to rendering the river navigable. A dam was built at the head of the shoals and a canal commenced along the northern side of the river. The only trace of the dam now to be seen is the abutment at the entrance to the canal. The canal was completed for a little more than a mile from the head of the shoals and was 15 to 45 feet wide at the bottom. Where the cliff forms one wall, the minimum width is 15 feet. At 2,000 feet from the head of the canal are the ruins of a guard lock 12 feet wide. The canal walls are of earth except along the foot of the cliffs. Here a very good retaining wall was built of stone quarried on the spot. The upper wall, 700 feet in length, was built of headers and stretchers neatly pinned with small stone and is in good condition. The outer face has a batter of 2¾ inches to the foot rise. The inner face was left rough and covered with gravel and earth. No cement was used in its construction. The dimensions are: height, 6 to 20 feet, top width, 2.5 feet, bottom width, about 7 feet. The lower wall, about 400 feet in length, is of the same general character, but in some places has been torn down to obtain stone for the construction of fish-dams. The canal has been filled in by the floods, and where it runs through the woods is overgrown with trees and bushes. No water flows through it.

Little Yadkin.—Just below Sycamore Ford the Little Yadkin comes in from the north. A quarter of a mile up from its mouth it is 55 feet wide and 2 feet deep.

Sycamore Ford Shoal.—Eight hundred feet below Sycamore Ford is a gravel shoal and fish-dam. Length, 500 feet; fall, 1.5 feet; depth, 2.3 to 3.2 feet. Thence, 1.9 miles to Hauser's Island Shoal, 400 feet below Hauser's Ferry there is good navigation. *Velocity Observations.*—One mile below Sycamore Ford, opposite the plantation of Mr. Poindexter, velocity observations were taken, showing the discharge of the river at this point to be 13,344 gallons per second.

Hauser's Island Shoal.—Both channels were examined. The left is better for improvement. Gravel bottom, with fish-dam; length of shoal, 760 feet; fall, 1.36 feet; depth, 2.3 to 5 feet. Thence good navigation is found for 1.52 miles. From this for a distance of 1.83 miles, to the head of Shore's Island, the water runs swiftly. There are fish-dams in two places and a number of snags which obstruct navigation. The depth ranges from 2 to 7.5 feet; rock and gravel bottom; fall, 7.73 feet.

Shore's Island.—The three channels were examined. That on the right is the widest and best for improvement; the depth, 2.6 to 3.3 feet; gravel bottom. From the head to the foot of the island the distance is 2,880 feet and the fall 0.88 feet. Thence 1.57 miles, to the rapids at Glenn's old mill-dam, the depth is 2.3 to 4.7 feet and the fall is 6.18 feet; the bottom is gravel most of the distance; rock was found in a few places.

Fifteen hundred feet above Glenn's dam a ridge of rock extends the full width of the river, rising above the surface in two places; the channel is 100 feet or more in width; depth on the rock, 2.6 to 3.1 feet.

Glenn's Mill-Dam Rapid.—The old dam extends the full width of the river and was constructed of timbers and planks, filled in with stone. It is broken through in two places and the fall, 2.95 feet, is distributed over a distance of 400 feet. The depth on the rock is 2.3 feet. The old grist-mill on the right was operated by an undershot wheel supplied with water by a wing-dam extending two-thirds the width of the river. The mill is not in operation and is falling to pieces. From the mill there is swift water for a distance of 1,600 feet, to Glenn's old fish-dams. The fall in this distance is 2 feet and the depth 2.2 to 5 feet; rock bottom.

Thence for a distance of half a mile, to Glenn's Ferry, there is good navigation. The river at this point is 350 feet in width. The mail-route from Winston to Red Plains, Richmond Hill, and Rockford crosses here. Thence good navigation 2,870 feet to

Meadow Branch Shoal.—There are fish-dams here the full width of the river. Length of shoal, 1,900 feet; fall, 2.01 feet; depth, 1.4 to 4.3 feet; rock bottom. Thence there is good navigation 1,750 feet to Conrad's Ferry. A road from Winston to Yadkinsville crosses here. Good navigation continues for 2,700 feet. At this point is a shoal with fish-dams the full width of the river; rock bottom; depth, 1.7 to 5 feet; length, 300 feet; fall, 0.70. Thence good navigation is found 2,740 feet to Briar Branch Shoal.

Briar Branch Shoal.—The bottom is of rock and uneven, but a channel may be selected 3 feet and more in depth. Length, 2,900 feet; fall, 0.86 feet. Thence there is good navigation 3,300 feet. At this point a sand bar 80 feet in length shoals the water to 2.4 feet. Thence there is good navigation 1.48 miles to Jones's mill-dam.

Jones's Mill-Dam.—Jones's lumber and grist mill, operated by a turbine wheel, is on the left bank. The dam is built of stone, logs, brush, and drift-wood, and extends the full width of the river. The fall at the dam is 2.56 feet. The right channel is shallow and swift, and near the foot of the island a ledge shows above the surface; 1,000 feet below the mill is Jones's and Conrad's Chain Ferry.

Thence there is good navigation 1,000 feet to a gravel bar 50 feet in length; depth on the bar 2.3 feet. Thence there is good navigation 4,100 feet to Shallow Ford Shoal.

Shallow Ford Shoal.—At the ford the river is 1,000 feet wide. Below the ford, on the right, is the grist mill of Bitting's & Carver's, operated by an undershot wheel; the wing-dam extends about half the width of the river. The best water is to the left of the dam. At the foot of the shoal is an old fish-dam. Length of shoal, 5,560 feet; fall, 7.89 feet; depth, 1.6 to 4.8 feet; rock and gravel bottom. The mail-routes from Winston to Huntsville and Yadkinsville crosses at Shallow Ford.

Huntsville.—On the right, three-quarters of a mile distant, is the village of Huntsville, consisting of two stores, a tobacco warehouse, blacksmith-shop, post-office, and a few dwellings.

Sheek's Shoal.—From Shallow Ford Shoal there is good navigation 3.21 miles to Sheek's Shoal. The stone from an old fish-dam is scattered on the bottom. The best channel is on the left; depth, 2.4 to 4.7 feet. Length of shoal, 500 feet; fall, 0.84 feet. On the right are the ruins of Sheek's old mill. Thence good navigation 3.16 miles to Langenhone and Nason's, formerly Douthet's mill-dam.

Langenhone's and Nason's Grist-Mill.—The mill, which is the best on the river, is on the left bank, and is operated by two turbine wheels. The dam is substantially built of hewn oak timbers, covered with plank, and filled in with stone. The bents are in the form of an isosceles triangle, with the acute angle upstream, and are about 6 feet apart. The foundation is rock. The dam extends the full length of the river. The fall at the dam is 4.57 feet. Thence there is good navigation 2,900 feet to a gravel bar, 200 feet in length. Depth on the bar is 2.6 feet. At 500 feet below this bar a ridge of rock shoals the depth to 1.6 for 150 feet.

Thence there is good navigation 4,660 feet. At this point, on the left, rock shows 3 feet above the surface. There is an old fish-dam on the ledge. The water on the right is 3 feet and more in depth. The right wing of the dam should be removed to give sufficient width to the channel. Length of shoal, 500 feet; fall, 0.43 feet. Thence there is good navigation 3,800 feet to a point 3,600 feet above Hall's Ferry.

Shoal above Hall's Ferry.—Here a ridge of rock extends the full width of the river, appearing above the surface in the middle of the stream. The depth on the rock ranges from two or three-tenths of a foot to 3.3 feet. The best channel is on the right, about 18 feet in width and 2.5 to 3.3 feet in depth. Length of shoal, 600 feet; fall, 0.23 feet. Thence there is good navigation 3,500 feet to Hall's Ferry Shoal 500 feet below Hall's Ferry. At the ferry the river is 360 feet wide. The road from Winston, via Clemmonsville to Fulton and Statesville, crosses at this point. Winston is 13¼ miles distant.

Clemmonsville is 2½ miles from the river, on the left, and is a flourishing village of 250 inhabitants, containing 2 churches, several stores, post-office, high school, and the tannery of Strupe & Son, doing a very good business.

Hall's Ferry Shoal.—In this shoal are 2 old fish-dams, extending the full width of the river. The bottom is rock, and for 200 feet the high points appear above the surface in many places. The depth between the rocks is sufficient. Length of shoal, 850 feet; fall, 141 feet. Thence good navigation is found for 3,944 feet to Clouse's Upper Shoal.

Clouse's Upper Shoal.—Has large rocks; appear several feet above the surface. The bottom is rock. The best channel is along the left bank until about half-way through the shoal, and then along the axis. Sixty years ago there was a bridge across here resting on the rocks. It was carried away by a flood. Clouse's old mill-dam is in a dilapidated condition. It extends the full width of the river, and is a low dam constructed of stone and brush. The mill, situated on the left bank, was destroyed by fire during the civil war. Length of shoal, 2,730 feet; fall, 2.51 feet; depth, 2.5 to 4.7 feet. Thence there is good navigation 2,800 feet to Clouse's Lower Shoal.

Clouse's Lower Shoal.—Here the best channel is on the left, large rocks, parts of the ledge, showing from the right bank half the width of the river. Depth, 2.2 to 5.5 feet; length, 3,600 feet; fall, 2.37 feet. Thence there is good navigation 4,300 feet, to Eckel's Shoal, 400 feet below Idol's Chain Ferry.

Eckel's Shoal and Douthet's Saw-Mill.—The small channel to the right of the island is shallow and swift, ending in rapids, below the island, so rough that it was impossible to take soundings there. Rocks project above the surface. The water at the time of the survey appeared to be 2.5 to 3 feet deep in the rapids, and the gauge was 1.7 feet above low-water. At the foot of the falls, on the left, is Douthet's saw-mill, a small affair, not in operation. A wing-dam supplies the water to an undershot wheel. The dam is built of joist and plank inclined upstream and resting against the rock. It extends about one-third the distance across the river to the ledge as it shows above the water. The rock under the dam appears to be a narrow ridge. At the end of the dam in the river it is 30 to 40 feet wide. The best location for a channel seems to be about one-third the distance across from the left bank. From the head of the shoal to the dam at the mill is 1,600 feet, and the fall to that point is 1.22 feet. Fall at the dam, 2.64 feet. Thence there is good navigation 2,200 feet. Here a rapid occurs.

Mill Branch Rapid.—A large rock shows 60 feet out from the left bank. Least depth found, 3.3 feet; length, 700 feet; fall, 0.98 feet. Thence there is good navigation for 1,200 feet. Here a narrow ridge of rocks shoals the water to 2 feet. Thence good navigation is found 1.39 miles to Bailey's Chain Ferry, the depth ranging from 3.4 to 14.4 feet. The mail route from Winston to Advance and Fulton crosses here. On the right, one-half a mile from the river, is Bailey's whisky distillery, and 2 miles distant is the village of Advance. The river at this point is 380 feet wide. Thence there is excellent navigation 1.1 miles to March's Pole Ferry. One thousand six hundred feet below this ferry, at the mouth of Muddy Creek, a sand and gravel bar 300 feet long shoals the depth to 2.3 to 2.8 feet. Thence 2,420 feet, to the head of the rapid at Grimes's mill-dam, there are no obstructions.

The mill (saw and grist) is on the left bank, and is operated by an undershot wheel, the water supplied by a wing-dam extending about three-fourths the distance across from the left bank. Between the right bank and the end of the dam the depth is 2 to 3.4 feet. The current is very swift. From the head to the foot of the rapid is 800 feet, and the fall is 0.81 feet; 700 feet below is Ellis Chain Ferry. Thence for 3,400 feet there is excellent navigation. Here a high point of rock is 1.8 feet below the surface. Thence good navigation is found for 1.53 miles to a point about 1,300 feet above Hartley's Mill. Here a ridge of rock is within 2.3 feet of the surface. Thence to Hartley's mill-dam the depth is sufficient. The mill is on the left—undershot wheel; water supplied by a low wing-dam extending nearly the full width of the river and built on rock foundation. The best location for a channel is toward the left, as the water on the right above the island is shallow. The fall at the time of the survey was distributed over about 1,000 feet, and was 1.3feet. A short distance below the mill, rock shoals the water 2.3 feet for about 300 feet. At 3,000 feet below the mill a ridge of rock shoals the water to 2.1 feet. Thence there is good navigation 2,200 feet to the head of the island below Peeble's Ferry. Here a gravel bar 300 feet long shoals the water to 1.7 feet in depth. At the foot of the island is another short bar. Least depth here, 1.9 feet. A snag shows above the water about one-third the distance across from the left bank. Thence there is good navigation to the shoal at Peeble's grist-mill, 1,600 feet. The mill is on the right bank of the river—undershot wheel; low wing-dam about one-third the distance across from the right bank; length of shoal, 700 feet; fall, 0.59 feet; depth, 1.4 to 2.6 feet; rock bottom. About 600 feet below the mill a short gravel bar is within 2.5 feet of the surface. Thence excellent navigation exists for 4,740 feet, to Fulton Ferry, at the town of Fulton, a small village containing saw and grist mill of Mr. Haynes on Haynes's Creek, country store, drug-store, post-office, and one-half a dozen houses. Good navigation continues 35 to 40 feet to a rock shoal. Length of shoal, 500 feet; depth, 2.4 to 5 feet; fall, 0.08 feet. Thence there is good navigation 1,440 feet; then swift water 900 feet along Meadow Island. The depth is sufficient. Fall in the rapid, 0.58 feet. Thence there is excellent navigation 1.41 miles to Oakes's Ferry. Below the ferry the water runs swiftly 1,400 feet.

Oakes's Ferry Rapid.—A channel of sufficient width and depth may be found along the left bank; fall, 0.73. Thence there is good water 4,370 feet to the head of the shoal opposite the Hairston property at Swicegood's grist-mill.

Swicegood's Mill.—The mill is on the left bank of the river—undershot wheel—wing-dam extending nearly to the right bank, and a fish-dam between that and the bank. Below the dam the river is full of rocks, except on the left, where the improved channel should be located.

From the head to the foot of the rapid is 1,700 feet, and the fall is 2.19 feet. Thence 1,100 feet is a gravel bar 350 feet long; depth, 2.5 to 4 feet; fall, 0.52. One thousand six hundred feet below is a shoal gravel-bar, probably underlaid with rock; depth, 2.4 feet. Thence there is good navigation 4,500 feet to Hairston's Ferry. Total fall to this point, 309 feet. Good navigation continues 3.16 miles; depth ranging from 3 to 16 feet; width, 300 to 400 feet. Fall in this distance, 3.55 feet.

Big Rock Shoal.—Here a short shoal is encountered. Rock bottom; best channel along left bank, large rock in middle of river; depth, 2.2 to 4.6 feet; length, 680 feet; fall, 0.34 feet. Thence there is good navigation 1,900 feet to Barne's Fish-Trap Shoal. The old dam and trap should be removed; length, 1,400 feet; fall, 0.42; depth, 2.2 to 4 feet; rock bottom. Thence good navigation is found for 1.36 miles to

Dutchman Island.—Here are two short gravel bars; depth, 2.6 feet. Below the island the channel is along the left bank. Thence there is good navigation 2.06 miles. Here a short rapid is encountered; length, 700 feet; fall, 0.75. There are remains of an old fish-dam, which should be removed. Best channel on the right. Thence good navigation 3.95 miles to

Motley's Shoal at Boone Ford; length of shoal, 1,300 feet; fall, 0.99 feet; depth, 1.1 to 5 feet; rock bottom. Thence the required depth is found with no sharp falls for 2.22 miles. At this point a rocky bluff on the left and high bank on the right confine the river to about 350 feet in width. The fall in 600 feet is 1.48 feet; depth, 3.2 to 4.7 feet. Thence there is good navigation 4,300 feet to Hannah's Ferry, at the junction of the Yadkin and South Yadkin.

South Yadkin River.—Here the river is 600 feet wide and 12 feet deep. Total fall to this point from Wilkesborough, 331.2 feet; distance, 117.23 miles. Just above its mouth the South Yadkin is 150 feet wide and 6 feet deep. Thence 2.64 miles to Sower's Ferry is one of the finest stretches of water on the river, ranging from 5 to 16 feet in depth. Here the river is about 800 feet wide. Thence to the Western North Carolina Railroad bridge the depth is sufficient; distance, 1.98 miles; fall, 3.68 feet. From a point 3,000 feet above the bridge the water runs swiftly to and below the bridge; fall in the 3,000 feet, 2.14 feet. Between the two northern piers of the old bridge, 1,100 feet above the railroad bridge, the water is deep; distance from Wilkesborough to the Western North Carolina Railroad bridge, measured along the axis of the river, 121.98 miles; fall, 337.28 feet. The river at the Western North Carolina Railroad bridge is 500 feet wide, and the level notes show the bridge to be 24.6 feet in the clear above low water. From the bridge to the ferry below the depth is 4 to 16 feet.

A condensed statement of the facts obtained by the survey party is given in the following table:

Locality	Distance from Wilkesboro	Least depth	Length of shoal	Fall.	Greatest [illegible] observed.	Total fall.	Remarks.
	Miles.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet*	
Hendrix's Ford shoal	0.4	1.70	200	0.14	1.16	1.16	Gravel bowlders and submerged logs.
Eagles's Ford shoal	0.7	0.6	140	1.72	0.7 to 120	3.85	Gravel bowlders and drift wood.
Smith's Island shoal	1.5	0.6	1,700	3.14		7.26	Gravel bottom; fish dam; overhanging tree; left channel.
High Point	1.61	0.6				6.55	Rock.
Rock, Rock, and Rock screw shoals	1.8	1.4	4,200	3.61	1.45 to 355	12.35	Rock and gravel bottom.
Sand bar	2.0	2.0	150			12.49	Temporary bar.
Do	2.0	2.0					Do.
Bar at Mulberry Creek	4.0	4.0	700			14.17	Sand and gravel bottom.
Hunt's Island shoal	4.6	4.6	2,650	2.75	1.25 to 180	17.30	Gravel bottom; gravelly; ridge of rock; swift place.
Reynolds's Island shoal	5.1	5.1	1,800	2.16	1.16 to 240	21.74	Gravel shoal; fish dam and snag.
Sand bar	6.3	6.3	150				
Stratton's Ford shoal	11.5	11.5	500	1.70	0.33 to 10	25.64	Rock bottom covered with gravel.
Gravel bars	13.4	13.4	3,600	3.15	0.43 to 300	28.79	Gravel bottom.
Parkers Ferry	14.6	14.6	400	0.81		29.32	Rock bottom.
Parkers Ford shoal	14.8	14.8	150	0.40		30.28	Do.
Gravel bar	15.4	15.4	100				
Fish trap shoal	15.6	15.6	1,850	1.36	0.7 to 700	32.60	Rock and gravel bottom; fish dam.
Gravel bar	16.0	16.0	75				
Do	16.3	16.3	50			34.23	
Roaring River	18.50	18.50					
Reeves Island and fish dam	19.8	19.8	2,700	3.86	0.71 to 86	38.09	Right channel; old fish-dam; rock and gravel bottom.
Rocky shoal and fish dam	20.0	20.0	1,600	0.89		39.74	Rock bottom; fish dam.
Greenwood's Island	22.4	22.4	1,500	1.18		42.32	Bowlders and gravel shoal; the depth 2 feet for 150 feet near the foot.
Gravel bar	22.8	22.8	70				
Adams Island	23.0	23.0	1,400	1.40		45.50	Gravel bottom; right channel.
Hicks's and Island No. 1	24.4	24.4	1,200	0.86		46.91	Right channel.
Harrell's Island and fish dam	25.4	25.4	600	1.86		48.13	Left channel; gravel bottom.
Hickerson's Island No. 2	26.0	26.0	1,100	1.56	0.62 to 300	50.07	Fish dam and gravel shoal.
Dickens's Island shoal	26.8	26.8	800	0.90		50.58	Right channel; gravel shoal.
Old fish dam	28.1	28.1					Stone should be removed.
Sawyer's ford	28.3	28.3	150			66.98	Gravel bar.
Swan Creek shoal	31.2	31.2	2,400	2.40	0.90 to 1,000	68.55	Fish-dam; rock bottom.
Little Elkin shoal	33.6	33.6	600	0.45	1.00 to 1.50	70.10	Fish-dams; bottom gravel on rock.
Wilkesboro ford	33.9	33.9	350	0.16		71.42	Gravel bar.
Elkin Bridge shoal	34.2	34.2	500	1.70		73.63	Fish-dam; gravel bottom.
Town Creek shoal	35.7	35.7	1,000	0.81		75.36	Gravel bottom.
Grewsewood Creek shoal	36.3	36.3	150	1.29	1.23 to 420	81.85	Fish-dam; rock bottom.
Montgomery shoal	36.6	36.6	250	0.16		82.64	Rock bottom, ledge in middle of river.
Tumbling Rock	37.2	37.2	300	1.41		84.74	Rock bottom.
Tumbling shoal	39.6	39.6	1,750	1.85	1.34 to 740	87.16	Rock bottom; fish-dam.
Old fish-dam	39.35	39.35				88.60	Remove a few detached boulders.

Hurt's Ledge	30.57	1.3	360	0.89		90.28	Rock bottom.
Mitchel's Island shoal	31.32	1.1	2,740	4.00	0.87 in 280	94.61	Bottom gravel and bowlders; fish-dams.
Woodruff's fish-trap shoal	32.94	2.0	1,800	4.55		101.14	Fish-dam; sharp fall; rock bottom.
Devil's Staircase and Long shoal	35.09	1.0	1.61 miles.	11.18	3.57 in 1,170	112.21	Rock bottom; two old fish-dams.
Two old fish-dams	36.35					112.27	
Large rock below the surface	37.1						Channel on either side.
Fish River shoal	37.42	2.3	300	0.08		113.0	Bottom, stratified rock.
Fish-dam	37.72					113.96	Rock bottom.
Do	37.99					114.49	Do.
Seven Islands shoal	40.4	1.8	2,630	4.02		123.18	Rocks above surface.
Bohannan's mill	40.71	2.0	3,450	2.44		125.62	Irregular rock bottom; grist-mill on Fall Creek.
Bohannan's Island	41.00	1.6	1,500	3.25		128.87	Rocks above the surface.
Overfield's Ferry at Rockford	41.30	0.6	1,600	3.07	0.01 in 100	131.94	Right channel; rock above surface.
Shoal below Rockford	42.10	1.5	4,500	8.38	2.31 in 440	140.32	Rock bottom; fish-dams.
Foster's upper shoal	45.04	1.8	4,570	3.37		146.37	Ragged rock bottom; fish-dams.
Foster's lower shoal	45.58	2.3	1,200	0.61		147.31	Rock bottom.
Lime Rock shoal	48.68	1.7	2.59 miles.	10.62	1.64 in 300	158.06	Rock bottom; fish-dams in several places.
Reeve's fish-trap shoal	49.32	1.8	600	1.66		160.32	Rock bottom; fish-dam.
Head of Bear shoal	53.06					167.01	
End of proposed canal	54.55		7,900	21.0			Three locks, 7 feet lift.
Foot of Bean shoal	57.18		13,870	18.17		206.18	Rock bottom, very irregular; total fall Bean shoal, 39.17.
Sycamore Ford shoal	57.42	2.3	500	1.5		208.08	Gravel bottom; fish-dams.
Hauser's Island shoal	59.50	2.3	700	1.36		213.80	Left channel; gravel bottom; fish-dam.
Shoal above Shore's Island	62.73	2.0	1.83 miles	7.73	1.02 in 600	224.77	Rock and gravel bottom; fish-dams.
Shore's Island	63.24	2.6	2,800	0.88		225.65	Right channel; gravel bottom.
Glenn's mill-dam rapid	64.89	2.3	400	2.95		234.78	Dam broken through; mill not in operation; rock bottom.
Glenn's fish-trap shoal	65.20	2.2	1,600	2.0		236.78	Old fish-dams; rock bottom.
Meadow Branch shoal	66.63	1.4	1,000	2.01		240.32	Fish-dams; rock bottom.
Fish-dam shoal	67.52	1.7	300	0.70		241.32	Do.
Briar Branch shoal	68.81	3.0	2,900	0.86		242.63	Rock bottom; no improvement required.
Sand-bar	69.24	2.4	80				
Jones's mill-dam	70.72			[a]2.56		246.08	Mill on left bank; undershot wheel; dam built of stone and logs, brush, &c., full width of river.
Gravel-bar		2.3	50				
Shallow Ford shoal	72.99	1.6	5,560	7.89		255.97	Rock and gravel bottom; Bittings & Carver's grist-mill on the right bank; undershot wheel; wing-dam half the width of the river.
Sheek's shoal	76.29	2.4	500	0.84		260.39	Fish-dam; gravel bottom.
Langenhour & Neuson's dam	79.45			[a]4.57		267.10	Grist-mill on the left bank; two turbine wheels; substantial wood and stone dam, full width of the river; rock foundation.
Gravel-bar	80.03	2.6	200				
Ridge of rock	80.15	1.6	150				
Shoal and fish-dam	81.17	3.0	500	0.43		269.47	Rocks above surface on the left, channel on the right; remove right wing of old fish-dam.
Shoal above Hall's Ferry	82.01	1.9	600	0.23		269.73	Rock bottom; channel on right 18 feet wide and 2.5 to 3.3 feet deep.
Hall's Ferry shoal	82.97	2.4	850	1.41		271.70	Rocky shoal; fish-dams and high points to remove.
Clouse's upper shoal	84.15	2.5	2,730	2.51		274.74	Rocky shoal; Clouse's old mill-dam.
Clouse's lower shoal	85.38	2.2	3,600	2.37	0.35 in 400	277.68	Rock bottom.
Eckels's shoal and Douthet's saw-mill	86.50		1,600	3.86	2.64, vertical	282.16	Rock bottom; wing-dam; mill on left; undershot wheel.
Mill Branch rapid	87.08	3.4	700	0.98		283.94	No improvement required.
Ridge of rock	87.52	2.0				284.40	

[a] Vertical.

Locality.	Distance from Wilkesborough.	Least depth.	Length of shoal.	Fall.	Greatest fall observed.	Total fall.	Remarks.
	Miles.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	
Bailey's Ferry	88.94					286.97	
Sand and gravel bar	90.35	2.3	300				Deposit from Muddy Creek.
Grimes's mill-dam rapid	91.03	2.0	800	0.81		289.15	Grist and saw mill; wing-dam; channel between dam and right bank may be improved.
A high point	91.82	1.8					Rock bottom.
Ridge of rock	93.36	2.3	75				
Hartley's mill shoal	93.70	1.5	1,000	1.30		294.03	Grist-mill; wing-dam; rock bottom.
Ridge of rock	94.20	2.1	200				
Gravel-bar below Peebles's Ferry	94.64	1.7	300				
Gravel-bar	95.02	1.9	50			296.58	Snag on the bar.
Peebles's mill shoal	95.48	1.1	700	0.59		298.01	Grist-mill; wing-dam; rock bottom.
Rocky shoal	97.28	2.4	500	0.08		300.47	
Rapid at Meadow Island	97.73	2.9	900	0.58		301.30	
Oakes's Ferry rapid	99.42	2.9	1,400	0.73		303.83	Gravel bottom.
Swicegood's mill shoal	100.59		1,700	2.19		306.61	Grist-mill; mill and fish dams full width of river.
Gravel-bar	100.88	2.5	350	0.52		307.65	
Do	101.25	2.4				308.28	Short bar, probably underlaid with rock.
Hairston's Ferry	102.10					309.00	
Big Rock shoal	105.42	2.2	680	0.34		312.89	Rock bottom; large rock in middle of river.
Barnes's fish-trap shoal	106.15	2.2	1,900	0.42		315.55	Old fish-dam; rock bottom.
Dutchman Island bars	107.50	2.6	50			317.77	Gravel bottom.
Rapid	109.87	3.0	700	0.75		322.52	Old fish-dam to remove.
Motley's shoal at Boone Ford	114.08	1.1	1,300	0.99		325.47	Rock bottom.
Rapid	116.41	3.2	600	1.48		331.05	Do.
Hannah's Ferry and South Yadkin	117.23					331.29	River 600 feet wide.
Sower's Ferry	120.00					333.55	
W. N. C. Railroad bridge	121.98					337.28	24.6 feet in the clear above low water.

IMPROVEMENT.

It will be seen from an inspection of the above table that the river may be divided into three sections, according to the descent per mile, which must determine the character of the improvement.

I. From Wilkesborough to the head of Bean Shoal the distance is 53 miles, and the descent is at the average rate of 3.15 feet per mile.

II. Bean Shoal, which may be subdivided into two divisions, the upper having a descent of 14.04 feet per mile, the lower 6.91 feet per mile; the total length of the shoal being 4 miles and $\frac{13}{10.6}$ to Sycamore Ford.

III. From Sycamore Ford to the railroad bridge, near Salisbury, where the survey terminated, the distance is 64.56 miles, and the rate of fall 2.02 feet per mile.

Assuming that a grade of 1.3 feet per 1,000 feet may be taken as the limit of ordinary steamboat navigation, it is evident from the above description and the profile that the river can be improved to a navigable depth of 2½ to 3 feet at low water from Wilkesborough as far as Bean Shoal, by excavating the bars and constructing wing-dams and four locks and dams. At the head of Bean Shoal it will be necessary to abandon the river and make a canal about 3 miles in length, with three locks, having an aggregate lift of 21 feet. The remaining distance of 1 mile to Sycamore Ford can be overcome by excavation and the construction of perhaps one wing-dam.

From Sycamore Ford to the railroad bridge the average fall of 2.02 feet per mile is within the assumed limit, but the actual descent at special localities is so great that excavation will need to be supplemented by the construction of wing-dams. The excavation, locks and dams, and wing-dams which are necessary for light-draft steam navigation between Wilkesborough and Salisbury are included in the following estimate, given in a tabular form. The canal around Bean Shoal will have a width of 40 feet at the bottom and 60 feet at the water surface and a depth of 5 feet. The dam will be of stone and the lock of crib-work, with a chamber 100 by 20 feet.

Summary of estimate for improvement of the Yadkin River for steam navigation.

SECTION I.—WILKESBOROUGH TO HEAD OF BEAN SHOAL.

Locality.	Dredging.	Rock excavation.	Dams.	Amounts.	Total.
	Cub. yds.	*Cub. yds.*			
Blair's Island, Sta. 77 + 66			Masonry dam, 10 feet high, 1,000 cubic yards.	$8,000	
			Lock, with 7 feet lift	15,000	
					$23,000 00
Sta. 84 + 64 to Sta. 266 + 24	1,319	2,032	2 wing-dams	1,319	
				6,096	
			791 cubic yards	2,373	
					9,788 00
Reynolds' Island and Saylor's Ford, Sta. 291 + 22 to 365 + 64.	1,347			1,347	
		167		501	
			4 wing-dams, 1,055 cu. yds	3,165	
					5,013 00
Above Sta. 377 + 20	33				33 00
Sta. 389 + 34	222				222 00
Sta. 404 + 83	194				194 00
Parkes Ford and Ledge		46		138	
Sta. 433 + 37			2 wing-dams, 800 cu. yds	2,400	
					2,538 00

Summary of estimate—Section I—Continued.

Locality.	Dredging.	Rock excavation.	Items.	Amounts.	Total.
	Cub. yds.	*Cub. yds.*			
Fish-Trap Shoal		30		30	
Sta. 464 + 9		93		270	
					300 00
Sta. 475 + 41	111				111 00
4,000 feet above Bowling River	65				65 00
Foot & Bowe's Fish-Trap Shoal, Sta. 568 + 47.		10		30	
			3 wing-dams and 3 dikes, 1,200 cubic yards	3,600	
					3,630 00
Sta. 599 + 63		10			30 00
Sta. 635 + 10	16				16 00
Below Sta. 643 + 64	3				30 00
Adams Island	46			46	
Sta. 684 + 28			2 wing-dams, 806 cu. yds	2,418	
					2,464 00
Harrill's Island		10		30	
Sta. 761 + 31			5 wing-dams 1,206 cu. yds	3,618	
					3,648 00
Hickerson's Island No. 2, Sta. 824 + 73	239				239 00
Gwynn's Island, Sta. 908 + 70	185				185 00
Sta. 978 + 17		6		18	
		37		111	
					129 00
Sayle's Ford, Sta. 1,050 + 45	74				74 00
Swan Creek Shoal			Masonry dam, 8 feet high, 687 cubic yards.	5,436	
Sta. 1,068 + 82			Lock, with 4.2 feet lift	9,500	
					14,936 00
Little Elkin Shoal		185		555	
Sta. 1,132 + 10			9 wing-dams, 2,007 cu. yds	6,021	
					6,576 00
Wilcox's Ford, Sta. 1,147	148				148 00
Above Sta. 1,191 + 10	19				19 00
		19		57	57 00
Sta. 1225, Elkin Bridge Shoal, Sta. 1249 + 23	370			370	
		10		30	
			1 wing-dam 660 cu. yds	1,980	
					2,380 00
Town Creek Shoal, Sta. 1310 + 97	185				185 00
Greenwood's Creek Shoal, Sta. 1359 + 2.		70		210	
			4 wing-dams, 1,258 cubic yards	3,768	
					3,978 00
Tumbling Falls and Shoal, Sta. 1439 + 40.		74		222	
			11 wing-dams, 4,270 cubic yards.	12,810	
					13,059 00
Sta. 1509 + 88		10			30 00
Hurt's Ledge Sta. 1570 + 30		136			408 00
Mitchell's Island	851			851	
		31		93	
Sta. 1607 + 50			5 wing-dams, 1,039 cubic yards.	3,090	
					4,034 00
Woodruff's Fish-Trap Shoal, Sta. 1695 + 42.		191		573	
			6 wing-dams, 2,442 cubic yards.	7,326	
					7,899 00
Devil's Staircase			2 wing-dams 450 cubic yards.	1,350	
Sta. 1763 + 88		92		276	
					1,626 00
Long Shoal, Sta. 1822 + 91		1,679		5,037	
			4 wing-dams 972 cubic yards	2,916	
					7,953 00
Sta. 1885 + 63		10			30 00
Fish Dam Shoal, Sta. 1920 + 60		28			84 00
Sta. 1959 + 50		95			285 00
		10		30	
Sta. 1992 + 72		278		834	
					864 00
Seven Islands, Sta. 2041 + 50		2,232			6,696 00
Johnston's Island, Sta. 2207 + 28		3,037			9,111 00
Sta. 2120 + 17		70			210 00

* Removing dams.

Summary of estimate—Section I—Continued.

Locality	Dredging.	Rock excavation.	Locks and dams.	Amounts.	Total.
	Cub. yds.	*Cub. yds.*			
			Masonry dam 11 feet high, 1,748 cubic yards.	$13,084	
Sta. 2156 + 77			Lock with 7.2 feet lift	15,000	
					$28,984 00
Foster's Upper Shoal, Sta. 2278 + 4		93			279 00
Foster's Lower Shoal, Sta. 2340 + 70		56			168 00
Sta. 2372 + 60		174			522 00
Lime-Rock Shoal			Masonry dam 10 feet high, 1,360 cubic yards.	12,744	
Sta. 2463 + 31			Lock with 7 feet lift	15,000	
Below Sta. 2478 + 7		139		417	
Sta. 2505 + 49		46		138	
					28,299 00
Reeve's Fish Trap		556		1,668	
Shoal, Sta. 2540 + 50		10		30	
					1,698 00
Sta. 2586 + 19		111			333 00
Below Sta. 2617 + 31		44			132 00
Below Sta. 2772 + 14		222			666 00
Removing overhanging trees					570 00
					31,682 00
Contingencies 15 per cent					29,113 95
Total					223,396 95

SECTION II.—BEAN SHOAL.

Canal extending from the head of the shoals 8,070 feet to a point 800 feet above the foot of Island No. 9.

Earth excavation in canal, 144,600 cubic yards, at 15 cents	$21,690 00
Rock excavation in canal, 4,259 cubic yards, at $3	12,777 00
3 locks, lift of each 7 feet, at $15,000	45,000 00
Guard lock at head	10,000 00
Rock excavation, Island No. 9 to Sycamore Ford, 10,692 cubic yards, at $3.	32,076 00
	121,543 00
Contingencies 15 per cent	18,231 45
Total	139,774 45

SECTION III.—SYCAMORE FORD TO THE WESTERN NORTH CAROLINA RAILROAD BRIDGE, NEAR SALISBURY.

Locality.	Dredging.	Rock excavation.	Locks and dams.	Amounts	Total.
	Cub. yds.	*Cub. yds.*			
Sycamore Ford Shoal, Sta. 2998 + 3	333			$333	
		*10		30	
					$363 00
Hauser's Island, Sta. 3107 + 15	278			278	
		*10		30	
					308 00
Shoal above Shore's Island, Sta. 3199 + 82.	619			619	
		*20		60	
		148		444	
					1,123 00
Shore's Island			Dam at head 259 cub. yds	777	
Sta. 3297 + 60			Dam at foot 223 cub. yds	669	
					1,446 00
3,000 feet above Glenn's Dam	741				741 00
Glenn's Dam, Sta. 3407 + 6		*20		60	
		1,377		4,131	
			6 dams, 4,638 cubic yards.	13,914	
					18,105 00

*Removing dams.

Summary of estimate—Section III—Continued.

Locality.	Dredging.	Rock excavation.	Dams.	Amounts.	Total.
	Cub. yds.	*Cub. yds.*			
Meadow Branch Shoal, Sta. 3484 + 18.		*10		$20	
		194		562	
					$612 00
Sta. 3544 + 46		*10		30	
		65		195	
					225 00
Below Sta. 3627 + 9	63				63 00
1,400 feet above Jones's Dam		207			621 00
Jones's Dam, Sta. 3723 + 00	332			332	
		*40		120	
					452 00
2,000 feet below Jones's Dam	30				30 00
Shallow Ford Shoal, Sta. 3810 + 1	2,467			2,467	
		583		1,749	
			3 dams, 1,980 cubic yards	5,940	
					10,156 00
Sheek's Shoal, Sta. 4004 + 19	281				281 00
Langenhour and Neason's Dam, Sta. 4176 + 44.		602		1,806	
		*50		150	
			3 dams, 1,980 cubic yards	5,940	
					7,896 00
2,000 feet below Langenhour and Neason's Dam.	74			74	
		74		222	
					296 00
Sta. 4261 + 27		*10			30 00
Sta. 4303 + 47		17			51 00
Hall's Ferry Shoal, Sta. 4349 + 8		250			750 00
Clouse's Upper Shoal, Sta. 4398 + 30		277			831 00
Clouse's Lower Shoal, Sta. 4452 + 46		326			978 00
Eckel's Shoal, Sta. 4551 + 6		1,712			5,136 00
Sta. 4603 + 33		56			168 00
Muddy Creek, Sta. 4762 + 3	107			107	
			Jetty, 330 cubic yards	990	
					1,157 00
Grimes's Mill, Sta. 4785 + 71		174			522 00
Sta. 4836 + 22		56			168 00
1,400 feet above Hartley's Mill		306			918 00
Hartley's Mill, Sta. 4928 + 85		*10		30	
		741		2,223	
					2,253 00
2,000 feet above Peeble's Ferry		166			498 00
Peeble's Ferry, below Sta. 4966 + 6	800				800 00
1,100 feet above Peeble's Mill	92				92 00
Peeble's Mill, Sta. 5021 + 1		412			1,236 00
Sta. 5110 + 30		11			33 00
Swicegood's Mill, Sta. 5279 + 16		788		2,364	
			2 dams, 1,760 cubic yards	5,280	
					7,644 00
1,400 feet below Swicegood's Mill		22			66 00
Big Rock Shoal, Sta. 5532 + 64		1,111			3,333 00
Barnes's Fish-Trap Shoal, Sta. 5569 + 76.		*10		30	
		278		834	
					864 00
Dutchman's Island, Sta. 5613 + 64		4			12 00
Motley's Shoal, Sta. 5971 + 5		16			138 00
Sta. 6118 + 31	23				23 00
Removing snags and overhanging trees					660 00
					71,019 00
Contingencies and superintendence 15 per cent					10,652 85
Total					81,671 85

* Removing dams.

The aggregate cost of the three sections from Wilkesborough to the railroad bridge will be as follows:

Section I, from Wilkesborough to head of Bean Shoal	**$223,206 95**
Section II, Bean Shoal	**139,774 45**
Section III, foot of Bean Shoal to railroad bridge	**81,671 85**
Total	**444,653 25**

BATEAU NAVIGATION.

The improvement of the river for steam navigation above the foot of Bean Shoal will not only entail the expenditure of $362,981.40, but will also make government liable for the annual future cost of repair and superintendence. I have, therefore, thought proper to submit another estimate for improving the natural channel of the river in order to make it suitable for steam navigation. This can be done by means of riprap dams and the excavation of rock and gravel bars.

Bean Shoal will be reduced to a grade of 1.3 feet in 1,000 feet, from Sycamore Ford to a point 7,360 feet below the head of the shoal. For the remaining distance the grade will be 2.6 feet per 1,000, which can be overcome by towing with a cable or poling and combining the crews of the bateaux.

Summary of estimates for improvement of the Yadkin River for bateau navigation.

SECTION I.—FROM WILKESBOROUGH TO HEAD OF BEAN SHOAL.

Locality.	Dredging.	Rock excavation.	Dams.	Amounts.	Total.
	Cub. yds.	*Cub. yds.*			
Gordon's Ford Shoal, Sta. 24 + 20	167	.....	.....	$187	
			1 dam, 142 cubic yards....	426	
					$613 00
Finley's Ford Shoal, Sta. 30 + 91	237	.....	.....	237	
			1 dam, 159 cubic yards.....	477	
					714 00
Blair's Island Shoal, Sta. 60 + 72	165	.....	.....	165	
			1 dam across right channel, 122 cubic yards....	366	
Above Sta. 77 + 56	93	.....	.....	93	
		*7	.....	21	
			1 dam, 130 cubic yards....	390	
					1,035 00
Sta. 84 + 60	.....	187	.....	.....	561 00
High Rock Shoal, Sta. 105 + 2	.....	*7	.....	.....	21 00
Buckeye Shoal, Sta. 130 + 30	.....	139	.....	.....	417 00
Bar at Mulberry Creek, Sta. 200 + 87.	90	.....	Jetty, 133 cubic yards...	399	
			.....	90	
					489 00
Hunt's Island Shoal, Sta. 212 + 80 to Sta. 216 + 3.	53	.....	.....	53	
		78	.....	234	
					287 00
Reynolds's Island Shoal, Sta. 294 + 90 to Sta. 300 + 30.	230	.....	.....	230	
		*7	.....	21	
					251 00
Staylor's Ford, Sta. 355 + 29.....	.....	.....	1 dam, 167 cubic yards....	501	
		126	.....	378	
					879 00
600 feet above Sta. 377 + 20	22	.....	.....	.....	22 00
Sta. 389 + 94	93	.....	.....	.....	93 00
Sta. 404 + 83	294	.....	.....	.....	294 00
Parke's Ford, Sta. 432 + 87	.....	30	.....	.....	90 00
Fish-Trap Shoal, Sta. 461 + 9 and Sta. 475 + 11.	.....	*7	.....	21	
		129	.....	387	
					408 00
Foote and Reeves's Fish-Dam, Sta. 558 + 75.	.....	3	.....	9	
		*7	.....	21	
Sta. 565 + 20	.....	17	.....	51	
					81 00
Sta. 589 + 62	.....	*7	.....	.....	21 00
Greenwood's Island, Sta. 635 + 10	.....	33	.....	.....	99 00
Harrill's Island, Sta. 778 + 51	.....	*7	.....	.....	21 00
Hickerson's Island No. 2, Sta. 824 + 75	.....	*7	.....	21	
Below Sta. 834 + 74.....	130	.....	.....	130	
					151 00
Below Sta. 964 + 60.....	.....	*7	.....	.....	21 00
Sayle's Ford, Sta. 1036 + 45	50	.....	.....	.....	50 00
Swap Creek Shoal, Sta. 1058	.....	73	.....	219	
		*5	.....	15	
					234 00

*Removing dams.

Summary of estimates for improvement of the Yadkin River, &c.—Continued.

SECTION I.—FROM WILKESBOROUGH TO HEAD OF BEAN SHOAL.

Locality.	Dredging.	Rock excavation.	Dams.	Amount.	Total.
	Cub. yds.	*Cub. yds.*			
Little Elkin Shoal, Sta. 1127 + 25	.....	10	.....	30	
	.....	76	.....	228	
					258 00
Wilcox's Ford, Sta. 1144 + 60	44	.....	.....	.....	44 00
Sta. 1227 + 70	.....	15	.....	.....	15 00
Elkin Bridge Shoal, Sta. 1249 + 23	.....	7	.....	21	
	554	.....	.....	554	
					575 00
Greenwood's Creek Shoal, Sta. 1361 + 80.	.....	8	.....	24	
	.....	36	.....	108	
					132 00
Tumbling Falls, Sta. 1404 + 70	.....	78	.....	.....	234 00
Tumbling Shoal, below Sta. 1432 + 42.	.....	14	.....	.....	42 00
Sta. 1509 + 58	.....	3	.....	.....	9 00
Hart's Ledge, Sta. 1570 + 50	.....	53	.....	.....	159 00
Mitchell's Island Shoal, Sta. 1600 + 28 to Sta. 1611 + 10.	1,191	.....	.....	1,191	
	.....	6	.....	18	
					1,209 00
Woodruff's Fish-Trap Shoal Sta. 1695 + 42.	.....	684	.....	2,052	
	.....	4	.....	12	
					2,064 00
Devil's Staircase, Sta. 1763 + 88	.....	4	.....	12	
	.....	9	.....	27	
					39 00
Long Shoal, Sta. 1806 + 70	.....	1,628	.....	4,884	
	.....	4	.....	12	
Sta. 1829 + 40	.....	47	.....	141	
					5,037 00
Below Sta. 1862 + 52	.....	5	.....	.....	15 00
Below 1941 + 30	.....	4	.....	12	
	.....	44	.....	132	
					144 00
Below Fish River, Sta. 1955 + 52	.....	4	.....	12	
	.....	87	.....	261	
					273 00
Seven Islands, Sta. 2016 + 30	.....	177	.....	.....	531 00
Bohannan's Mill and Island, Sta. 2107 + 28.	.....	1,425	.....	.....	1,275 00
Rockford, Sta. 2140 + 61	.....	741	.....	2,223	
Sta. 2150 + 77	376	.....	.....	376	
					2,599 00
Foster's Upper Shoal, Sta. 2278 + 4.	.....	4	.....	12	
	.....	5	.....	15	
					27 00
Lime Rock Shoal, above Sta. 2340 + 91.		160	.....	480	
Sta. 2417 + 99	.....	4	.....	12	
					492 00
Sta. 2463 + 31	.....	1,911	.....	5,733	
Below Sta. 2478 + 7	.....	237	.....	711	
Above Sta. 2505 + 49	.....	7	.....	21	
					6,465 00
Reeves's Fish-Dam, Sta. 2540 + 3	.....	6	.....	.....	18 00
Sta. 2632 + 77	.....	4	.....	.....	12 00
Removing snags and overhanging trees, 53 miles, at $20					1,060 00
					32,609 00
Contingencies, 20 per cent					6,521 80
Total					39,130 80

* Removing dams.

SECTION II.—BEAN SHOALS.

Locality.	Dredging.	Rock excavation.	Dams.	Amounts.	Total.
	Cub. yds.	*Cub. yds.*			
Bean Shoals, above Island No. 9			Wall 2,111 cubic yards	$6,333	
Sta. 2752+73 to Sta. 2813+56		2,856		8,568	
Sta. 2854+52		176		528	
Sta. 2898+76		746		2,238	
Below Sta. 2931+8		22		66	
Above Sycamore Ford below Sta. 2971+28		6		18	
		*220		844	
			Cable anchorage, 15 cubic yards.	45	
			5,800 feet of ¾ inch diameter cable, iron center, at 20.9 cents.	1,212	
					$19,896 00
Removing snags and overhanging trees for four miles, at $20					80 00
					19,976 00
Contingencies 2½ per cent					3,995 20
Total					23,971 20

* Removing dams.

SECTION III.—SYCAMORE FORD TO WESTERN NORTH CAROLINA RAILROAD BRIDGE.

Locality	Dredging.	Rock excavation.	Dams	Amounts.
	Cub. yds.	*Cub. yds.*		
Sta. 3072+61		10		$30 00
Sta. 3107+15	6	6		24 00
Sta. 3190+62		10	Dam, 300 feet long	1,252 00
Below Sta. 3212+8	322	6		328 00
500 feet above Sta. 3264+94		20		60 00
Sta. 3297+60			Dam, 259 cubic yards	777 00
Below Sta. 3326+52	230			230 00
Glenn's Dam, Sta. 3407+61		53	Two dams, 1,033 cubic yards	3,268 00
Glenn's Fish-Trap Shoal, Sta. 3422+2		*6		18 00
Meadow Branch Shoal, Sta. 3484+48		41		
		*6	Dam, 463 cubic yards	1,539 00
Sta. 3544+46		*10		30 00
1,000 feet below Sta. 3627+9	60			60 00
2,500 feet below Sta. 3627+9	231			231 00
Jones's Mill-Dam, Sta. 3723+66	116	*50	Dam, 356 cubic yards	1,874 00
Above Sta. 3787+17	74			74 00
Shallow Ford Shoal, Sta. 3787+17 to Sta. 3835+13.	168		Dam, 1,980 cubic yards	6,168 00
Laugenhour and Neason's Dam, Sta. 4176+44		*200	Two dams, 1,556 cubic yards	5,268 00
2,100 feet below Sta. 4176+44		33		99 00
Sta. 4346+61, below Hall's Ferry		6		
		*6		36 00
Sta. 4406+4, Clouse's old dam		*6		18 00
Doering's Dam, Eckel's Shoal, Sta. 4571+6.		1,712		5,136 00
Sta. 4662+33		17		51 00
Muddy Creek, 1,500 feet below Sta. 4738			Jetty, 330 cubic yards	990 00
Sta. 4836+22		4		12 00
Hartley's Mill Dam		*6		
Sta. 4928+88		54		270 00
2,000 feet below Sta. 4928+88	70			70 00
Peeble's Ferry, 1,700 feet above Sta. 4995+98	129			129 00
Sta. 4995+98	19			19 00
Peeble's Mill, Sta. 5015+44	380			380 00
Swicegood's Mill-Dam, Sta. 5270+36, 200 feet above Sta. 5325+94.		*22	Two dams, 972 cubic yards	2,982 00
Big Rock Shoal	44			44 00
Sta. 5532+94		159		477 00
Barnes's Fish Trap Shoal, Sta. 5569+76		*6		18 00
Sta. 5746+8		*6		18 00
Sta. 5906+17		81		243 00
Removing snags and overhanging trees				600 00
				22,743 00
Contingencies 30 per cent				6,548 60
Total				29,291 60

* Removing dams.

The aggregate estimate of the cost of bateau navigation will be as follows:

Section I.	Wilkesborough to head of Bean Shoal	$39,130 80
Section II.	Bean Shoal	23,971 20
Section III.	Foot of Bean Shoal to railroad bridge	39,291 60
	Total	102,393 60

I have submitted two estimates for two distinct plans of improvement. That by means of locks and dams will cost $444,653.25, and will be suited for light-draft steamers. That by means of wing-dams and excavation will afford a bateau navigation for bateaux of 6 to 7 tons, and will cost $102,633.60.

The river, however, can be made navigable for steamboats as far as Bean Shoal without employing locks and dams, and will cost $81,671.85.

But this part of the river is obstructed by mill-dams which must be removed, at a cost which can only be determined by consulting with the owners or by submitting the question to the judgment of the arbitrators.

The following list gives the localities and character of the dams and mills:

MEMORANDA OF MILLS AND DAMS ON THE YADKIN RIVER BETWEEN SYCAMORE FORD AND THE WESTERN NORTH CAROLINA RAILROAD BRIDGE.

Glenn's Grist-Mill, 7.6 miles below Sycamore Ford. The mill is in ruins. The dam, which was built of timber and formerly extended the full width of the river, is broken down.

Jones's Grist and Saw Mill, 13.5 miles below Sycamore Ford. The mill is a very good one, chiefly for grinding; a little sawing is done. The dam is composed of stone, logs, and brush, and extends the full width of the river. The proposed improvement will destroy the dam.

Bitting and Carver's Grist-Mill, 15.5 miles below Sycamore Ford. Very fair mill with wing-dam built of stone. The proposed improvement will not affect the dam.

Laugenhour and Neason's Grist-Mill, 22.3 miles below Sycamore Ford. This is an excellent mill, the best on the river. The dam, constructed of timber filled in with stone, extends the full width of the river. The proposed improvement will destroy the dam.

Clouse's Mill-Dam, 26.1 miles below Sycamore Ford. The mill was destroyed by fire several years ago. The low wing-dam, built of stone, extends nearly across the river. The proposed improvement will destroy the dam.

Douthit's Saw-Mill, 29.3 miles below Sycamore Ford. The mill is a small, unimportant affair, and was not in operation at the time of the survey. The dam, constructed of timber, extends about one-third the width of the river. The water-power is considered valuable. The proposed improvement will destroy the dam.

Grimes's Saw and Grist Mill, 33.8 miles below Sycamore Ford. A very good mill. Low wing-dam of stone, extending three-fourths the width of the river. The proposed improvement will not affect the dam.

Hartley's Grist-Mill, 36.4 miles below Sycamore Ford. Ordinary country mill. Low wing-dam, built of stone, extending nearly across the river. The proposed improvement will destroy the dam.

Peebles's Grist-Mill, 38.3 miles below Sycamore Ford. An inferior mill doing little work. Low wing-dam built of stone. The proposed improvement will not affect the dam.

Swicegood's Grist-Mill, 43 miles below Sycamore Ford. Ordinary country mill. Low wing-dam built of stone, extending the full width of the river. The proposed improvement will destroy the dam.

GENERAL CONCLUSIONS.

1. Cost of improving the Yadkin River for 3-foot navigation from Wilkesborough to the railroad bridge near Salisbury:

(A) By means of locks and dams and a short section of canal around Bean Shoals for steam navigation, the cost will be $444,653.25.

(B) By means of wing-dams and rock excavation for bateaux, ranging from 6 to 7 tons capacity, the cost will be $102,633.60.

2. I would recommend that the river from Salisbury to the foot of Bean Shoal be improved for light-draft steamers, since this improvement can be made with a navigation of 2½ to 3 feet at low-water without the aid of locks and dams. Until this part of the river is improved, it would not be advisable to begin the improvement at or above Bean Shoal.

3. Before the improvement is begun, the claims of owners of mill property for the destruction of the mills and dams should be ascertained. The total amount of these claims, if settled now, would be small, but if left until the completion of the improvement would increase with the needs and expectations of the proprietors.

The following maps accompany this report:

General map of Yadkin River from Wilkesborough to Western North Carolina Railroad bridge. Scale, 1 inch = 6,000 feet.

Profile of Yadkin River from Wilkesborough to Western North Carolina Railroad bridge.

Special map and profile of Bean Shoal. Scale, 1 inch = 500 feet.

I am greatly indebted to Mr. S. W. Evans, assistant engineer in charge, and to Mr. Burr and Mr. Fisher, assistants, and to the other members of the party, for the skillful conduct of the operations of the survey.

Very respectfully, your obedient servant,

S. T. ABERT,
United States Civil Engineer.

The CHIEF OF ENGINEERS, U. S. A.

LAWS AND RESOLUTIONS

OF THE

State of North Carolina,

PASSED BY THE

GENERAL ASSEMBLY

AT ITS

SESSION OF 1885,

BEGUN AND HELD IN THE CITY OF RALEIGH

ON WEDNESDAY, THE SEVENTH DAY OF JANUARY, A. D. 1885,

TO WHICH ARE PREFIXED

A REGISTER OF STATE OFFICERS, MEMBERS OF THE GENERAL ASSEMBLY, JUDICIARY, A LIST OF COMMISSIONERS OF AFFIDAVITS, AND STATE CONSTITUTION.

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PUBLISHED BY AUTHORITY.

RALEIGH:
P. M. HALE, STATE PRINTER AND BINDER.
1885.

EXHIBIT
III b
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190.	An act to amend section six hundred and seventy-seven of The Code,	361
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210.	An act supplemental to an act passed at the present session entitled "An act to prevent stock from running at large, and to repeal all laws requiring fences within Lincoln county,"	—
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212.	An act to declare the Great Pee Dee and Yadkin rivers public highways, and for other purposes,	389
213.	An act to drain the lowlands of Lick Fork creek, in Rockingham and Caswell counties,	389
214.	An act for the relief of certain soldiers of the late war between the States,	391
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216.	An act to amend the charter of the Atlantic and Western Railway Company,	398
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218.	An act to incorporate the Roanoke and Tar River Railroad Company,	407
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223.	An act to authorize the commissioners of Hertford county to levy a special tax for the purpose of building a jail,	426

CHAPTER 211.

An act to establish a new township in Yancey county.

The General Assembly of North Carolina do enact:

SECTION 1. That a new township to be known as "Price's Creek" township, is hereby created and established in the county of Yancey, and bounded as follows: beginning on the Madison county line, on top of the knob in said line, runs east with the meanders of the McElroy mountain, which divide the waters of Bald creek and Price's creek, to the Summer's gap; thence south to the Cove Knob above W. Hensley's store house; thence east with Cane ridge to the fork of the wagon road at B. B. Whittington's house; thence with the Burnsville road to the ford of Cane river at John Gibbs'; thence up said Cane river and with the old Cane River township line back to the beginning. Price's Creek township established in Yancey county. Boundaries.

SEC. 2. That said township shall have all the rights, powers and privileges now granted to townships by law. Powers, &c.

SEC. 3. That the permanent place of voting in said township shall be established by the board of county commissioners of said county. Commissioners to establish voting place.

SEC. 4. This act shall be in force from and after its ratification.

Read in the General Assembly read three times, and ratified this the 4th day of March, A. D. 1885.

CHAPTER 212.

An act to declare the Great Pee Dee and Yadkin rivers public highways, and for other purposes.

The General Assembly of North Carolina do enact:

SECTION 1. That the Yadkin river from the northern boundary line of the county of Davidson to its junction Yadkin and Great Pee Dee rivers declared public highways.

with the Great Pee Dee river, and the Great Pee Dee from said junction to the boundary line of the State of South Carolina, be and the same are hereby declared public highways for the free passage of boats, flats, rafts and other means of transportation.

Removal of dams and other obstructions.

SEC. 2. That any person desiring the removal of any dam or other obstruction in said river may file his or her petition before the board of county commissioners of the county in which said obstructions or any part thereof is situated to have said obstruction removed in whole or in part.

Commissioners to order removal on petition.

SEC. 3. That upon the filing of said petition the said board of county commissioners shall, if in their discretion they deem it necessary, order the said obstruction to be removed in whole or in part, and the method of procedure shall be the same as prescribed for the laying out of highways in chapter fifty of The Code.

Method of procedure.

Damages paid by petitioners.

SEC. 4. That all damages assessed by any jury appointed by this act shall be paid by the petitioners.

Unlawful to erect dam after June 1st, 1885, without sluice-way.

SEC. 5. That after the first day of June, one thousand eight hundred and eighty-five, it shall be unlawful for any person to erect any dam or other obstruction in either of said rivers within the limits prescribed, unless the person erecting said obstructions shall leave in the middle of said Yadkin river a sluice-way forty-five feet in width, and in the middle of the Great Pee Dee river a sluice-way sixty feet in width, for the passage of boats, flats, rafts and other means of transportation, and fish, and any person who shall so erect and maintain such dam or other obstruction shall be guilty of a misdemeanor and be fined twenty-five dollars for each day said obstruction shall remain in either of said rivers, after having been notified by any person damaged by said obstruction to remove the same.

Misdemeanor.

Penalty.

Dam, when condemned, to be removed within thirty days.

SEC. 6. That whenever any jury appointed under this act shall condemn any dam or other obstruction or part thereof in either of said rivers, the owner of said dam or

other obstruction shall remove the part condemned within thirty days after the verdict of said jury is filed: *Provided,* the amount of damages assessed by said jury is paid or tendered to him; and if said owner shall fail to remove the said obstruction within the time prescribed, then any person damaged by the erection or maintenance of said obstruction may remove the part condemned, and the cost of the removal thereof shall be deducted from the amount awarded to such owner as damages. Proviso.

SEC. 7. That in estimating the damages caused to any owner by removal of his dam in whole or in part, the jury may also include the annual cost of making any fence-way and maintaining the same. Damages, how estimated.

SEC. 8. This act shall be in force from its ratification.

In the General Assembly read three times, and ratified this the 4th day of March, A. D. 1885.

CHAPTER 213.

An act to drain the lowlands of Lick Fork creek, in Rockingham and Caswell counties.

The General Assembly of North Carolina do enact:

SECTION 1. That R. D. Harris, J. L. Wright, P. B. Johnson and Felix Hubbard be appointed commissioners, whose duty it shall be, on or before the first day of July, one thousand eight hundred and eighty-five, to lay off Lick Fork of Hogan's creek in Rockingham and Caswell counties from Watts' old mill dam on said creek to its junction with said Hogan's creek, into sections of convenient length, and to appoint one overseer to each section, who shall hold his office for the term of two years and shall be a land owner in the section to which he is appointed overseer. Commissioners. To lay off Lick Fork of Hogan's creek in sections. Overseer.

execution of the said bond by Samuel A. Culpe and wife Christine. Earl L. Woodson and J. C. Culpe the other parties thereto in this day proven before me by the oath and examination of the said Marvel Ritchie who is one of the subscribing witnesses to said bond. Therefore let the said bond with the certificates be registered.

R. H. Milton, Clerk.
Superior Court.

Office Register of Deeds, Stanly County.
I hereby certify that the foregoing bond was filed in this office for registration Sept. 21st 1895 at 10 o'clock A.M. and duly registered. W. H. Henderson, Reg. of D. S.

State of N.C. to W. Smithdeal. (Grant)

No. 13743. — State of North Carolina.

Know Ye, That we, for and in consideration of the sum of fifteen (15) cents, for every acre hereby granted, and paid into the Treasury on 20th day of September, 1895; by W. Smithdeal, have given and granted, and by these presents do give and grant unto the said W. Smithdeal a tract of land containing twenty five (25) acres, lying and being in the County of Stanly, being fully described as the bed of the Yadkin River, bounded as follows: Beginning at a stake on the West bank of the Yadkin River at the waters edge in Albemarle Township, near the foot of the narrows, and the corner between the lands of J. W. Sullivan and Russell and runs, thence with the river bank, the waters edge and Russell's line the following courses and distances, S. 25° W. 5.68 chains to a stake; S. 7½° E. 3.60 chains; S. 2° E. 4.75 chains S 7° W 2.00 chains; S. 27° W. 4.50 chains S. 14° W. 20.00 chains; S. 33° W. 6.75 chains; S. 18° W. 6.60 chains; S. 28° W. 2.50 chains; S. 8° W. 3.15 chains; S. 14½° W. 3.35 chains; S. 2½° E. 8.35 chains; to a stake at the mouth of Cedar Branch, near the corner to Freeman and Beal and Boger's Bispurman old Mill tract, thence with the river bank, the waters edge and Beal and Boger's line S. 4° E. 4.86 chains S. 18° E. 5.60 chains, S. 36° E. 4.85 chains; S. 75° E. 4.70 chains; S. 66½° E. 7.00 chains; S. 88° E. 5.15 chains to an ash just above the old Mill S. 47½° E. 2.75 chains; S. 62° E. 4.00 chains; S. 60° E. 2.00 chains to a stake on the river bank at the waters edge on the line of the Kirks Falls tract and the beginning corner of Beal and Boger's Bispurman old Mill tract, thence with Kirks line as it meanders the river N. 58° E. 3.50 chains to the center of the Yadkin river

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and the dividing line between Stanly and Montgomery Counties; thence up the middle of the river in a Northwardly direction with the said dividing line between Stanly and Montgomery Counties and the meanderings of the mid-river about 100.00 chains to J. H. Littleton corner in the middle of the river near the foot of the Narrows; thence with J. H. Littleton's line, West to the beginning corner on the bank of the river, as by the plat hereunto annexed doth appear. together with all Woods, Waters, Mines, Minerals, Hereditaments and appurtenances to the said land belonging or appertaining; To Hold to the said H. Smith Heirs and assigns forever. Yielding and paying to us such sums of money, yearly or otherwise, as our General Assembly from time to time may direct, and promising, obedience to all acts of the General Assembly now existing or hereafter to be enacted, concerning the passage of fish in the waters of said premises. Entered 26th October, 1894.

In Witness Whereof, We have caused these Letters to be made Patent, and our great seal to be hereunto affixed.

Witness, Elias Carr, Esq., our Governor and Commander-in-Chief, at Raleigh, the 20th day of September in the one hundred and twentieth year of our independence, and in the year of our Lord one thousand eight hundred and ninety five.

Elias Carr,
Governor.

By Command
C. M. Cooke,
Secretary of State.

State of North Carolina, } Superior Court.
Stanly County. } October 2nd, 1895.

The signatures of Elias Carr, Governor of North Carolina and C. M. Cooke Secretary of the State of North Carolina under the great seal of the State of North Carolina are adjudged to be their genuine signatures and the issuing of the aforesaid grant by them is adjudged to be correct and according to law. Therefore let the said grant with this certificate be registered. S. H. Walton, C. S. C.

Office Register of Deeds, Stanly County, N. C.
I hereby certify that the foregoing grant was filed in this office for registration Oct. 5th, 1895, at 10 o'clock A. M., and duly registered. W. T. Huckabee, R. D.

State of North Carolina to H. Smithdeal. (Grant.)
State of North Carolina. (No. 12743)

Know Ye, That we, for and in consideration of the sum of fifteen ($15) cents, for every acre hereby granted, and paid into the Treasury on 20th day of September, 1895, by H. Smithdeal have given and granted, and by these presents do give and grant unto the said H. Smithdeal a tract of land containing twenty five (25) acres, lying and being in the County of Stanly, fully described as the E.S. of Yadkin River, and bounded as follows: Beginning at a stake, formerly a mild laurel, E. to Harris's and E.H. Brooks' corner on the bank of the Yadkin river at the water edge, in Harris Township and runs thence with the river bank, the water edge and E.H. Brooks line S. 70° E. 2.70 chains; S. 60° E. 5.00 chains S 56° E. 7.25 chains S. 51° E. 5.50 chains S. 48° E. 2.70 chains S. 56½° E. 2.50 chains, S. 40° E. 18.35 chains to a stake corner to E.H. Brooks and Arnold Parker on the bank of the river at the water edge; thence with A. Parkers line reversed as it crosses the river N. 17½ E. 7.00 to the center of the Yadkin river, the dividing or County line between Stanly and Montgomery Counties; thence up the middle of the river in a North westerly direction with the said dividing line between Stanly and Montgomery Counties, and the meanderings of the said river about 56.00 chains to the corner of D.C. Harris's grant in the river, thence with the line of said Harris's grant S. 20° W. 11.00 chains to the beginning. Corner as by the plat hereunto annexed doth appear, together with all Woods, Waters, Mines, Minerals, Hereditaments and appurtenances to the said land belonging or appertaining: To Hold to the said H. Smithdeal his heirs and assigns forever. Yielding and paying to us such sums of money, yearly or otherwise, as our General Assembly from time to time may direct, and promising obedience to all acts of the General Assembly now existing or hereafter to be enacted, concerning the passage of fish in the waters of said premises. Entered 26th October 1896.

In Witness Whereof, We have caused these Letters to be made Patent, and our great seal to be hereunto affixed.

Witness, Elias Carr, Esq., our Governor and Commander-in-Chief, at Raleigh, the 20th day of September in the one hundred and twentieth year of our Independence, and in the year of our Lord one thousand eight hundred and ninety five.

Seal

Elias Carr.
Governor.

By Command:
C.M. Cooke, Secretary of State.

State of North Carolina, } Superior Court,
Stanly County, } Octo. 3rd, 1895.

The execution of the foregoing grant by Elias Carr, Governor of the State of North Carolina and A. M. Cooke Secretary of the State of North Carolina under the great seal of the State of North Carolina is adjudged to be in due forme and according to law. Therefore let the said grant with this certificate be registered.

B. W. Hilton, C. S. C.

Office Register of Deeds, Stanly County N.C.

I hereby certify that the foregoing Grant was filed in this Office for registration October 3rd, 1895; at 10 o'clock A. M. and duly registered.

W. J. Henderson, R. D.

State of North Carolina to H. Smithdeal. (Grant.)

No. 12744. State of North Carolina.

Know Ye, That we, for and in consideration of the sum of fifteen (15) cents, for every acre hereby granted, and paid into the Treasury on 30th day of September 1895; by H. Smithdeal have given and granted, and by these presents do give and grant unto the said H. Smithdeal a tract of land containing one hundred and eighty nine (189) acres, lying and being in the County of Stanly, being fully described as the bed of Yadkin River and bounded as follows: Beginning at a stake on the West bank of the Yadkin River at the waters edge, in Harris Township, corner of Arnold Parker's Mill tract and the Kirk et als heirs lands and runs, thence with the river bank the waters edge and the lines of the Kirk et als heirs lands the following courses and distances, S. 77° E. 2.75 chains, S. 87° E. 1.87 chains S. 81° E. 2.00 chains, S. 75° E. 1.62 chains, S. 83° E. 1.25 chains, S. 64° E. 4.37 chains, S. 46° E. 5.00 chains, N. 62½° E. 2.50 chains to a black gum, S. 62° E. 2.00 chains, S. 48° E. 1.12 chains, S. 18° E. 1.25 chains, S. 33° E. 3.75 chains, S. 47° E. 5.10 chains, S. 51° E. 2.85 chains, S. 65° E. 4.00 chains, S. 45° E. 3.50 chains, S. 65° E. 5.00 chains, S. 44° E. 1.00 chain, S. 55° E. 1.25 chains, S. 47° E. 3.00 chains, S. 51° E. 2.00 chains, S. 47° E. 7.75 chains, S. 38° E. 7.38 chains, S. 31° E. 2.05 chains, S. 20° E. 4.00 chains, S. 11° E. 12.00 chains crossing the race of the Nash Mill at its head S. 15° W. 2.70 chains, S. 25° W. 12.75 chains to a ferry landing at Kirk and Nash's mills, S. 18° W. 2.80 chains, crossing the tail race of the Mill to a willow,

thence S. 13° W. 4.00 chains crossing Swamp branch to Nash and Nash Mill Cos. and J. P. Nash's corner, a stone with X cut on it, thence with the river bank, the waters edge and J. P. Nash's line, S. 1° W. 18.33 chains, S. 13° W. 3.00 chains to a dist. S. 15° E. 4.75 chains, S. 1° E. 3.30 chains, S. 15° W. 1.80 chains, S. 32½° W. 3.25 chains, S. 2° W. 1.75 chains, S. 21° W. 5.50 chains, S. 13° W. 3.20 chains, S. 15° E. 2.05 chains S. 59° E. 1.70 chains, S. 31° E. 1.60 chains, S. 21° E. 3.50 chains, S. 33½° E. 1.65 chains, S. 45° E. 2.65 chains, S. 51½° E. 2.25 chains, S. 66½° E. 1.50 chains, S. 76½° E. 4.50 chains, S. 66° E. 2.25 chains, S. 53° E. 4.00 chains, S. 66° E. 2.00 chains, N. 87° E. 2.10 chains, N. 73° E. 4.00 chains, N. 82° E. 3.10 chains, N. 64° E. 0.75 chains, S. 58° E. 2.75 chains, S. 30° E. 3.00 chains to a birch on the bank of the river at the waters edge, corner to J. S. Shute and John L. Palmer, thence with the river bank, the waters edge and John L. Palmer's line, (and to include the island belonging to Wm. P. Palmer Jr. and John L. Palmer) S. 45° E. 10.50 chains crossing Palmer's dividing line, thence S. 40° E. 7.00 chains, S. 10° E. 3.00 chains, S. 27° W. 5.00 chains, S. 33° W. 4.50 chains, S. 48° W. 3.50 chains, S. 45° W. 13.00 chains to J. L. Palmer's upper line of his Locke Place; thence S. 20° E. 21.00 chains to the mouth of a small creek at the head of the Narrows, S. 28° E. 7.00 chains to John L. Palmer and J. W. Littleton's dec'd., corner on their line on the bank of the river at the waters edge; thence with J. W. Littleton's line about N. 45° E. about 8.50 chains, to his corner to his upper tract, near the head of the Narrows in the center of the Yadkin River and the dividing line between Stanly and Montgomery Counties; thence up the middle of the river in a Northwardly direction, with the said dividing line between Stanly and Montgomery Counties, and the meanderings of the said river, about 270.00 chains, to Arnold Parker's corner in the center of the river, which is just below the mouth of Deuck Creek; thence with Parker's line S. about 6.00 chains to the beginning corner on the bank of the river, as by the plat hereto annexed doth appear, together with all woods, waters, mines, minerals, hereditaments and appurtenances to the said land belonging or appertaining: To Hold to the said W. Smithdeal heirs and assigns forever. Yielding and paying to us such sums of money, yearly or otherwise, as the General Assembly from time to time may direct, and promising obedience to all acts of the General Assembly now existing or hereafter to be enacted, concerning the passage of fish in the waters of said premises. Entered 26th October, 1874.

In Witness Whereof, We have caused these Letters to be made patent, and our great

seal to be hereunto affixed.



Witness, Elias Carr, Esq., our Governor and Commander-in-Chief, at Raleigh, the 20th day of September in the one hundred and 20th day of September in the year of our Independence, and in the year of our Lord one thousand eight hundred and ninety-five.

Elias Carr,
Governor.

By Command:
C. M. Cooke
Secretary of State.

State of North Carolina, } Superior Court,
Stanly County. } Octo. 3rd, 1895.

The execution of the foregoing grant, by Elias Carr, Governor of North Carolina and C. M. Cooke Secretary of the State of North Carolina under the great seal of the State of North Carolina, is adjudged to be in due forme and according to law. Therefore let the said grant with this certificate be registed.

J. H. Milton, C. S. C.

Office Register of Deeds, Stanly County, N. C.
I hereby certify that the foregoing Grant was filed in this office for registration October 3rd, 1895 at 10 o'clock A. M. and duly registered.

W. F. Henkabee, R. D.

State of North Carolina to W. Smithdeal. (Grant)
No. 12748 — State of North Carolina.

Know Ye, That we, for and in consideration of the sum of fifteen (15) cents, for every acre hereby granted, and paid into the Treasury on 20th day of September, 1895, by W. Smithdeal have given and granted, and by these presents do give and grant unto the said W. Smithdeal a tract of land containing one hundred and twenty three (123) acres, lying and being in the County of Stanly being described in full as the bed of the Yadkin River and bounded as follows: Beginning at a stake on the river bank at the waters edge, on the line of A. and E. Kron, in Albemarle Township, where their lines cross the river below Big Falls, and at their Lake Fishery, and runs thence with the river bank, the waters edge and the lines of the said Kron's and others, according to the following courses and distances, the lines

Beginning about 15.00 chains below the Kirk and Kron Cr. Ar on the bank of the river below the Falls, S. 67° E. 8.00 chains, S. 61° E. 7.00 chains, S. 15° E. 25 chains to Batian Landing, S. 48° E. 4.25 chains, S. 8° E. 5.00 chains, S 30° E. 3.00 chains, S. 36° E. 5.00 chains, S. 47° E. 4.50 chains, S. 66° E. 4.50 chains, S. 72° E. 8.25 chains, N. 87° E. 8.00 chains, N. 60° E. 1.50 chains, S. 58° E. 5.00 chains, S. 87° E. 5.00 chains, S. 44° E. 3.50 chains, S. 44° E. 4.00 chains, to Barringers Ferry; thence S. 37° E. 10.75 chains, S. 28° E. 4.75 chains, S. 28° E. 6.00 chains, S. 73° E. 2.50 chains, S. 18° E. 10.50 chains, S. 21° E. 5.00 chains, S. 23° E. 5.00 chains, S. 16° E. 2.10 chains, to Sanders Ferry opposite the mouth of the Uwharrie river, which runs into the Yadkin river and former the Pee Dee river, thence continuing down the Pee Dee river bank, at the water edge and the line of Sanders and others S. 11° E. 5.50 chains, S. 18° E. 10.00 chains, S. 22° E. 3.50 chains, S. 38° E. 2.50 chains, S. 44° E. 5.00 chains, S. 40° E. 5.00 chains, S. 48° E. 4.50 chains S. 50° E. 4.25 chains, S. 66° E. 4.50 chains. S. 66° E. 2.00 chains, S. 70° E. 1.75 chains, S. 43° E. 5.00 chains, S 2° E. 5.00 chains, S. 27° E. 5.00 chains, S. 8° E. 2.00 chains, S. 6° W. 4.00 chains, S. 18° W. 3.50 chains, S. 23° W. 3.00 chains, S 33° W. 4.00 chains, 340° W. 1.00 chain, to Mrs. M.A. Smiths Ferry a stone on the river bank at the waters edge, thence across the river with the Ferry line rope, S. 0.25 W. E. about 7.12 chains to the center of the river and the dividing line between Stanly and Montgomery Counties, thence up the middle of the river in a Northwardly direction with said dividing line between Stanly and Montgomery Counties and the meanderings of the said river, about 80.00 chains to the line of Sanders Ferry opposite the mouth of the Uwharrie river, thence continuing up the Yadkin river with the dividing or County line between Stanly and Montgomery Counties and the center of the river, about 66.00 chains to the line of Barringer's Ferry, where it crosses the river, and also the corner in the center of the river of said Barringers river tract, thence with the said County line, the center of the river and the line of the said Barringers river tract, about 60.00 chains to his corner on the Kron's line, where they cross the river just below their Lake Fishery, thence with the Kron line in a Southwardly direction, about 4.50 chains to the beginning corner on the bank of the river, as by the plat hereunto annexed doth appear, together with all woods, waters, mines, minerals, Hereditaments and appurtenances to the said land belonging or appertaining:

To Hold to the said M. Smithdeal heirs and assigns forever. Yielding and paying to us such sums of money, yearly or

otherwise, as our General Assembly from time to time may direct, and promising obedience to all acts of the General Assembly now existing or hereafter to be enacted, concerning the passage of fish in the waters of said premises. Entered 26th October 1894.

In Witness Whereof, We have caused these Letters to be made Patent, and our great seal to be hereunto affixed.

Witness Elias Carr, Esq., our Governor and Commander-in-Chief, at Raleigh, the 20th day of September in the one hundred and twentieth year of our Independence, and in the year of our Lord one thousand eight hundred and ninety-five.

Elias Carr,
Governor.

(Seal)

By Command:
C. M. Cooke,
Secretary of State.

State of North Carolina, Stanly County. } Superior Court, October 2nd, 1895:

The execution of the foregoing grant by Elias Carr, Governor of North Carolina and by C. M. Cooke Secretary of the State of North Carolina, under the great seal of the State of North Carolina, is adjudged to be in due form and according to law. Therefore let the said grant with this certificate be registered. J. H. Millar, C.S.C.

Office Register of Deeds, Stanly County, N.C.

I hereby certify that the foregoing Grant was filed in this office for registration October 2nd, 1895; at 10 o'clock A. M. and duly registered.

H. F. Hornthaler,
Register of Deeds.

State of North Carolina to W. Smithdeal. (Grant)

No. 12,746. State of North Carolina.

Know Ye, That we, for and in consideration of the sum of fifteen (15$) cents, for every acre hereby granted, and paid into the Treasury on 25th day of September, 1890, by W. Smithdeal have given and granted, and by these presents do give and grant unto the said W. Smithdeal a tract of land containing one hundred and fifty five (155) acres, lying and being in the County of Stanly, being fully described as the bed of the Yadkin River, bounded as follows: Beginning at a stake by an oak, on the bank of the Yadkin River, on the Rowan and Stanly County line where the two County lines strike the river, at the water's edge, and runs, thence with the waters edge along the line of President D. H. Reeves, S. 84½° E. 1.75 chains to a small setterwood, thence S. 18½° E. 3.00 chains to a stake, thence S. 9° W. .80 chains to a stake, and thence following down the bank of the river at the waters edge, the following courses, S. 17½° E. 3.15 chains, S. 10° E. 2.06 chains, S. 13° E. 1.80 chains, S. 7° E. 2.50 chains, S. 18° E. 1.20 chains, S. 6° E. 3.68 chains, S. 4° W. 1.50 chains, S. 12° E. 1.80 chains, S. 5° E. 2.00 chains, S. 18° E. 1.68 chains to a willow at the mouth of Stokes Spring Branch, S. 13° E. 1.50 chains, S. 17° E. 6.50 chains, S. 3° E. 2.50 chains to an ironwood, S. 17° E. 1.50 chains, S. 15° E. 2.00 chains, to a persimmon, S. 17½ E. 1.10 chains, S. 29° E. 0.88 chains to a sycamore, S. 17½ E. 3.80 chains to a willow, Stokes and McAllister corner, S. 5° E. 3.30 chains, S. 3½ W. 1.50 chains, to an ironwood, S. 19° E. 78 chains to a stake, S. 24° E. 1.50 chains to a W.O. S. 7° E. 3.75 chains, S. 3° E. 3.25 chains to V. Mauney's corner at the mouth of Goose Island creek, S. 3° E. 1.80 chains to a willow, S. 25° W. 2.90 chains to a birch, S. 15° W. 1.50 chains to a birch, S. 3° E. 1.50 chains to the mouth of the Litah, S. 18° E. 2.75 chains, S. 27° E. 1.20 chains to a birch, S. 58° E. 1.80 chains, S. 36° E. 1.00 chains, S. 11° E. 1.25 chains, S. 14° E. 2.0° chains, S. 5° E. 2.70 chains passing V. Mauney's upper mill to a stake, S. 11° W. 1.25 chains to a willow, S. 6° W. 3.62 chains to a willow, S. 8° E. 1.65 chains to a willow, S. 10° E. 1.50 chains to a birch, S. 17° E. 6.00 chains passing V. Mauney's lower corner of upper mill tract at 1.00 chains to the mouth of a branch, S. 24° E. 2.85 chains to an ash stump, S. 41½° E. 1.50 chains to a persimmon, S. 58° E. 4.00 chains to a stone crossing Mauney's race at the head, S. 38° E. 5.00 chains to a sycamore at Mauney's Lower Mill, S. 28° E. 6.00 chains crossing tail race at mouth, S. 17° E. 3.00 chains to a stake, S. 37° E. 1.25 chains to the Ferry Landing, S. 54½ E. 1.65 chains to a willow, N. 86° E. 1.25 chains to a stone, S. 54° E. 2.50 chains, to a birch, S. 48° E. 3.12 chains to a large stone, S. 44½° E. 3.50 chains to a large

stone, S. 51½° E. 1.00 chains, S. 55½° E. 2.00 chains, S. 73° E. 2.00 chains to a stone crossing the head of Station race, S. 38° E. 2.00 chains, S. 44½ E. 1.25 chains, S. 2° E. 1.75 chains to a stake, S. 16½° E. 1.88 chains to Mauny's and Station's corner, S. 52° E. 1.56 chains to a willow, S. 48° E. 1.00 chains to birch, S. 60° E. 1.00 chain to a birch, S. 52½° E. 2.00 chains to a willow, S. 75½ E. 0.88 chains, N. 88° E. 2.75 chains to a stone, S. 48° E. 1.25 chains to a stone, S. 24° E. 2.13 chains to a willow, S. 73° E. 1.15 chains to stone, S. 66° E. 4.20 chains to a birch, S. 60° E. 1.00 chains to a birch, S. 61° E. 1.50 chains to a willow, S. 47° E. 50 chains, S. 63° E. 0.75 chains, S. 47° E. 0.88 chains to a willow, S. 55½° E. 1.00 chain to a stone, S. 42° E. 1.13 chains, S. 63° E. 0.75 chains, S. 58° E. 0.60 chains, S. 35° E. 1.00 chains, S. 76½° E. 1.55 chains, to a stone, S. 41½° E. 2.00 chains to a birch, S. 55½° E. 2.00 chains to a black gum, S. 74° E. 2.50 chains to a stone, S. 45° E. 1.50 chains to a maple, S. 15° E. 1.14 chains to a birch, S. 49° E. 1.00 chains to an elm, S. 66° E. 1.00 chains to an ash, N. 88° E. 0.75 chains to a stone, S. 78° E. 0.76 chains, S. 41½° E. 3.50 chains to a maple, S. 53° E. 1.00 chains to a birch, S. 20° E. 0.75 chains to a stone S. 16° E. 1.00 chains to a willow, S. 2. 75 chains to a stake, S. 6½° W. 0.75 chains, S. 13½° W. 1.38 chains, to a willow, S. 1° W. 1.88 chains to a willow, S. 3° W. 0.90 chains, S. 5½° E. 2.10 chains to a black gum, S. 13½° E. 1.30 chains to a black gum, S. 19° E. 2.25 chains, S. 24° E. 2.05 chains to New Lanlan Estates Company's Range Station, S. 18° E. 1.65 chains to the North bank of Reed Hall Creek, S. 43° E. 2.55 chains, S. 51½° E. 1.25 chains, S. 56° E. 1.50 chains, S. 60° E. 3.50 chains, S. 84° E. 0.75 chains, S. 89° E. 0.75 chains, N. 86° E. 1.38 chains, S. 68° E. 2.25 chains, S. 86° E. 1.50 chains, N. 86½° E. 0.25 chains, S. 70° E. 4.12 chains, S. 77° E. 0.88 chains, S. 76° E. 2.40 chains, N. 88½° E. 0.80 chains, N. 64½° E. 1.10 chains, N. 85½° E. 2.00 chains, S. 66½° E. 6.00 chains, S. 70½° E. 1.75 chains, S. 64½° E. 2.25 chains, S. 68½° E. 1.25 chains, S. 79° E. 2.50 chains, S. 68° E. 1.50 chains, S. 58° E. 2.75 chains to mouth of a small branch, S. 60° E. 1.38 chains, S. 54½° E. 1.10 chains, S. 62° E. 2.38 chains, S. 72½° E. 1.38 chains, S. 87° E. 1.00 chains, S. 60° E. 1.00 chain, S. 77° E. 0.70 chains, N. 87° E. 0.63 chains, to a stake on the bank of the river, at the water edge, on R. C. Carmen's line and corner of an old grant now owned by John S. Pennington, then with the line of said grant reversed about N. 50° W. up the river 60.00 chains to a stake corner in the river, thence N. 10° E. with the line of said grant to the center of the river and the dividing line between Stanly and Montgomery Counties, thence up the middle of the river in a Northwardly direction with the said dividing line between Stanly and Montgomery Coun-

this and the meanderings of the said river to the intersection of said dividing line between Rowan and Stanly Counties, thence with the said Rowan and Stanly County line, West about 3185 chains to the beginning, as by the plat thereto annexed doth appear, together with all Woods, Waters, Mines, Minerals, Hereditaments and appurtenances to the said land belonging or appertaining: To Hold to the said H. Smithdeal his heirs and assigns forever. Yielding and paying to us and our heirs of money, yearly or otherwise, as our General Assembly from time to time may direct, and promising obedience to all acts of the General Assembly now existing or hereafter to be enacted, concerning the passage of fish in the waters of said premises. Entered 26th October, 1894.

In Witness Whereof, We have caused these Letters to be made patent, and our great seal to be hereunto affixed.

Witness, Elias Carr, Esq., our Governor and Commander-in-Chief, at Raleigh, the 20th day of September in the one hundred and 20th year of our Independence, and in the year of our Lord one thousand eight hundred and ninety-five.

(Seal)

Elias Carr,
Governor.

By Command,
D. M. Cooke,
Secretary of State.

State of North Carolina, } Superior Court,
Stanly County. } Oct. 3rd, 1895:

The execution of the foregoing grant by Elias Carr, Governor of North Carolina and by D. M. Cooke Secretary of State of North Carolina, under the great seal of the State of North Carolina is adjudged to be in due form and according to law. Whereupon let the said grant with this certificate be registered.

S. H. Mitlan, C. S. C.

Office Register of Deeds, Stanly County, N. C.

I hereby certify that the foregoing grant was filed in this office for registration October 3rd, 1895 at 10 o'clock A. M. and duly registered.

W. F. Henkaben,
Register of Deeds.

W. Smithdeal to Powell Evans et Thos. E. Kluttz

This Indenture, made this the first day of January, in the year of our Lord one thousand eight Hundred and ninety six, between W. Smithdeal and his wife Carrie A Smithdeal of the County of Rowan, and State of North Carolina, of the first part, and Powell Evans of Philadelphia Pa, and Thos. E. Kluttz of the County of Rowan, and State of North Carolina, of the second part.

Witnesseth, That the said parties of the first part, for and in consideration of the sum of Five Dollars, to the said parties of the first part in hand paid, the receipt whereof is hereby acknowledged, have bargained, sold and conveyed, and by these presents do bargain, sell and convey unto the said parties of the second part their heirs and assigns, the following described real estate situate, lying and being in the State of North Carolina, bounded as follows, to-wit: All and singular the lands described and granted in and by the following described seven grants from the State of North Carolina to W. Smithdeal, for seven several tracts of land, in the bed of the Yadkin River, including certain islands, lying in the Counties of Rowan, Davidson and Stanly in said State, said grants being more particularly described and referred to as follows:

(1) Grant No. 12740 Lib 187 Page 167, Records of Secretary of State, Raleigh, N.C. for 600 acres, registered in Book 21 page 131 &c. office Register of Deeds Rowan County, and Book 48 page 135 &c Register of Deeds' office Davidson Co.

(2) Grant No. 12741 L. 187 page 161 Records of Secretary of State, Raleigh, N.C. for 400 acres, Registered in Book 21 page 137 &c land records of Rowan, and Book 48 page 141 &c, land records of Davidson County.

(3) Grant No. 12,742 L. 187 page 168 Records of Secretary of State, Raleigh, N.C. for 25 acres, Registered in Book 21 page 264, office of Register of Deeds, Stanly County.

(4) Grant No. 12,743 L. 187 p 164 Records of Secretary of State, for 25 acres, Registered Book 21 p 266 &c land records Stanly County.

(5) Grant No. 12,744 L. 187 p 165 Record of Secretary of State, Raleigh, N.C. Registered Book 21 p 267, land records of Stanly County for 187 acres.

(6) Grant No. 12,745, for 125 acres, L. 187, page 166 Records of Secretary of State, Raleigh, N.C. Registered Book 21 page 269 office of Register of Deeds, Stanly County.

(7) Grant No. 12,746 for 185 acres L. 187, page 167, Records of Secretary of State's office, Raleigh, N.C. Registered in Book No. 21 page 272 &c, Stanly County in the land records in the office of

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PENGAD 800-631-6989

the Register of Deeds for said County.

Together with all and singular the rights, privileges and appurtenances of every character thereto belonging or appertaining; the said parties undivided interest of said lands to Powell Evans, his heirs and assigns and one fourth undivided interest to W. F. Kelly, his heirs and assigns.

To Have and to Hold all and singular the above granted premises, with the appurtenances, unto the said parties of the second part, their heirs and assigns forever.

And the said W. Smithdeal party of the first part, for himself, his heirs executors and administrators, doth hereby covenant with the said parties of the second part, their heirs and assigns, that he is seized of the premises in fee simple; that the said premises are free from all incumbrances; that he hath good right and lawful authority to sell the same; and that he will warrant and defend the said premises unto the said parties of the second part their heirs and assigns, against the lawful claims of all persons whatsoever.

In Testimony Whereof, The said parties of the first part have hereunto set their hands and seals, this day and year above written.

W. Smithdeal (Seal)
Bessie A. Smithdeal (Seal)

State of North Carolina,
Rowan County.

Be it remembered, that on this 1 day of January 1890 before the undersigned Orin D. Davis, a Notary Public, duly confirmed in and for said County and State of said County, personally appeared W. Smithdeal and Bessie A. Smithdeal, his wife the grantors named in the foregoing deed and acknowledged the due execution thereof by them as their act and deed, and thereupon the said Bessie A. Smithdeal being by me privately examined, apart and apart from the said husband, touching her free consent to the execution of said deed, she, on such separate examination, declared that she executed the same freely, of her own will and accord, and without any fear, fear or undue influence on the part of her said husband, or any other person, and doth still voluntarily assent thereto. Therefore, let the said deed, together with this certificate, be registered.

Witness my hand and Notarial seal, date above written.

Orin D. Davis,
Notary Public.

State of North Carolina,
Rowan County. Superior Court, January 4, 1890.

The foregoing certificate of Orin D. Davis, a notary Public in

and for said County and State, is adjudged to be in due form and according to law Therefore let the said Deed, with the certificate, be registered.

W. G. Watson,
Clerk of the Superior Court.

North Carolina,
Davidson County } The foregoing certificate of Orin D. Davis Not. Public in and for the County of Rowan with his Notarial seal attached, having been exhibited before me, is adjudged to be correct. Therefore let the same with this certificate be registered. This 17 day of January 1896.

Chas. E. Hunt, C.S.C.

State of North Carolina, } Superior Court.
Stanly County. } January 27th, 1896.

The foregoing certificate of Orin D. Davis, a Notary Public of Rowan County made his Notarial seal is adjudged to be correct and sufficient. Therefore let the said deed with the certificate be registered. J. H. Millan C.S.C.

Office Register of Deeds, Stanly County N.C.

I hereby certify that the foregoing Deed was filed in this office for registration January 27th, 1896, at 5 o'clock P.M. and duly Registered. W.T. Hitchcock, R.D.

J. E. Morgan to R. E. Austin.

State of North Carolina,
Stanly County.

This Indenture, made on the 3d day of February A.D. One Thousand Eight Hundred and Ninety Six, between J. E. Morgan of the County of Stanly and State of North Carolina, on the one part and R.E. Austin of the County of Stanly and State of North Carolina, on the other part, Witnesseth: that whereas, by virtue of a certain deed of trust made by one F.C. Love to the said J.E. Morgan on the 7th day of September, A.D. One Thousand Eight Hundred and Ninety one to secure the payment of a debt of Three Hundred and Fifty Dollars and interest, due to one J. E. Morgan, as will fully appear on reference being had to the said deed, the condition of which not being complied with, the said J.E. Morgan did, according to said conditions, expose to public sale the property therein mentioned and thereby conveyed

ally before me Isham Misenheimer and his wife Mary D. Misenheimer and acknowledged the due execution the within deed whereupon I proceeded to take the examination of the said Mary D. Misenheimer seperate and apart from her said husband who declares to me that she signed the same freely without force, fear or any undue influence of her said husband or any other person and does still voluntarily assent thereto, therefore let the deed and this certificate be registered

J. M. Redwine
Probate Judge for Stanly County

Office Register of Deeds, Stanly Co. N.C.

The foregoing Deed was filed in this office for registration May 8th 1899. at 10 o'Clock A. M. and duly registered.

W. F. Huckabee,
Register of Deeds.

Evans and Klutz to Yadkin River Power Company.

This Indenture, made the Twenty ninth day of April A.D. 1899. between Powell Evans and Estelle Merchant Evans, his wife of the city of Philadelphia and State of Pennsylvania, and Theodore F. Klutz and Sallie C. Klutz, his wife of Salisbury, North Carolina, parties of the first part, and the Yadkin River Power Company, a corporation duly chartered, organized and existing under the laws of the State of North Carolina, party of the second part,

Witnesseth that:

In Consideration of the sum of Five Dollars, and for other valuable considerations, the receipt of which is hereby acknowledged, the said Powell Evans and Estelle Merchant Evans, his wife, and Theodore F. Klutz and Sallie C. Klutz, his wife, have granted, bargained, sold and conveyed, and by these presents do grant, bargain, sell and convey, unto the said Yadkin River Power Company, its successors and assigns, forever, the following described real estate, situate, lying and being in the Counties of

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III 9
ENGAD 800-631-6989

Davidson, Rowan and Stanly, and State of North Carolina, viz:

It and singular the lands described and granted in and by the following described seven grants from the State of North Carolina to W. Smithdeal, for seven several tracts of land, in the bed of the Yadkin River, including certain islands, lying in the Counties of Rowan, Davidson and Stanly, in said State, said grants being more particularly described and referred to as follows:

1. Grant No. 12,740, Liber 187, page 157, Records of Secretary of State, Raleigh, North Carolina, for six hundred (600) acres, registered in Book 81, page 127, &c., Office Register of Deeds Rowan County, and Book 48, page 136, &c., Register of Deeds office Davidson County;

2. Grant No. 12,741, Liber 187, page 161, Records of Secretary of State Raleigh, North Carolina, for four hundred (400) acres, registered in Book 81, page 127, &c, Land Records of Rowan, and Book 48, page 141, &c, land records in Davidson County.

3. Grant No. 12,742, Liber 187, page 163, Records of Secretary of State, Raleigh, North Carolina, for twenty-five (25) acres, registered in Book 21, page 264, Office of Register of Deeds Stanly County;

4. Grant No. 12,743, Liber 187, page 164, Records of Secretary of State, for twenty-five (25) acres, registered Book 24, page 266, &c., Land records Stanly County;

5. Grant No. 12,744, Liber 187, page 165, Records of Secretary of State, Raleigh, North Carolina, Registered Book 21, page 267, Land records of Stanly County, for one hundred and eighty nine (189) acres;

6. Grant No. 12,745, for one hundred and twenty-three (123) acres, Liber 187, page 166, Records of Secretary of State, Raleigh, North Carolina, registered Book 21, page 269, Office of Register of Deeds, Stanley County;

7. Grant No. 12,746, for one hundred and fifty-five (155) acres, Liber 187, page 167, Records of Secretary of State's Office, Raleigh, North Carolina, registered in Book No. 21, page 272 etc., Stanley County, in the land records in the office of the Register of Deeds for said County;

Together with all and singular the rights, privileges and appurtenances of every character thereto belonging or appertaining;

Being the same real estate which W. Smithdeal and Carrie R. Smithdeal, his wife, by deed dated the 1st day of January, A.D. 1896, and registered in the Office of the Register of Deeds for Davidson County, North Carolina, in Book of Deeds No. 48, pages 158, &c., in the Office of the Register of Deeds for Rowan County, North Carolina, in Book of Deeds No. 79, pages 137 etc., and in the Office of the Register of Deeds for Stanly County, North Carolina in Book of Deeds No. 21, pages 363, etc., granted and conveyed unto the said Powell Evans and Theodore F. Kluttz in fee;

To have and to hold all and singular the above granted premises, with the appurtenances, unto the said Yadkin River Power Company, its successors and assigns forever;

And the said Powell Evans and Theodore F. Kluttz, for themselves, their heirs, executors and administrators, do (each to the extent of his undivided interest therein) hereby covenant with the said Yadkin River Power Company, its successors and assigns, forever, that they will warrant and defend the said premises unto the said Yadkin River Power Company, its successors and assigns, forever, against the lawful claims of all persons whomsoever claiming or to claim the same, through or under the said Powell Evans and Theodore F. Kluttz and not otherwise or to any further extent.

In Testimony Whereof, The said parties of the first part have hereunto set their hands and seals, the day and year first above written.

Signed, sealed and delivered by Powell Evans and wife in the presence of us:
Wm McGeorge Jr.
Arthur McGeorge.

Powell Evans (seal)
Estelle Merchant Evans (seal)

Signed, sealed and delivered by Theodore F. Kluttz and wife in the presence of us:

Theo. F. Kluttz (seal)
Sallie C. Kluttz (seal)

State of Pennsylvania } ss.
City and County of Philadelphia.

Be it remembered That on this Twenty ninth day of April, A.D. 1864, before the subscriber, a duly authorized Notary Public of said City and County, personally appeared Estell Evans and Estelle Richard Evans, his wife, grantors named in the foregoing deed, and acknowledged the due execution thereof by them as their act and deed, and thereupon the said Estell Richard Evans, being, by me, privily examined, severate and apart from the said husband, touching his free consent to the execution of said deed, did on such separate examination declare that she executed the same freely, of her own will and accord, and without any force, fear or undue influence on the part of her said husband, or any other person, and doth still voluntarily accord thereto. Further, let the said deed, together with the certificate, be registered.

Witness my hand and seal, date above written.

Arthur McGeorge, Notary Public.

(Notarial Seal)

State of Pennsylvania,
County of Philadelphia.

I, W.B. Russell Thayer, Prothonotary of the County of Philadelphia and Clerk of the Court of Common Pleas of said County, which is Court of Record, having a common seal, being the officer authorized by the laws of the State of Pennsylvania to make the following certificate, Do Certify, That Arthur McGeorge Esquire, whose name is subscribed to the certificate of the acknowledgment of the annexed instrument and thereon written, was at the time of such acknowledgment a Notary Public for the Commonwealth of Pennsylvania, residing in the County aforesaid, duly commissioned and qualified to administer oaths and affirmations and to take acknowledgments and proofs of Deeds or Conveyances for lands, tenements, and hereditaments in said State of Pennsylvania and to all whose acts, as such, full faith and Credit are and ought to be given, as well in Courts of Judicature as elsewhere, and that I am well acquainted with the handwriting of the said Notary Public and verily believe the signature thereto is

genuine, and I further certify that the said instrument is executed and acknowledged in conformity with the Laws of the State of Pennsylvania.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of said Court, this First day of May in the year of our Lord one thousand eight hundred and ninety nine. (1899)

(Notarial seal)

W. Russell Frazer Secretary

State of North Carolina } ss.
County of }

Be it Remembered That on this 3rd day of May, A.D. 1899, before the undersigned, a duly authorized Notary Public of said County, personally appeared Theodore F. Klutz and Sallie C. Klutz, his wife, the grantors named in the foregoing deed, and acknowledged the due execution thereof by them as their act and deed, and thereupon, the said Sallie C. Klutz, being by me privily examined apart from her said husband and declaring her free consent to the execution of said deed, did, on such separate examination, declare that she executed the same freely, of her own will and accord, and without any force, fear or undue influence on the part of her said husband, or any other person, and doth still voluntarily accede thereto. Therefore, let the said deed, together with this certificate, be registered.

Witness my hand and seal, date above written.

(Notarial seal)

J. L. Rendleman Notary Public

State of North Carolina. } Superior Court.
Rowan County. } May 3rd 1899.

The foregoing certificate of Arthur McGeorge a Notary Public of the city and county of Philadelphia and John L. Rendleman a Notary Public of Rowan County are each adjudged to be in due form and according to Law. Let the instrument and the certificates be registered

Witness my hand date above written.

W. G. Watson C. S. C.

North Carolina, } Superior Court.
Stanly County. } May 8th 1899

The foregoing certificate of Isaac M. Hodge a Notary Public of the city and County of Philadelphia, and Jno. L. Renaldman a Notary Public of Rowan County are each adjudged to be in due form and according to law. Let the instrument and the certificate be registered. Witness my hand & date above written.

P. L. Council Clerk
Superior Court.

State of North Carolina, } Office of Register of Deeds.
Stanly County. } May 9th 1899.

Came to hand this the 9th day of May 1899, at 4 o'clock P. M. and registered.

W. T. Huckabee,
Register of Deeds.

Bond for Title to Abraham Forest.

This Indenture Made, this 26 of October in the year of our Lord one thousand eight hundred and seven between Rowland Crane of Montgomery County and State of North Carolina of the one Part and Abraham Forest of the same County and State of the other Part, Witnesseth, that for and in consideration of the sum of twenty five Pounds Current money of North Carolina to him in hand Paid by the said Abraham Forist the Receipt and Payment Whereof is fully acknowledged hath given, granted, Bargained and Sold and by these Presents doth give grant Bargain and sell unto the said Abraham Forist a certain tract Parsil or Parsils of Land Lying and being in Montgomery County and State aforesaid on the south west side of the Yadkin River beginning at a Sweet tree on the River Bank and Runs North Seventy and thirty Poles to a White oake, then South twenty west fifty four Poles, then South Seventy East thirty Poles to the River, then Down to the Beginning Containing ten acres of Land to have and to hold the aforesaid ten acres of Land with the appurtenances and all Rights, Privileges and Improvements to the said

Initial Statement

Before the Federal Energy Regulatory Commission
Application for License for Major Project -- Existing Dam

(1) Alcoa Power Generating Inc. (APGI), Yadkin Division, herein referred to as the "Applicant," applies to the Federal Energy Regulatory Commission (FERC) for a new license for the Yadkin Hydroelectric Project (Project), FERC No. 2197, as described in the attached exhibits.

(2) The location of the Project is:

State or territory:	North Carolina
Counties:	Davidson, Davie, Montgomery, Rowan, and Stanly
Townships or nearby towns:	Albemarle, Badin, Denton, Granite Quarry, Lexington, Mocksville, Rockwell, Salisbury, and Troy
Stream or other body of water:	Yadkin River

(3) The exact name and business address of the applicant are:

Alcoa Power Generating Inc.
Yadkin Division
P.O. Box 576
NC Highway 740
Badin, NC 28009-0576

The exact name and business address of the person authorized to act as agent for the applicant in this application is:

Mr. Brian S. Dahlberg
Vice President
Hydroelectric Operations
Alcoa Power Generating Inc.
Yadkin Division
P.O. Box 576
NC Highway 740
Badin, NC 28009-0576

Primary Contact for relicensing:

Mr. Gene Ellis
Licensing & Property Manager
Alcoa Power Generating Inc.

Yadkin Division
P.O. Box 576
NC Highway 740
Badin, NC 28009-0576

(4) The applicant is a domestic corporation and is not claiming preference under Section 7(a) of the Federal Power Act.

(5) (i) The statutory or regulatory requirements of North Carolina that affect the Project as proposed, with respect to bed and banks and to the appropriation, diversion, and use of water for power purposes, and with respect to the right to engage in the business of developing, transmitting, and distributing power in any other business necessary to accomplish the purposes of the license under the Federal Power Act, are:

APGI is not aware of any specific laws or regulations in North Carolina with respect to the bed and banks of the Yadkin River, or to the appropriation, diversion or use of the waters therein which are applicable to the Yadkin Project.

N.C.G.S. § 55-15-01 sets forth the requirements for a "foreign corporation" to conduct business in North Carolina.

(ii) The steps which the applicant has taken or plans to take to comply with the law cited above are:

North Carolina follows the riparian system of water rights, whereby the owner of riparian land possesses the right to use the waters passing over its lands reasonably, including temporarily impounding the water through the erection of a dam. See, e.g., Dunlap v. Carolina Power & Light Co., 212 N.C. 814, 823 (N.C. 1938) APGI owns all of the lands and riparian rights necessary under North Carolina law to operate and maintain the developments of the Yadkin Project.

APGI is a Tennessee Corporation, originally incorporated as Knoxville Power Company. It was domesticated in North Carolina in 1954.

(6) The name and address of the owner of existing Project facilities:

Alcoa Power Generating Inc.
Yadkin Division
P.O. Box 576
NC Highway 740
Badin, NC 28009-0576

(7) Person, citizen, association of citizens, domestic corporation, municipality, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, or maintain the Project:

Alcoa Power Generating Inc.
Yadkin Division
P.O. Box 576
NC Highway 740
Badin, NC 28009-0576

(8) (i) Every county in which any part of the project, and any Federal facilities that would be used by the Project, would be located:

Davidson County, North Carolina

Davidson County
P.O. Box 1067
Lexington, NC 27292
Mr. Robert Hyatt, County Manager

Davie County, North Carolina

Davie County
123 South Main Street
Mocksville, NC 27028
Mr. Terry Bralley, County Manager

Montgomery County, North Carolina

Montgomery County
P.O. Box 425
Troy, NC 27371
Mr. Lance Metzler, County Manager

Rowan County, North Carolina

Rowan County
202 North Main Street
Salisbury, NC 28144
Mr. William Cowan, County Manager

Stanly County, North Carolina

Stanly County
201 South Second Street
Albemarle, NC 28001
Mr. Jerry Myers, County Manager

(ii) Every city, town, or similar local political subdivision in which any part of the Project, and any Federal facilities that would be used by the Project, would be located; or that has a population of 5,000 or more people and is located within 15 miles of the Project dam:

City of Albemarle, North Carolina

City of Albemarle, North Carolina
157 North 2nd Street
Albemarle, NC 28001
Mr. Raymond Allen, Manager

City of Lexington, North Carolina

City of Lexington, North Carolina
Lexington City Hall
28 W Center Street
Lexington, NC 27292
Mr. John Gray, City Manager

City of Salisbury, North Carolina

City of Salisbury, North Carolina
P.O. Box 479
Salisbury, NC 28145
Mr. David Treme, City Manager

(iii) Every irrigation district, drainage district, or similar purpose political subdivision in which any part of the Project, and any Federal facilities that would be used by the Project, would be located; or that owns, operates, maintains, or uses any Project facilities or any Federal facilities that would be used by the Project:

Not applicable

(iv) Every other political subdivision in the general area of the Project that there is reason to believe would likely be interested in, or affected by, that application:

Town of Badin, North Carolina

Town of Badin, North Carolina
P.O. Box 611
Badin, NC 28009
Mr. Matt Brinkley, Town Manager

Town of Denton, North Carolina

Town of Denton, North Carolina
P.O. Box 306
Denton, NC 27239
Mr. William Pless, Town Manager

(v) All Indian tribes that may be affected by the project:

The Catawba Indian Nation of South Carolina

The Catawba Indian Nation of South Carolina
996 Avenue of the Nations
Rock Hill, SC 29730
Mr. Gilbert B. Blue, Principal Chief

The Eastern Band of Cherokee Indians

The Eastern Band of Cherokee Indians
88 Council House Loop
Cherokee, NC 28719
Chief Michell A. Hicks

This application is executed in the:

State of North Carolina

County of Stanly

By: Mr. Brian S. Dahlberg
Vice President
Hydroelectric Operations
Alcoa Power Generating Inc.
Yadkin Division
P.O. Box 576
NC Highway 740
Badin, NC 28009-0576

Being duly sworn, deposes, and says that the contents of this application are true to the best of his knowledge or belief. The undersigned Applicant has signed the application this _____ day of _____, 2006.

Alcoa Power Generating Inc., Yadkin Division
Applicant

By:_____
NAME

Subscribed and sworn to before me, a Notary Public of the state of _____ this _____ day of _____, 2006.

_____
Notary Public

Exhibit D

Statement of Costs and Financing

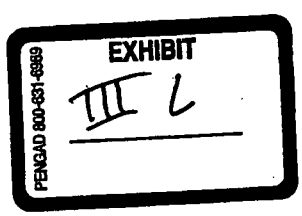


Exhibit D – Statement of Costs and Financing

D.1 Original Cost of the Project

The Yadkin Project (Project) was originally licensed with an effective date of May 1, 1958. Because this is not an initial license, a tabulated statement of original cost of Project land or water rights, structures, or facilities is not necessary.

D.2 Estimated Takeover Costs as per Section 14 of the Federal Power Act

Section 14 of the Federal Power Act (FPA) reserves to the United States the right to take over a non-publicly owned project upon expiration of its license. In the event that such take over is ordered by the Federal Energy Regulatory Commission (FERC), Alcoa Power Generating Inc. (APGI) would, pursuant to Section 14, be entitled to be reimbursed for its "net investment", not to exceed "fair value," plus any "severance damages" suffered (see 16 U.S.C. § 807). At the time of the filing of this License Application, there was no indication that any federal department or agency, state or municipality has or will recommend takeover or redevelopment of the Project. Nonetheless, APGI hereby submits the basic information required by FERC's regulations that would be needed to quantify the compensation to be paid to APGI pursuant to Section 14.

D.2.1 Fair Value

"Fair value" as that term is used in the FPA and for the purpose of this License Application, is calculated as the present cost of project reproduction less estimated depreciation. "Fair value" does not mean "fair market value" but rather is a specialized calculation of a company's unrecovered capital investment in today's dollars. The Handy-Whitman Cost Index (Index), a standard tool used in the utility industry to estimate the reproduction costs of utility assets, such as the project works, has been used to estimate the Project reproduction costs in 2005 dollars. For the purposes of this License Application, plant depreciation has been estimated for each development separately by dividing the value of the accumulated depreciation (Table D.2-2) by the total plant cost (Table D.2-2). Applying these percentages to each reproduction cost (Table D.2-1) for the Yadkin Project developments, developed using the Index, suggests that an estimate of the fair value of the Yadkin Project in 2005 dollars is $130,547,917.[1,2] No allowance has been made for external or functional obsolescence. Adding $130,547,917 to the original cost of the land within the Project, $6,791,638; produces a total fair value estimate for the Project of $137,339,555. It must be noted that the foregoing is a rough calculation of fair value and that more precise calculations using this methodology may be possible. The estimated fair value for the Yadkin Project, excluding Project land, is shown in Table D.2-1.

[1] Does not include the cost of equity.
[2] Note that this is not an appraisal value, and this calculation was not performed by a licensed appraiser.

Investments of $44,000,000 are anticipated in the Project through the expiration of the existing license on April 30, 2008.

Table D.2-1: Estimated Fair Value of the Yadkin Project[a,b]

Development	Reproduction Cost [c]	Estimated Physical Depreciation [d]	Estimated Fair Value
High Rock	$88,184,714	($50,845,542)	$37,339,172
Tuckertown	$54,849,726	($41,504,239)	$13,345,487
Narrows	$203,553,370	($135,747,707)	$67,805,663
Falls	$51,836,097	($39,778,502)	$12,057,595
Total	$398,423,907	($267,875,990)	$130,547,917

a. No attempt has been made to determine the current fair market value of real estate, including improvements, within the Project.
b. Anticipated capital investments into Project through expiration of existing license not included.
c. Based on Handy-Whitman Cost Index, all dollars are 2005. Value includes transmission equipment included within the Project as defined.
d. Does not include external or functional obsolescence.

D.2.2 Net Investment

The FPA generally defines a licensee's "net investment" in a project as the original cost of the project plus additions and betterments, minus depreciation and other amounts (See 16 U.S.C. § 796(13)). APGI's net investment in the Yadkin Project, as reflected in APGI's Fixed Asset Listing as of 2005, was $24,158,903 as shown in Table D.2-2.

Table D.2-2: Estimated Net Investment in the Yadkin Project [a]

Development	Total Plant Cost [b]	Accumulated Depreciation [c]	Net Investment
High Rock	$17,771,576	($10,246,813)	$6,524,763
Tuckertown	$16,979,919	($12,848,534)	$4,131,386
Narrows	$29,497,000	($19,671,270)	$9,825,730
Falls	$15,807,866	($12,130,843)	$3,677,024
TOTAL COST	$80,056,361	($55,897,460)	$24,158,903

a. Source: 2005 Fixed Asset Listing, from email from Lydia Gill dated 1/23/06.
b. For each development, the total plant costs includes: development specific total plant costs and a prorated amount of total Project (a) substation, (b) administrative (c) property and (d) non-utility accumulated depreciation.
c. For each development, the accumulated depreciation includes: development specific accumulated depreciation and a prorated amount of total Project (a) substation, (b) administrative (c) property and (d) non-utility accumulated depreciation.

D.2.3 Severance Damages

Under FPA § 14(a), "severance damages" are those "reasonable damages" to protect property not "caused by the severance there from of property taken" (See 16 U.S.C. § 807(a)). APGI believes that the severance damages inflicted by a takeover of the Yadkin Project would be significant. Given the inherent difficulties in attempting to quantify such speculative values, APGI reserves the right to submit additional evidence quantifying such severance damages should FERC consider ordering a takeover of the Project.

D.3 Estimated Cost of New Development Work

Per 18 CFR §4.30(b)(18), "new development costs" include any construction, installation, repair, reconstruction, or other change in the existing state of project works or appurtenant facilities, including any dredging and filling in project waters. For the purpose of this License Application, this includes the costs of turbine and generator upgrades and refurbishments as well as costs required to provide environmental mitigation or enhancement during the term of a new license.

APGI has conducted studies evaluating the turbine/generator refurbishment potential, as well as upgrades at the Project developments. APGI plans to refurbish and upgrade all Project units at High Rock, Tuckertown, and Falls under the new license, along with Narrows Units 1 and 3[3].

The estimated capital costs of the planned refurbishments and upgrades are presented in Table D.3-1.

Table D.3-1: Estimated Capital Costs of Planned Refurbishments and Upgrades

Development	Total Estimated Cost[a]
High Rock Units 1 - 3	$ 36,000,000
Tuckertown Units 1 – 3	$ 33,000,000
Narrows 1 and 3	$ 32,000,000
Falls 1 - 3	$ 29,000,000
Total	$ 130,000,000

a. All dollars are 2005.

D.4 Estimated Average Annual Cost of the Project

The estimated annual costs of operating the Yadkin Project are presented in Table D.4-1. These cost are based on the existing operation of the Project with the planned refurbishments and upgrades, as described in Exhibit D.3, and do not include any estimates for anticipated changes in the future operation of the Project.

[3] The upgrade of Narrows Unit 4 was completed in 2001, and Unit 2 will be completed prior to the expiration of the existing license in 2008.

Table D.4-1: Estimated Annual Project Operating Costs[a]

Item	Amount
Cost of Capital (equity and debt)[b,c]	$ 8,615,579
Property Taxes	$ 849,043
Depreciation[b,c]	$ 9,083,141
Operation & Maintenance[c]	$ 9,296,093
FERC Administrative Fee[d]	$ 466,241
Total	$28,310,097

a. All dollars are 2005. The Draft License Application Estimated Annual Operating Cost was $13,000,000 and did not include the Cost of Capital (equity and debt). The Estimated Annual Operating Cost presented here includes the Cost of Capital (equity and debt) and increased depreciation due to proposed capital investments.
b. Includes the cost of the refurbishment/upgrade of generating units (see Exhibit D.3, Estimated Cost of New Development Work).
c. Does not include the additional cost due to APGI's proposed alternative (see Exhibit D.9, Estimated Average Annual Change in Project Generation and Value of Project Power Due to Changes in Project Operations).
d. Average of Annual Charges for Fiscal Years 2003, 2004 and 2005 under 18 CFR Part 382; Annual Charges include FERC administrative charges and other federal agencies administrative charges, less FERC administrative charge adjustments.

D.5 Estimated Annual Value of Project Power

APGI estimates that the annual value of Project power produced is approximately $43,600,000. To develop this estimate, APGI modeled the existing Project operations with the addition of proposed generating unit upgrades (see Exhibit D.3) in the Yadkin Project Operations Model, OASIS, for the 1930 to 2003 period of record using the average monthly on and off-peak energy values for 2004 presented below in Exhibit D.8. APGI does not represent in this estimate any indication of the future value of wholesale electric energy or Project production levels.

D.6 Sources and Extent of Financing and Annual Revenues

Because the proposed refurbishment and upgrade will extend over a twelve year period from 2009 through 2020, APGI expects that the Project's capital requirements will be financed internally.

D.7 Estimate of the Cost to Develop License Application

The approximate cost to develop the License Application for the Yadkin Project was $20,000,000.

D.8 On-Peak and Off-Peak Values of Project Power

APGI calculated average monthly on-peak and off-peak energy values using a third-party developed index for southeast power sales. APGI has selected to use "Southern, Into" energy values. The "Southern, Into" energy values represent a compilation of daily values of peak and off-peak energy sold into the Southern Company Region for 2004, as reported by market participants to Platts, a McGraw-Hill company. Platts uses standard price reporting methodology, including FERC's 2003 standards. From this daily data, APGI calculated average monthly on-peak and off-peak energy values as shown in Table D.8-1. Platts, as publisher of this index, has approved the use of the data in this License Application.

Table D.8-1: Monthly Average Energy Values

Month	On-Peak Value of Project Power ($/MWh)	Off-Peak Value of Project Power ($/MWh)
January	$45.11	$29.31
February	$41.67	$28.89
March	$43.10	$29.41
April	$47.24	$29.51
May	$52.78	$31.00
June	$56.41	$27.35
July	$55.52	$26.28
August	$50.61	$28.26
September	$44.43	$28.02
October	$51.35	$30.82
November	$48.25	$31.84
December	$48.84	$34.39
Average	$48.78	$29.59

D.9 Estimated Average Annual Change in Project Generation and Value of Project Power Due to Changes in Project Operations

In order to estimate the average annual decrease in Project generation and average annual decrease in value of Project power related to the proposed protection, mitigation and enhancement (PME) measures, APGI modeled the existing Project operations and proposed Project operations in OASIS. Separate calculations were performed to determine the generation losses associated with dissolved oxygen enhancements proposed for the High Rock and Narrows developments. Both operating scenarios were run for the 1930 to 2003 period of record using the average monthly on and off-peak energy values presented above in Exhibit D.8. The estimated average annual decrease in Project generation is 2,100 megawatt hours (MWh). The estimated average annual decrease in the value of Project power is $770,000.

The estimated annual cost of operating the Project including the additional costs due to APGI's proposals for continued Project operation are presented in Table D.9-1.

Table D.9-1: Estimated Annual Project Operating Costs[a]

Item	Amount
Cost of Capital (equity and debt)[b]	$ 8,650,090
Property Taxes	$ 849,043
Depreciation[b]	$ 9,185,541
Operation & Maintenance[b]	$ 9,856,576
FERC Administrative Fee[c]	$ 466,241
Total	$29,007,491

a. All dollars are 2005
b. Includes the additional cost due to APGI's proposed operations
c. Average of Annual Charges for Fiscal Years 2003, 2004 and 2005 under 18 CFR Part 382; Annual Charges include FERC administrative charges and other federal agencies administrative charges, less FERC administrative charge adjustments.

Exhibit H

Information Required for New License

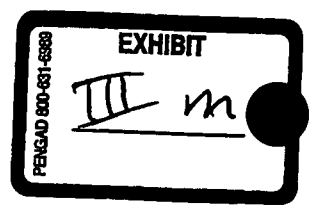


Exhibit H – Information Required for New License

H.1 Plans and Ability of the Applicant to Operate and Maintain the Project

H.1.1 Plans to Increase Capacity or Generation

Throughout the term of the current license, Alcoa Power Generating Inc. (APGI) has maintained the Yadkin Project (Project) to maximize generation value and efficiency. These efforts have included structural modifications, unit refurbishments, generator rewinds, and runner replacements. Under the new license, APGI plans to continue its refurbishment and upgrade program to ensure efficient and reliable electric service in the future. Unit refurbishments and potential upgrades at High Rock, Tuckertown, Narrows, and Falls Developments are proposed for completion under the new license (see Exhibits B.2 and E.2.7).

H.1.2 Plans to Coordinate Project Operation with Other Water Resource Projects

Historically, APGI has coordinated the operation of its facilities with the Tillery and Blewett Falls developments owned by Progress Energy downstream. This coordination has taken place pursuant to an agreement between the parties that dates from 1928 but which has been modified over the years, most recently in 1968, and the related FERC order issued in March 1968. Further modifications to this arrangement may be necessary depending on the terms of a new license for the Yadkin Project.

APGI schedules energy availability by Thursday noon for the coming week, allowing APGI to determine subsequent water flows downstream. Operating schedules are shared daily with the downstream project owner to communicate delivery of water. The U.S. Army Corps (USACE) operates and maintains a flood control project, W. Kerr Scott upstream of the Yadkin Project. Discharges from the USACE project are available on the Internet. APGI's operation of its reservoirs will be within the allowable drawdown limits of the license.

H.1.3 Plans to Coordinate Project Operation with Other Electrical Systems

The APGI generation and transmission system operates as a North American Electric Reliability Council (NERC) Balancing Authority. The facilities are operated in compliance with NERC and Southeastern Electric Reliability Council (SERC) guidelines.

The Project facilities are operated from the Dispatch Center in Alcoa, Tennessee, which is staffed 24 hours per day with NERC-certified operators. In addition, there is a backup Dispatch Center in Badin, North Carolina, that is equipped for full functionality should the need arise.

The Project is connected to the Duke Energy transmission system and the Progress Energy transmission system via APGI's 100 kilovolt (kV) transmission facilities.

H.2 Need of Applicant for Electricity Generated by the Project

Alcoa Inc. (Alcoa) owns all of the outstanding common stock of APGI and is the nation's largest producer of aluminum and aluminum products. Alcoa has several aluminum smelters and related operations in the United States, including extensive operations in the southeast and midwest regions, particularly in North Carolina, South Carolina, Indiana, and Tennessee. Aluminum smelting requires large amounts of low cost, reliable electricity, and energy can comprise more than 30 percent of the cost of producing aluminum. Thus, the competitiveness of Alcoa's primary aluminum business is closely tied to the availability of economical electric power rates. For this reason, Alcoa has located its smelting operations in close proximity to low-cost sources of reliable electric power such as the Yadkin Project hydropower developments, owned and operated by APGI. The Yadkin Project is critical to Alcoa's Primary Metals Operations because it enables Alcoa to maintain its competitiveness in the domestic aluminum market. For many years, the power from the Yadkin Project was a source of power for Alcoa's Badin Works, an aluminum smelter and processing plant. More recently, the smelting operations at Badin were curtailed, but the hydropower developments have continued to supply some power directly to Badin Works, with the remaining power sold to help offset the cost of electricity purchases required for Alcoa's other domestic smelting operations. Currently, the Yadkin Project provides 3 to 5 megawatts (MW) of electricity directly to Badin Works for aluminum refining and other operations that still occur at the plant, with the balance being sold into the wholesale market. Whether the energy from the Yadkin Project is sold into the wholesale market or used to directly supply Alcoa's smelting facilities, access to that source of low cost power is important to Alcoa's Primary Metals Business.

H.2.1 Reasonable Costs and Availability of Alternative Sources of Power

If the power and energy generated by the Yadkin Project were not available, Alcoa would require a replacement source of energy that is of equal value to that being supplied by the Project in order to retain the current economics of Alcoa's primary aluminum operation in the U.S. The Project's non-affiliated wholesale customers would be faced with obtaining firm or spot market power at a cost not to exceed that currently being paid for energy from the Yadkin Project. It is likely that the alternative source of on-peak energy to replace on-peak energy currently being obtained from the Yadkin Project's hydroelectric generation would be generated from coal or natural gas combustion at a higher economic and environmental cost.

H.2.2 Increase in Fuel, Capital, and Other Costs

If APGI were not granted a new license for the Yadkin Project, APGI's cost would include a cost equal to the loss of the market value of the Yadkin Project hydroelectric generation minus the cost of producing such generation. Whether the power generated by the Yadkin Project is consumed by the load at Alcoa's Badin Works or sold on the wholesale market, the difference between the cost of generation and the price on the wholesale market is the value that APGI receives from the Project.

The Project's wholesale customers would incur a cost increase equal to the price of replacement power minus the price currently being paid for the Yadkin Project hydroelectric generation.

H.2.3 Effects of Alternative Source of Power

See Exhibit H.2.

H.2.3.1 Effects on Applicant's Customers, Including Wholesale Customers

As discussed in Exhibit H.2, loss of the value of the Yadkin Project hydroelectric power by Alcoa would affect the costs for Alcoa's primary aluminum business.

In addition, customers other than Alcoa who presently purchase power would have to purchase from alternative sources if Project power were to become unavailable. At present, the only alternative generation for sale in the region comes from coal-fired facilities, gas-fired combustion turbines, or nuclear facilities generally at much higher costs and prices.

H.2.3.2 Effects on Applicant's Operating and Load Characteristics

As it is unlikely that alternative electric energy would be generated within APGI's system, electrical energy from any alternative source of power would be a net flow of power into the Yadkin Balancing Authority from the Duke Energy or Progress Energy transmission systems. The load at the Alcoa Inc. Badin Works would be fed by the alternative source of power instead of the Yadkin Project hydroelectric generation.

H.2.3.3 Effects on Communities Served or to be Served

The Yadkin Project does not sell power either wholesale or retail directly to communities. However, the Yadkin Project does enhance the reliability and power quality of the communities located in the area surrounding the Project. The Yadkin Project operates as a separate balancing authority within the SERC, responsible for the proper and reliable operation of its electric system in coordination with the electric power systems of neighboring utilities, specifically Duke Power Company and Progress Energy North Carolina. This includes responsibility for assuring that the power flows in and out of APGI's system are balanced, that voltage is maintained, and that frequency is held within strict limits. These actions by APGI, in concert with other utilities in North and South Carolina and Virginia, ensure that retail customers in North Carolina receive a reliable supply of electricity, with adequate reserve margins in both generation and transmission. The Yadkin Project also provides reactive power for voltage support of the transmission grid. There are instances that the Yadkin Project provides electrical energy for retail utilities when those utilities purchase Yakin Project power during times of equipment failure, weather related outages, maintenance outages and equipment upgrades. For instance, during the summer of 2005, the Yadkin Project provided electrical energy for Duke Power to communities north of APGI's High Rock transmission line connection with Duke Power while local transmissions lines were being upgraded by Duke Power.

H.3 Need, Reasonable Cost, and Availability of Alternative Sources of Power

H.3.1 Average Annual Cost of Power Produced by the Project

Table H.3-1 presents the average annual cost of the power produced by the Yadkin Project over the last two years. This includes the cost of capital and amortization.

Table H.3-1: Average Annual Cost of Power Produced by the Yadkin Project

Year	Cost
2004	$16,335,879
2005	$15,755,551

H.3.2 Resources Required to Meet Capacity and Energy Requirements

H.3.2.1 Energy and Capacity Resources

Currently the Yadkin generation capacity and energy is greater than the resources required by the load being served within the Yadkin system. Energy production that is greater than the required resources is sold on the wholesale market. Should additional resources be required in the future those resources would be purchased on the wholesale market.

H.3.2.2 Resource Analysis

Because of the requirement for low cost power arising out of the economics of aluminum manufacturing, there do not appear to be such alternatives to replace the capacity and energy from the Yadkin Project available in the wholesale market. Although capacity and energy could be purchased over the short and long-term to replace Yadkin Project power, the purchase price for such resources almost certainly render this power uneconomic for aluminum production. However, this would not be true regarding the wholesale customers who currently purchase some of the Yadkin Project output as such sales are made at market prices.

H.3.2.3 Effects of Load Management Measures

Load management measures would not have an effect, for the reasons stated above.

H.3.3 Costs of Alternative Sources of Power

H.3.3.1 Annual Cost of Each Alternative Source of Power to Replace Project Power

The annual cost to replace the Project capacity and energy with purchased power from the wholesale market would be at least equal to the estimated annual value of Project power which is $43,600,000 (see Exhibit D.5).

The least cost option for the construction of new generating facilities to replace the Project capacity and energy would be a conventional or advanced combustion turbine at $374/kilowatt (kw) to $395/kw (see Table H.3-2). The operating cost of any fossil fuel power plant is highly dependent on fuel cost. The estimated construction cost of a 250 MW conventional or advanced combustion turbine would be in the range of $94,000,000 to $95,000,000 with an annual operating cost of $59,000,000 to $69,000,000 to produce energy equal to the Project power (see Table H.3-3). This includes O&M and fuel cost. Property tax, depreciation, cost of capital, and any regulatory costs are not included.

Table H.3-2: Cost and Performance Characteristics of New Central Station Electricity Generating Technologies[a]

Technology	Size (MW)	Leadtimes (Years)	Total Overnight Cost in 2004 (2003 $/kW)	Variable O&M (2003 mills/kWh)	Fixed O&M (2003 $/kW)	Heatrate in 2004 Btu/kWh)
Scrubbed Coal New	600	4	1,213	4.06	24.36	8,844
Integrated coal-gasification Combined Cycle	550	4	1,402	2.58	34.21	8,309
IGCC with Carbon Sequestration	380	4	2,008	3.93	40.26	9,713
Conv Gas/Oil Comb Cycle	250	3	567	1.83	11.04	7,196
Adv Gas/Oil Comb Cycle	400	3	558	1.77	10.35	6,752
ADV CC with Carbon Sequestration	400	3	1,114	2.60	17.60	8,613
Conv Combustion Turbine	160	2	395	3.16	10.72	10,817
Adv Combustion Turbine	230	2	374	2.80	9.31	9,183
Fuel Cells	10	3	4,250	42.40	5.00	7,930
Advanced Nuclear	1000	6	1,957	0.44	60.06	10,400
Distributed Generation-Base	2	3	807	6.30	14.18	9,950
Distributed Generation-Peak	1	2	970	6.30	14.18	11,200
Biomass	80	4	1,757	2.96	47.18	8,911
MSW – Landfill Gas3,108	30	3	1,500	0.01	101.07	13,648
Geothermal	50	4	3,108	0.00	104.98	45,335
Conventional Hydropower	500	4	1,451	4.60	12.35	10,338
Wind	50	3	1,134	0.00	26.81	10,280
Solar Thermal	100	3	2,960	0.00	50.23	10,280
Photovoltaic	5	2	4,467	0.00	10.34	10,280

a. Information in this table is taken from Table 38 in Cost and Performance Characteristics of New Central Station Electricity Generating Technologies in Energy Information Administration/Assumptions to the Annual Energy Outlook 2005.

Table H.3-3: Cost of a 250 MW Conventional and Advanced Combustion Turbine to Produce 982,000 MWh

Technology	Variable O&M Cost	Fixed O&M Cost	Average Natural Gas cost cents/10^6 2004[a]	Fuel Cost	Total Annual Cost[b]	$/MWh
Conv Combustion Turbine	$3,103,120	$2,680,000	596.1	$63,319,495	$69,102,615	$70.37
Adv Combustion Turbine	$2,749,600	$2,327,500	596.1	53,754,545	$58,831,645	$59.91

a. Natural gas cost is from Table 4.5 Receipts, average Cost, and Quality of Fossil Fuels for the Electric Power Industry, 1993 through 2004 Energy Information Administration Electric Power Annual 2004.
b. Total cost is O&M and Fuel Cost. Property taxes, cost of capital, depreciation, and any regulatory costs are not included.

H.3.3.2 Basis for Determination of Annual Cost of Each Alternative Source of Power

The basis for determination of the cost of purchased power is the value of Project power from Exhibit D.5. To develop this estimate, APGI modeled the existing Project operations with the addition of proposed generating unit upgrades in the Yadkin Project Operations Model, OASIS, for the 1930 to 2003 period of record using the average monthly on and off-peak energy values for 2004 presented in Exhibit D.8.

The basis for determination of the construction and operating cost of a combustion turbine facility with a capacity of 250 MW and energy production equal to the Project power is data from the Energy Information Administration/Assumptions to the Annual Energy Outlook 2005 and the Energy Information Administration/Electric Power Annual 2004.

H.3.3.3 Relative Merits of Each Alternative

The estimated long-term average annual cost of the Project power is $28,310,097 (see Exhibit D.4). This is the long-term cost of power production that seems to be appropriate to compare to the cost of alternative sources of power. The cost of replacement power from the wholesale market is estimated to be $43,600,000. This is a 55 percent increase in the cost of power and equal to the current Project power value. The source of generation for power from the wholesale market would be from fossil fuels (or possibly nuclear generation).

The estimated average annual cost of operating a combustion turbine is $59,000,000 to $69,000,000, which is a 110 to 145 percent increase in cost. This increase in cost does not include the debt and equity cost of capital and the depreciation for the $94,000,000 to $95,000,000 cost of the construction of a combustion turbine facility.

In addition, either of these alternatives would have the added environmental impact of additional fossil fuel combustion releases which would impact air quality in the region. Significant

quantities of carbon dioxide and nitrous oxide and lesser quantities of carbon monoxide and sulfur dioxide would be produced as a byproduct of combustion.

H.3.4 Effect on the Direct Providers of Alternative Sources of Power

There would be additional resource requirements on the power system(s) and transmission system(s) that supply the energy to the Yadkin Project if replacement energy were purchased on the wholesale market. The specific power facilities and transmission facilities that would be affected are unknown.

H.4 Effect of Obtaining or Losing Electricity on the Applicant's Own Industrial Facilities

The effect of obtaining or losing electricity on Alcoa's industrial facilities is discussed previously in Exhibit H.2.

H.5 The Impact on the Operations and Planning of the Applicant's Transmission System

H.5.1 Effects of Power Flow Redistribution

The Yadkin Project is connected to the Duke Energy transmission system and the Progress Energy transmission system at Badin and High Rock via the APGI 100kV transmission facilities.

As addressed previously in Exhibit H.2.3.3, the Yadkin Project system is used to increase reliability of electricity in the geographic region. During periods of forced outages on generating units in adjacent utilities, and in high North-South or South-North power flows, the Yadkin Project generation is redirected on the interconnected transmission system to offset high line loading during abnormal conditions. Redistribution of the power flows reduces the line loading to within acceptable engineering limits. Reductions or restrictions in the amount or timing of APGI's power generation would prohibit APGI from alleviating these overloading conditions which could lead to opening of line breakers on the transmission system to redirect the flow of power in the immediate area, and thus affect reliability of electricity.

H.5.2 Advantages of the Applicant's Transmission System

The Yadkin Project transmission system was originally primarily used to connect the generating facilities of the Project, and to provide a path for additional power to increase the reliability of the electricity supply to Alcoa's Badin Works during low Project generation periods through interconnections with local utilities Duke Energy and Progress Energy North Carolina. Originally these transmission facilities were all part of the Project, but as Duke Energy and Progress Energy expanded their own transmission facilities in the region, it became apparent that the bulk of the Yadkin Project 100 kV transmission facilities had become part of the larger interconnected transmission grid. Subsequently, the Project license was amended to remove all but two transmission lines from the Project.

The two transmission lines that remain in the Project are 1) the four- circuit 13.2-kV line that connects the Narrows Powerhouse to a switchyard located at Alcoa's Badin Works and 2) the single-circuit 100-kV line that connects the Falls Powerhouse to the Badin substation. Thus, there is limited transmission in the Yadkin Project that would materially help regional electrical reliability. Delivery of Project energy to Alcoa's Badin Works and/or to the interconnections with Duke Energy and Progress Energy at the Badin substation and High Rock powerhouse does benefit the regional distribution of the Project's power and to help provide voltage regulation in the area. These uses will remain an important function of Yadkin's transmission system when a new license is granted.

APGI's non-Project transmission system consists of approximately 15 miles of single-circuit 100-kV transmission lines that run from the High Rock Development, through the Tuckertown Development and continue to a switchyard at Alcoa's Badin Works.

H.5.3 Single Line Diagrams

The electrical one-line diagram is shown in Figure H-1.

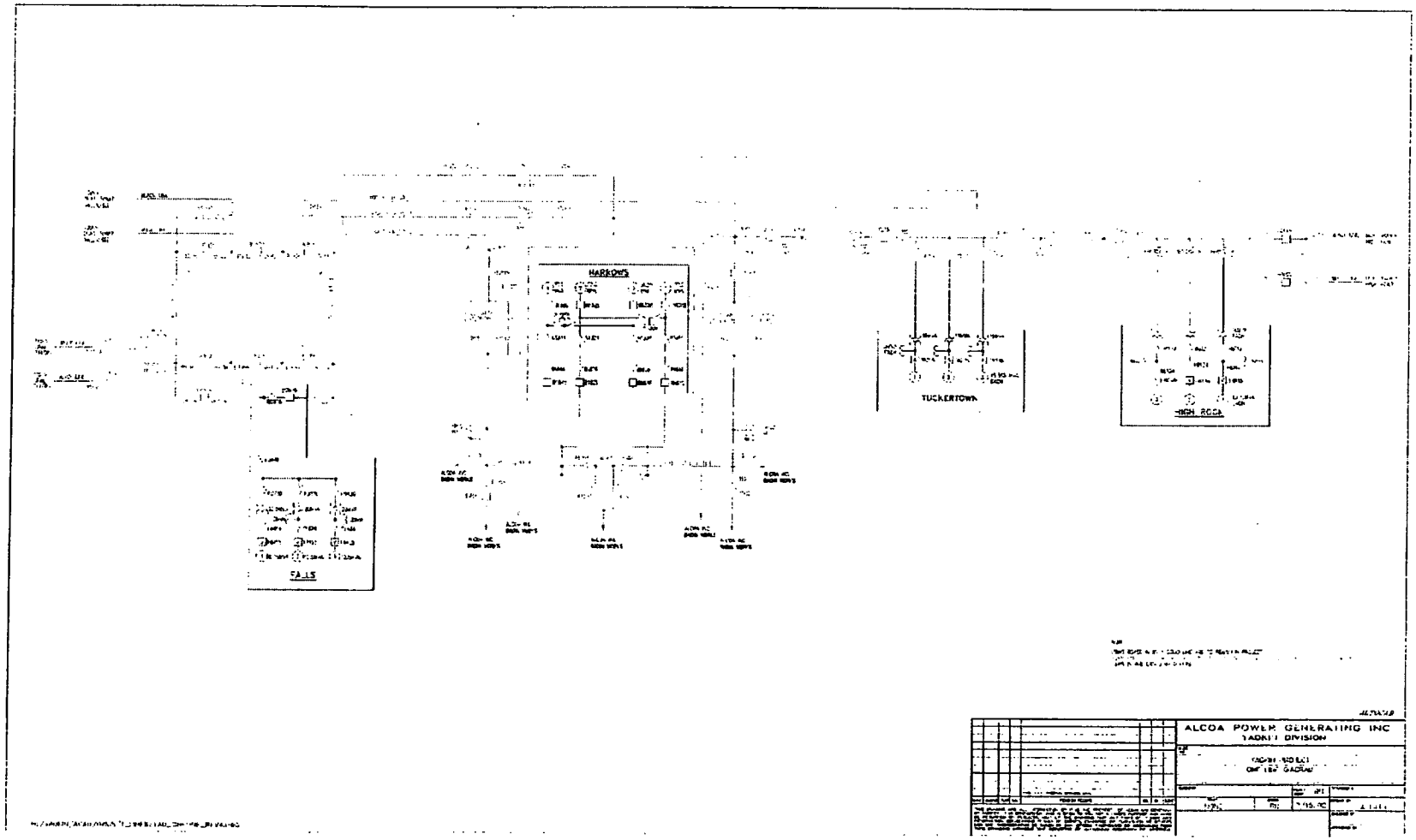
H.6 Plans to Modify Existing Project Facilities

During the new license, APGI proposes to replace existing turbine runners, rewind generators, and refurbish auxiliary equipment at all Project developments (see Exhibit B.2). The facilities proposed for refurbishment are nearing the end of their useful operating lives and are in need of overhaul or replacement. Replacement of the turbine runners will result in increased hydraulic efficiency. Similarly, rewinding the generators and completing associated refurbishments to the electric controls will increase the efficiency by which mechanical energy is converted to electric energy.

In evaluating the proposed unit upgrades, APGI considered the potential effects of the unit upgrades on environmental resources. In this regard, APGI proposes to enhance Project water quality by modifying the design of the replacement runners and draft tube cones in such a way as to enhance the dissolved oxygen conditions in the Project tailraces at the High Rock and Narrows developments. This proposal is discussed in more detail in Exhibit E.2.7.

The planned unit upgrades, refurbishments, along with the installation of technology to improve dissolved oxygen will conform with the comprehensive plan for improving the waterway and for other beneficial uses as defined in Section 10(a)(1) of the Federal Power Act (FPA).

Figure H-1: Yadkin Project One-Line Diagram



H.7 Financial and Personnel Resources

As a wholly-owned subsidiary of Alcoa Inc., APGI has sufficient financial resources to continue operating and maintaining the Project, as well as perform the unit refurbishments/upgrades that are being proposed under the new license.

As previously mentioned, all four Project developments are operated by full-time Power Dispatchers under the direction of the APGI Operations Manager. Operation and generation dispatch is remotely controlled from the Dispatch Center located in Alcoa, Tennessee. The Project is staffed by a crew either located at High Rock or Narrows powerhouses, or at the plant in Badin, North Carolina. The crew consists of multi-craft hydroelectric mechanics, electronics technicians, and supervisors.

The technical support staff is based in Badin, North Carolina and Alcoa, Tennessee, in the same building as the Dispatch Center. The support staff consists of electrical and mechanical engineers, and technical and office personnel. Members of the technical support staff have formal education in their field of expertise and are expected to stay abreast of developments in the hydroelectric industry through continuing education opportunities.

The entire staff receives annual safety training that goes beyond the current state and federal requirements.

Routine maintenance for all four developments is performed by either contracted maintenance crews or by maintenance crews based at the facilities. Major maintenance is normally contracted under specifications by APGI's Engineering Department.

H.8 Proposed Expansion of Project Lands

APGI does not propose to expand the Project to encompass additional lands.

H.9 Applicant's Electricity Consumption Efficiency Improvement Program

H.9.1 Applicant's Record of Encouraging Power Conservation and Plans for Promoting Power Conservation

All of the electricity that APGI generates at the Project is for the benefit of its ultimate customer, Alcoa, and specifically, Alcoa's smelting facilities, whether the Project power is sold in the wholesale market or used directly. The nature of the aluminum smelting process makes energy efficiency a top priority for Alcoa.

Alcoa and other primary aluminum companies produce aluminum from alumina by an electrolytic reduction process that requires large amounts of electric energy as an industrial input. Electric energy accounts for more than 30 percent of the cost of a pound of aluminum produced at an aluminum smelter, and as such, is often the largest single variable cost in the production of

aluminum metal and the most significant factor in determining a company's competitive position in the market

Alcoa's smelters are constantly seeking opportunities to reduce operating costs. Such cost savings are often realized through improved energy efficiency both in the industrial smelting process and in the generation of electric power. As described in Exhibit H.6, Plans to Modify Existing Project Facilities, APGI has initiated phased-in refurbishments and upgrades of aging equipment in order to generate additional electric power from the same water flows on the Yadkin River. In addition, the aluminum smelting industry in general and Alcoa in particular are constantly searching for ways to improve energy efficiency in the smelting process. The Aluminum Association, Inc. estimates that optimization of aluminum smelting processes has reduced the energy demands by more than 20 percent (from more than 8kWh to approximately 6.5kWh per pound) over several years.

Finally, Alcoa also has implemented a long-term energy strategy for the past several decades. New policies developed in the wake of the energy crisis of the 1970's sought to increase self-sufficiency in energy generation and greater energy efficiency at every step of the manufacturing process. More recently, Alcoa has formulated an energy efficiency plan that benchmarks best practices in the industry and makes them available to Alcoa locations. The foundation of the plan is the formation of a network of energy users at Alcoa locations that embrace and employ best practices for improving energy efficiency.

H.9.2 Compliance of Power Conservation Programs with Applicable Regulatory Requirements

The power conservation efforts described in Exhibit H.9.1 meets the intent of the Federal Power Act Section 10(a)(2)(C). There are no State regulatory requirements applicable to the Yadkin Project concerning power conservation programs.

H.10 Identification of Indian Tribes Affected by the Project

Since the distribution of the Initial Consultation Document (ICD) in September 2002, APGI has worked to engage the Catawba Indian Nation (CIN) and the Eastern Band of Cherokee Indians (EBCI) in the relicensing of the Yadkin Project. In addition to the identified tribes, APGI also provided a copy of the ICD to the North Carolina Commission of Indian Affairs.

The current Catawba Indian Nation Reservation is located in South Carolina on the Catawba River. The traditional ceded homelands of the tribe do extend through the entire Piedmont of North Carolina. The Catawba Indian Nation indicated an interest in the Yadkin Project relicensing and has participated as a member of the Cultural Resources Issue Advisory Group. The Catawba Indian Nation identified several interests regarding the Project relicensing that are discussed in more detail in Exhibit E.4.

In a meeting in July 2004, EBCI shared with APGI a map of lands to which they attach religious or cultural significance, and none of the five counties immediately adjacent to the Yadkin Project were identified as significant. EBCI has remained on APGI's distribution list for all relicensing

related materials, meeting notices and communications. However, the EBCI did not directly participate in the Issue Advisory Groups.

Contact information for the two tribes with an expressed interest in the Yadkin Project relicensing is provided below:

The Catawba Indian Nation of South Carolina
Chief Gilbert B. Blue
996 Avenue of the Nations
Rock Hill, SC 29730

The Eastern Band of Cherokee Indians
Chief Michell A. Hicks
88 Council House Loop
Cherokee, NC 28719

H.11 Measures Planned to Ensure Safe Management, Operation, and Maintenance of the Project

APGI strictly adheres to the FERC regulations for maintaining safety at all of its developments within the Project. As such, APGI prepares quality control programs during construction, repair, and modifications of Project works; prepares adequate provisions for installing and maintaining appropriate monitoring instrumentation wherever any physical condition has the potential to affect the safety or stability of the Project; and prepares public safety plans. In addition, APGI performs periodic inspections, every five years, of the Project facilities by an independent consultant, performs power and communication lines testing, and performs annual spillway gates testing.

Also in accordance with FERC guidelines, the Project has an Emergency Action Plan (EAP), which was most recently revised and updated in December 2005. The EAP serves as a tool to APGI personnel as well as public safety agencies to ensure public safety while minimizing property damage in the unlikely event of a failure or potential failure of High Rock, Tuckertown, Narrows, or Falls Dam.

The reservoir and tailrace elevations are monitored continuously by float-operated or sonic transducers. The elevations are recorded hourly at the Dispatch Center in Alcoa, Tennessee. Any significant change in the reservoir or tailrace elevations will be noted by the power dispatcher.

High Rock and Narrows powerhouses are manned by APGI mechanics. The Tuckertown and Falls Developments are unmanned, but are inspected each manned shift. The staff is well trained and routine surveillance of potential hazards is included in the operation of the facilities. Any abnormal condition is reported to the power dispatcher, the operations general supervisor, and/or the maintenance coordinator.

Instrumentation monitoring plans are also set up at the Project facilities to monitor conditions at the developments to alert staff to possible problems.

Weekly inspections of pertinent operating and safety features are performed by the APGI operating personnel. In addition, annual inspections of the Project structures are conducted by APGI's supervisory and engineering personnel with documentation of conditions. Routine

maintenance for all four developments, including trash removal, is performed by either contracted maintenance crews or by maintenance crews based at their facilities. Major maintenance is normally contracted under specifications by APGI's Engineering Department.

The backup diesel generators are inspected on a weekly basis and tested on a monthly basis to ensure operability of the spillway gates. The spillway gates are tested annually at each development and a full-open gate testing is performed on a five year basis. The data communication lines are tested daily, and voice communication lines are tested weekly.

H.11.1 Existing and Planned Operation of the Project During Flood Conditions

During unusually high flow conditions (greater than 30,000 cubic feet per second [cfs]), maintenance personnel are sent to the Project dams, as required, to operate bypass and spillway gates, and monitor general conditions at the Project dams. Each Project development uses a "Standard Gate Operating Procedure" for discharging water through the spillway gates during flood conditions.

All four dams are continuously monitored at the Dispatch Center located in Alcoa, Tennessee through a Supervisory Control and Data Acquisition (SCADA) system. The SCADA system provides real-time monitoring, reporting, and alarming of key elements associated with the normal operation of the dams, including, but not limited to, power generation, unit operation, and reservoir and tailrace elevations. APGI's operation of all four hydro developments as an integral system allows for advance notice of impending flood flows, including localized storm events. Any significant change in the reservoir elevation due to inoperability of the gates or other conditions will be noted by the Dispatcher who will alert the necessary personnel at Alcoa's plant in Badin, North Carolina. These remote monitoring devices provide for a timely response to an adverse condition if it were to occur.

The principal means of communication during an emergency, including flood events, consist of the Yadkin PBX system, the public telephone, cell phones, and two-way radios carried by APGI maintenance crew while working on the dams. There are two base stations for the two-way radio system, one at High Rock Powerhouse and one at Building 105 (Badin Plant) - a backup station, in case the High Rock Powerhouse station system is inoperable. Communication is possible between the base station and the mobile units, between the independent mobile units, as well as the Dispatch Center in Alcoa, Tennessee

H.11.2 Warning Devices Used to Ensure Downstream Public Safety

APGI maintains a comprehensive public safety program to ensure the structural adequacy of the Project dams and the safety of the public within the Project area. All four of the Project dams are inspected annually by a team of APGI's supervisory and engineering personnel. Independent consultants, approved in advance by FERC and engaged by APGI, thoroughly examine the development structures once every five years and publish a comprehensive Safety Inspection Report. The most recent Independent Safety Inspection Reports for the Project developments were prepared in 2003 and 2004 by PB Power.

APGI maintains a current EAP for the Project in the event of high flows, or the unlikely event of a failure or potential failure of the Project dams. This plan is designed to minimize danger to people and property downstream of the High Rock, Tuckertown, Narrows, and Falls Dams. The EAP provides guidelines for notification and early warning of local, state, and federal agencies, emergency services staff, and the public in the event of an actual or potential failure. Developed in accordance with FERC guidelines, the EAP is tested and updated annually. This EAP includes a flood warning notification to the National Weather Service and other agencies during periods of high release (high flows) from the Project developments.

Some of the specific safety measures employed at the Project include fencing, lighting, signs at the dam forebays and tailraces, and turbulent water and spillway warning signs.

At all four Project dams, a warning/sounding alarm is present at the spillway gates and tailwater of generating units. Sounding the alarm prior to starting a unit or opening a spillway gate is a separate control action from opening of the spillway gate.

H.11.3 Proposed Changes Affecting the Existing Emergency Action Plan

APGI does not propose any changes to the operation of the Project that might affect the existing EAP. The EAP was most recently updated in December 2005.

H.11.4 Existing and Planned Structural Monitoring Devices

Instrumentation monitoring plans have been set up at each of the Project facilities to monitor conditions at the developments and to alert staff to possible problems. The following sections discuss monitoring at the Project developments. No changes are proposed at this time.

H.11.4.1 High Rock Dam and Powerhouse Monitoring Devices

The instrumentation program consists of deformation monitoring (inclinometers, extensometers, crackmeters, and survey points), piezometers, thermistor readings, seepage measurements, precipitation measurements, and reservoir and tailwater level monitoring devices.

H.11.4.2 Tuckertown Dam and Powerhouse Monitoring Devices

The instrumentation program consists of deformation monitoring (inclinometers), piezometers, seepage, and reservoir and tailwater level monitoring devices.

H.11.4.3 Narrows Dam and Powerhouse Monitoring Devices

The instrumentation program consists of deformation monitoring (extensometer and inclinometers), seepage, and reservoir and tailwater level monitoring devices.

H.11.4.4 Falls Dam and Powerhouse Monitoring Devices

The instrumentation program consists of deformation monitoring (survey) and reservoir and tailwater level monitoring devices.

H.11.5 Project's Employee and Public Safety Record

As previously mentioned, the entire APGI staff receives annual safety training that goes beyond the state and federal requirements. The safety process consists of a highly developed combination of protective equipment, procedures, inspections, observations, and audits. The success of the process is evident in the fact that APGI has not had a lost workday due to injury since September 23, 1986.

The Project is a popular destination for boating, camping, fishing, swimming, and various other recreation activities. The high use and popularity of the Project's large reservoirs, currently with 40 recreation facilities and access areas available to the public use, contributes to the high number of public safety incidents. Table H.11-1 presents a brief description (with dates) of reported deaths and injuries that have occurred within the Project boundary from the beginning of 2004 through December 31, 2005.

Table H.11-1: Summary of Injuries and Deaths at the Yadkin Project 2004 -2005

Date	Reported Injury/Fatality
3/21/2004	Drowning of a 35 year old male on High Rock Reservoir. Boat overturned in rough waters. Victim was not wearing a life jacket.
6/2/2004	Overturning of a boat in the Tuckertown Powerhouse tailrace on Narrows Reservoir.
10/29/2004	Apparent suicide (shooting). A 22 year old male found in picnic table at the Southmont Public Access Area on High Rock Reservoir, Davidson County.
11/18/2004	Drowning of an 81 year old male on High Rock Reservoir, near a commercial lake access area off Bringle Ferry Road, Rowan County. Victim had a history of heart problems and his boat was found tied to a pier.
6/3/2005	Drowning of a 43 year old male on High Rock Reservoir. Victim was hit by a propeller when he fell off from a boat that took on water.
7/21/2005	Drowning of a 21 year old male on High Rock Reservoir. Victim was swimming near edge of roped off swimming area approximately 50 feet from shore. Victim was not wearing a life jacket.
8/06/2005	Drowning of a 30 year old male on Narrows Reservoir. Victim was swimming outside the roped swimming area to the opposite shore approximately 30 yards away.
9/17/2005	Death of a 26 year old male on Falls Reservoir. Victim was a diver performing work in the intake area of Falls Powerhouse.
12/22/2005	Drowning of a 14 year old male on High Rock Reservoir. Victim was duck hunting with three other males when their boat capsized. The other three persons were rescued.

H.12 Current Operation of the Project

The High Rock Development is a storage facility that is operated in a store-and-release mode. The Narrows Development has storage available, but is generally operated as essentially a run-of-river[1] facility on a daily basis. Based on the limited available storage capacity, the Tuckertown and Falls Developments are essentially operated as run-of-river facilities on a daily basis. Generally, the plants operate during peak hours to maximize the economic value of the power produced. During periods of high stream flow, the system is operated continuously.

As part of its current license with the FERC, APGI operates the Project under operating guides developed with consideration given to many diverse interests including energy generation, recreation, environmental stewardship, downstream municipal and industrial needs, and others. Specifically, the water releases from the Project developments are governed by two FERC orders: one order governs the Project operation under an operating guide for the High Rock Reservoir, and the second order governs the headwater benefits agreement between APGI and Progress Energy.

The High Rock Development is currently operated in accordance with an approved operating guide curve which regulates generation, not headwater elevation. Within the limitations of available streamflow, the operating guide curve is designed to maintain higher water elevations from mid-May to mid-September, followed by a fall-winter drawdown to allow for refill during the late winter and spring runoff. The operating guide curve, reviewed and approved by FERC, was established in 1968, ten years after issuance of the existing license. During periods of low High Rock water levels and low streamflows, the operating guide has an overriding reservoir elevation requirement for APGI to limit discharge to a maximum amount of water on a weekly basis from early March to mid-September to help maintain High Rock water levels.

In addition to the operating guide curve, APGI operates in accordance with an associated 1968 agreement and FERC order related to headwater benefits. Water storage in the APGI reservoirs during periods of high streamflow allows a controlled release to enhance watershed power generation. This regulation of flow provides benefits to APGI and to Progress Energy, by seasonally increasing the flow available for hydropower generation at the downstream facilities. By way of the March 1968 FERC order, Progress Energy pays APGI an annual headwater benefits fee for this benefit. The agreement with Progress Energy requires that that the regulated weekly average streamflow, during the ten-week period preceding the recreation period (May 15 through September 15) is not less than 1,500 cfs; during the period May 15 through July 1, is not less than 1,610 cfs; and during the period July 1 through September 15, is not less than 1,400 cfs.

Available storage at Narrows Reservoir may be used during periods of low streamflow to maintain the required minimum downstream releases. Table H.12-1 lists the drawdown relationship between High Rock and Narrows reservoirs as defined by the current Project license.

Current Project operation is discussed in more detail in Exhibit B.

[1] Run-of-river means that the average daily discharge is approximately equal to the average daily inflow, with daily fluctuations occurring to meet system operating demands.

Table H.12-1: Drawdown Relationship Between High Rock and Narrows Reservoirs

High Rock Reservoir		Narrows Reservoir	
Elevation (ft)	Drawdown (ft)	Elevation (ft)	Drawdown (ft)
623.9	0.0	509.8 – 507.7	0.0 – 2.1
622.9	1.0	508.2 – 503.2	1.6 – 6.6
599.9	24.0	508.2 – 503.2	1.6 – 6.6
599.9	24.0	502.7	7.1
597.9	26.0	493.7	16.1
593.9	30.0	478.8	31.1

H.13 History of the Project and Record of Programs to Upgrade the Operation and Maintenance of the Project

H.13.1 High Rock Development

High Rock Development was the third of the Project developments to be built. The turbines for Units 1, 2 and 3 were put in service in 1927. There have been no upgrades to the original Units under the existing license. The Unit 1 generator was rewound in 1988. Other available structural/maintenance records are summarized below:

- At the time of the original construction, the embankments were not riprapped at locations adjacent to the shallow bodies of reservoir water. However, after the reservoir was filled, it was found that sufficient wave action existed to erode the embankments. These locations were repaired with riprap to prevent further damage.

- In 1954, the elevation of the top intake deck and non-overflow gravity sections was raised to elevation of 638.9 ft. This 1954 concrete was extensively dowelled to the original 1927 concrete. Along with increasing the height, the thickness of the no-overflow sections as well as portions of the intake/powerhouse (service and unloading bay) was also increased.

- Based on a review of underwater diving inspections and tailrace investigations, there is evidence of scour of the spillway and powerhouse. Repairs have been made multiple times (1961, 1993, and 1996) in the past to maintain the powerhouse and spillway in good condition.

- During a dive inspection in 1983, an area of undermining was located at the southwest corner of the powerhouse and repaired using grout bags as formwork, and then grouting behind the grout bags to simply fill the remaining voids. The area was repaired again in 1996/1997 by first removing the grout bags and then installing reinforcing bars, dowels and grout.

- The stability analysis of the High Rock Dam was subsequently updated to meet the FERC requirements, including stability under probable maximum flood (PMF) loading. The results of the analyses indicated that spillway bays 1-10 required remediation. Remediation of the spillway bays at High Rock consisted of installing 20 multi-strand,

epoxy coated and filled post-tension anchors. Construction activities began in September 1999 and work was completed in 2001.

- The hoist cables for all ten Stoney gates were replaced between September and November 2003. The replacements were made to maintain the gate lifting devices in good condition.

H.13.2 Tuckertown Development

Tuckertown Development was the fourth of the Project developments to be built. The turbines for Units 1, 2 and 3 were put in service in 1962. There have been no upgrades or modifications to the original Units under the existing license. There were no major structural or maintenance activities performed at the Tuckertown Development under the current license term.

H.13.3 Narrows Development

Narrows Development was the first of the Project developments to be built. The turbines for Units 1, 2 and 3 were put in service in 1917, and Unit 4 went on line in 1924. The present runners were installed in Unit 1 in 1988, Unit 2 in 1964, Unit 3 in 1996 and Unit 4 in 2001. The original generators for Units 1 and 2 were installed in 1917. The original generators for Units 3 and 4 were installed in 1923 and 1924, respectively, and rebuilt in 1947 and 1946, respectively. A new generator was installed in Units 1 and 2 in 1964. Units 1 and 2 were rewound and rotor poles reinsulated in 1997. An upgrade of Unit 3 was completed in 1996, and an upgrade of Narrows Unit 4 was completed in 2001 and the upgrade of Narrows Unit 2 is anticipated to be completed in 2008. Other available structural/maintenance records are summarized below:

- The bypass spillway was originally constructed as an open excavation cut through the rock, approximately 115 ft wide, 1,100 ft long, the depth varying with the contour of the hillside. For a distance of approximately 130 ft downstream of the flood gates the bottom and sides of the bypass channel were lined with concrete. During July 1919 high flood waters were discharged through the dam. The flood waters were discharged through the bypass spillway depositing rock and other debris in the main channel below the powerhouse, which affected the operation of the turbines. As a result, a channel was constructed and a crib built so that the discharge from the bypass spillway would be carried further downstream before it merged with the main river stream below the powerhouse. The chute was further extended and extensive repairs were made in 1923 to prevent further erosion and the washing of materials into the river downstream of the powerhouse.

- A rock reef located about 1,200 ft below the powerhouse was removed during 1922. This rock reef also hindered the free flow of water from the tailrace and was thought to affect the turbine efficiency. During subsequent flood events, it was found that the rock crib erected in 1919 was not of sufficient length to provide the necessary protection for keeping wash material and debris from entering the tailrace area. In addition, it was noted that the bottom and sides of the channel excavated in the rock were severally damaged and extensive repairs would be necessary to prevent further erosion. Before this work had begun, a model of the bypass spillway, true to scale, was constructed so that the action of the water could be

observed on the proposed repairs. The repair work consisted of excavating the rock so that a solid foundation of concrete could be placed on the bottom and sides, which had not been originally concreted. Also, floods passing over the east end of the main dam spillway washed out areas of the protecting rock ledge in the river between the toe of the dam and the powerhouse. To prevent further damage in this area an armor coating of concrete was installed. Hardaway Contracting Company was given the contract for this work in July 1923 and the work was completed in 1925.

- During 1925, flood water passing over the main dam spillway washed loose rock into the tailrace area to such an extent that the debris interfered with the efficiency of the turbines. This material was removed from the river by the Hardaway Contracting Company.

- A 2-foot steel extension was installed on the gates in 1918, thereby increasing the height of the gates approximately 2 ft.

- As a result of seepage observed flowing from the bottom of the inter-gallery drains A-1, A-2 and A-3 in gallery "A" within the intake section, an exploratory drilling and grouting program was performed in 1986 to identify and control the seepage. A total of eight holes were drilled from the piers into the concrete to seek out and identify seepage paths, and to permit grout injection for sealing purposes. In addition, surface repairs were carried out within Penstock Nos. 3 and 4, which included the removal of spalled and cracked concrete, the installation of new concrete and the patching of voids at the steel liner transition area. Inter-gallery Drains A-1, A-2, and A-3 were drilled and cleared of obstructions to restore them to useful function.

- The main spillway deck consists of an integral concrete slab and beam support system spanning between spillway piers. The deck over the trash gate section that is adjacent to the intake is 6 inches thick with no support steel. No expansion joints were included in the original design of the spillway deck. Visual inspections showed abrasion of the concrete in an arc on the right pier side of each gate (viewed looking in the downstream direction) along a path which the gates travel when opened. Normal thermal conditions combined with the lack of expansion joints caused the trash gate deck slab, adjacent to the intake, to buckle in the early 1990s. The first four pier caps adjacent to the trash gate deck slab separated from the piers and translated approximately 1 inch towards the intake structure. Full-open gate testing performed in 2001 showed gate binding prior to the full opening at nine of the Tainter gates. A two-phase remediation program was established to allow the Tainter gates to be fully opened. The initial phase of remediation activities included the cutting of one slot in the spillway deck at the right non-overflow section and Pier No. 1, and six sets of slots, one set each in Pier Nos. 5, 7, 11, 15, 19 and 21 in 2002. The initial phase of the work was completed in October 2002. The second phase of the remediation effort involved the remediation of the gates themselves, and was initiated in August 2003 and was completed in early 2004.

H.13.4 Falls Development

Falls Development was the second of the Project developments to be built. The turbines for Units 1 and 2 were put in service in 1919, and Unit 3 went on line in 1922. Since that time, both Units 2 and 3 have required realignment to correct runner clearance problems (runner began to rub against its discharge ring resulting in the need to realign the unit) on about a 10 year cycle. Unit 1 has experienced similar though somewhat less severe runner clearance problems with the initial runner clearance problems surfacing in the mid 1930s. The difficulties associated with the vertical alignment of the units led to extensive rehabilitation efforts. Alignment adjustment was no longer possible for Units 2 and 3 in 1961, and the turbine-generators were removed and upgraded in 1962. A similar replacement/upgrade was performed on Unit 1 in 1981. The rehabilitation of all three units included the removal and replacement of mass concrete from the powerhouse floor down to just below the stay ring for each of the three units. The concrete piers between the units, and the east (downstream) and north (river side) walls remained in place. Following the rehabilitation efforts there has been no significant trends in the runner clearance measurements since the Unit 1 replacement in 1981 and small progressive movement towards the downstream-river corner of the powerhouse at Units 2 and 3 since their replacement in 1961. Subsequent to the major upgrade, the turbine-generator alignments have been less frequent.

Additionally, a 2-foot extension consisting of wooden boards was installed on the gates in 1923, thereby increasing the height of the gates approximately 2 ft. In 1929, the 2-foot wooden extensions were replaced by 2-foot steel extensions. In 1946, the 2-foot steel extensions were increased to 4 ft.

H.14 Summary of Unscheduled Outages Over the Last Five Years

Table H.14-1 presents a summary of unscheduled outages over the last five years, including the cause of the outage, the duration of the outage, and the corrective action taken.

Table H.14-1: Summary of Unscheduled Outages Over the Last Five Years

Generating Unit	Date	Cause	Duration (hours)	Corrective Action
Tuckertown #3	3/2000	Field ground	19.2	Cleaned slip rings
High Rock #1	8/2001	Low governor air pressure	16.0	Replaced leaking air valve
Tuckertown #3	8/2001	Turbine lube flow switch	78.4	Replaced flow switch
Falls #3	8/10/2001	Governor trouble	20.6	Replaced LVDT
Falls #3	9/2/2001	Intake gate operating hoist	315.5	Rebuilt gear boxes
Tuckertown #3	1/16/2003	86E Stator ground	11.1	Tested windings no ground
Narrows #1	1/6/2003	86N Governor trouble	10.6	Repaired governor
Falls #1	2/23/2003	Tree in transmission line	9.5	Removed tree and repaired line
Falls #2	2/23/2003	Tree in transmission line	9.5	Removed tree and repaired line
Falls #3	2/23/2003	Tree in transmission line	10.9	Removed tree and repaired line
Tuckertown #2	5/9/2003	86N governor controller	13.7	Repaired controller processor
Narrows #2	8/28/2003	86E & 86N Breaker bushing field	89.1	Replaced bushing
Falls #2	8/27/2003	86N governor trouble	32.2	Repaired governor
Falls #1	10/28/2003	Governor trouble	23.5	Repaired governor
Tuckertown #3	12/30/2004	Turbine pit sump level high	17.5	Repaired sump pump float
Narrows #3	12/30/2004	DC ground, turbine bearing oil flow	39	Repaired DC lube pump
High Rock #3	4/4/2005	Generator Breaker	12.3	Repaired Gen. Bkr.

H.15 Licensee's Record of Compliance

APGI has an excellent record of compliance with the terms of the existing license. Complaints to FERC alleging non-compliance have all be resolved in APGI's favor.

H.16 Project Actions Affecting the Public

H.16.1 Electricity, Recreation, Relicensing

APGI's operation of the Yadkin Project affects the public in a number of ways. One is that a significant portion of the electricity currently generated by the Project is being sold to utilities that serve the public. Second, the Project reservoirs provide many recreational benefits to the public, as well as, surrounding property owners (operating guides that are designed to allow higher water levels during the summer recreation season, a private access permitting program, etc.), including numerous, well-maintained public recreation facilities on Project waters, which

allow hunting, picnicking, boating access, fishing, swimming, and other water-based recreation. In addition, other similar facilities are owned or managed by surrounding counties, the State of North Carolina, or the USFS. Third, the Project is operated in a manner consistent with APGI's strong environmental stewardship values. For example, for many years, APGI has voluntarily worked with agencies and others to enhance fisheries and wildlife resources. Finally, for its relicensing of the Yadkin Project, APGI chose to use a Communications-Enhanced Process that allowed numerous opportunities for issue identification and open communication with interested parties, including the general public, beyond those offered by the traditional relicensing process.

H.16.2 County Economic Impacts Study

During the initial consultation phase of the relicensing process, APGI was requested to evaluate the relationship of the Project reservoirs to the economies of the surrounding five counties, under current reservoir operations and other alternative water level scenarios. In response to this request, APGI undertook a study titled County Economic Impacts of APGI's Yadkin Project (County Economic Impacts Study[2]) which was carried out in accordance with a study plan that was developed in close consultation with the County Economic Impacts Issue Advisory Group (Appendix H-1).

The overall objective of the County Economic Impacts Study was to document and analyze the relationship of the Project reservoirs to the economies of the surrounding five counties, under current reservoir operations and other alternative water level scenarios. The study also characterized tourism expenditures and opportunities at baseline and under alternative water level scenarios. The study also combined the results of the Recreation Economic Impact Study (see Appendix E-20) with the findings from the County Economic Impacts Study to present a comprehensive report on the impacts of alternative water level scenarios on the counties' economies.

Reservoir Management Scenarios

APGI defined three reservoir management scenarios for High Rock Reservoir to represent the potential range of management options which could be compared to existing reservoir management conditions. Scenario 1 would maintain water levels within 3 ft of full pool year round. Scenario 2 would allow water levels to vary over the same range as they currently do, but would extend the relatively full pool conditions six weeks earlier in the spring and six weeks later in the fall. Scenario 3 would maintain lower water levels during the summer recreation season and would allow water levels to fall farther in the winter than they currently do (see Figure E-9). Table H.16-1 summarizes the impacts of these scenarios on businesses and property values in the two counties adjacent to High Rock Reservoir. The following sections describe how these impacts were estimated.

[2] Heller, Katherine, Laurel Clayton, and Wanda Throneburg. RTI International. 2005. County Economic Impacts of APGI's Yadkin Project Final Report. December 2005. (Appendix H-1)

Table H.16-1: Estimated Impacts of Alternative Water Level Management Scenarios for High Rock Reservoir on Businesses and Property Values in Adjacent Counties

Annual Business Impacts	**Estimated Total Annual Change in Revenues for Directly Affected Businesses**					
	Alternative 1		**Alternative 2**		**Alternative 3**	
	Low	**High**	**Low**	**High**	**Low**	**High**
Total direct impacts	$3,397,000	$6,802,000	$678,000	$3,397,000	-$6,802,000	-$33,964,000
	Estimated Economy-Wide Annual Impacts					
Regional Economic Impacts	**Alternative 1**		**Alternative 2**		**Alternative 3**	
	Low	**High**	**Low**	**High**	**Low**	**High**
Davidson County	$3,475,000	$6,964,000	$695,000	$3,475,000	-$6,964,000	-$34,800,000
Rowan County	$922,000	$1,847,000	$182,000	$922,000	-$1,847,000	-$9,238,000
Five County Region	$4,479,000	$8,883,000	$885,000	$4,443,000	-$8,883,000	-$44,398,000
Property Value Impacts	**Estimated Home Sales Prices at Baseline and Under Alternative Water Level Management Scenarios**					
	Historical	**Alternative 1**	**Alternative 2**	**Alternative 3**		
Distance from shoreline	12' range	3' range	10' range	20' range		
	Rowan County					
Homes <0.05 miles	$136,700	$167,500	$143,500	$109,300		
Homes between 0.05 and 0.5 miles	$137,300	$146,900	$139,400	$128,800		
Homes >0.05 miles	$88,200	$94,300	$89,500	$82,711		
	Davidson County					
Homes <0.05 miles	$150,800	$184,800	$158,400	$120,600		
Homes between 0.05 and 0.5 miles	$129,600	$138,600	$131,600	$121,600		
Homes >0.05 miles	$106,000	$113,400	$107,700	$99,500		
Property Tax Impacts	**Possible Change in Tax Receipts for Homes Within Two Miles of High Rock Reservoir Shoreline**					
	No. of Homes	**Alternative 1**	**Alternative 2**	**Alternative 3**		
Rowan County	2,623	$219,800	$48,100	-$195,800		
Davidson County	1,451	$133,200	$29,800	-$118,200		

Impacts on Reservoir-Related Businesses

Many types of businesses rely to some extent on the Yadkin Project reservoirs for their business. APGI's County Economic Impacts Study (Appendix H-1) looked at an exhaustive list of businesses compiled from a variety of sources, and worked with APGI and others to narrow the list for detailed study to those businesses whose major source of revenue was thought to be related to the reservoirs; the study termed these "Priority A" businesses. The study's authors contacted the businesses for a preliminary interview; then, after the Reservoir Management Scenarios were defined, they contacted them again to ask about the impacts of the water levels specified in the Scenarios. The study used their responses to estimate percentage impacts on revenues; to preserve confidentiality, county-level North American Industry Classification System (NAICS) code data was used as the basis for estimating impacts under "low" and "high" impact measures based on the interview findings.

The study found that most businesses would benefit from Scenarios 1 and 2 and would be hurt by Scenario 3. Impacts on directly affected industries ranged from a gain of more than $6 million in annual industry revenues in Rowan and Davidson counties for high impacts under Scenario 1 to a loss of more than $33 million for high impacts under Scenario 3. Using the U.S. Forest Service's IMpact analysis for PLANning (IMPLAN) regional input-output model to estimate impacts throughout the economy of the five-county region that would result from these direct impacts, the study found that Scenario 1 may increase output in the region by as much as $8.9 million per year under the high impact estimate, Scenario 2 may increase output in the region by as much as $4.4 million per year, and Scenario 3 may reduce output and spending in the region by as much as $44.4 million per year. These region-wide impacts include the direct impacts plus changes in spending by directly affected businesses, plus changes in consumer spending that result from changes in owners' and employees' incomes. While gains or losses for individual businesses could be substantial, overall these totals represent relatively small impacts on the regional economy (at most a gain of less than 0.1 percent or a loss of less than 0.4 percent of the total sales or revenues for businesses in the five-county region.

Impacts on Property Values

To address the question of how the value of residential property close to a reservoir is affected by reservoir water level management, APGI's County Economic Impacts Study (Appendix H-1) used a statistical analysis using the hedonic method. The hedonic method is a multiple regression technique that allows for the isolation of the effect of individual characteristics of a home and its environment on its sale value. The study collected data on water levels, and residential property characteristics and sales values for homes within two miles of the shorelines, for two Yadkin project reservoirs (High Rock and Narrows/Badin) and six others in North Carolina and South Carolina.

The analysis found that proximity to a reservoir enhances sales values. For homes within 0.05 mile of shore, sales prices were more than twice the values for comparable residences elsewhere; the impact of the reservoir declines with distance and is insignificant beyond a half mile from shore. Reservoir management affects the proximity premium, especially for shoreline residences. Using home sales in Rowan County and Davidson County, the study estimated that

Scenario 1 would increase sales prices of Rowan County properties within 0.05 miles of the High Rock Reservoir shore by about $31,000, and homes between 0.05 and 0.5 miles from shore by about $7,000. Scenario 3, on the other hand, is estimated to reduce sales prices of shoreline properties by about $27,000 and to reduce sales prices for other nearby properties by about $5,000. In Davidson County, Scenario 1 is estimated to increase sales prices of properties within 0.05 miles of the High Rock Reservoir shore by about $34,000, and homes between 0.05 and 0.5 miles from the shore would see an increase of $8,000. Scenario 3 would reduce sales prices for shoreline properties by $30,000 and would reduce the sales prices for other nearby properties by about $7,000.

Possible changes in county property tax receipts were estimated by assuming that all the properties within 2 miles of the shoreline were revalued as predicted by the hedonic model, then applying 2004 tax rates to the changed values. If all 2,623 residential properties located in Rowan County within 2 miles of the High Rock Reservoir shoreline experienced the predicted changes in value, under Alternative 1 property tax receipts could increase by nearly $220,000; under Alternative 2, they could increase by about $48,000; and under Alternative 3, they could decline by about $196,000. In Davidson County, if all 1,451 residential properties experienced predicted changes in value, tax receipts could increase by about $133,000 under Alternative 1, increase by about $30,000 under Alternative 2, and could decrease by about $118,000 under Alternative 3. These estimates are rough approximations that assume all properties experience predicted changes in value, that assessments are revised to reflect these changes, and that 2004 tax rates apply.

H.17 Reduced Ownership and Operating Expenses if the Project License were Transferred

If APGI did not receive the new license for the Project, its annual operating costs would be reduced by the amount shown in Exhibit D. In this case, APGI would no longer be responsible for Project operation or paying taxes and administrative fees associated with the Project.

H.18 Annual Fees Paid Under Part I of the Federal Power Act

Since the initial licensing of the Project, APGI has paid annual FERC administrative charges as presented in Table H.18-1.

APGI does not pay fees for the use of federal lands within the Project boundary because there are no federal lands within the Project boundary. There are no Indian lands included within the Project boundary.

Table H.18-1: FERC Annual Administrative Charges[a]

Fiscal Year	FERC Administrative Charge	Other Federal Agencies Administrative Charge[b]	Total Administrative Charge
1994	$145,849	$16,217	$162,066
1995	$369,566	$0	$369,566
1996	$657,244	$0	$657,244
1997	$360,848	$51,117	$411,965
1998	$342,067	$35,449	$377,516
1999	$364,566	$69,592	$434,158
2000	$310,221	$84,034	$394,255
2001	$335,671	$23,844	$359,515
2002	$341,297	$92,106	$433,403
2003	$306,957	$0	$306,957
2004	$677,030	$0	$677,030
2005	$414,735	$0	$414,735

a. All dollars are actual, as of the year identified.
b. There were no known administrative charges paid to other federal agencies.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Alcoa Power Generating, Inc.	)	P-2197-073
	)	
Yadkin Hydroelectric Project	)	Application for New Major License

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES' NOTICE OF INTERVENTION AND ALTERNATIVE MOTION TO INTERVENE

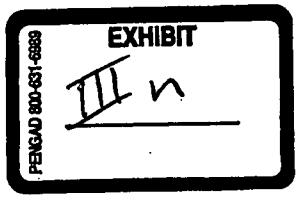
NOW COMES the Department of Environment and Natural Resources of the State of North Carolina ("NC DENR"), through the undersigned counsel, and (i) gives notice of intervention pursuant to Rule 214(a)(2), and (ii) moves in the alternative to intervene under Rule 214(a)(3). 18 C.F.R. § 385.214.

NOTICE OF INTERVENTION

NC DENR gives notice of intervention under Rule 214(a)(2). In support of this notice NC DENR shows the following: The North Carolina Environmental Management Commission ("EMC") has delegated to the Director of the Division of Water Quality authority to issue water quality certifications on behalf of the State of North Carolina ("State"). 33 U.S.C. § 1341; N.C. Gen. Stat. § 143B-282(1)(u); 15A N.C.A.C. 2H.0500. The Division of Water Quality is a division of NC DENR, which is a statutory department of the State. See N.C. Gen. Stat. § 143B-279.1. The Commission has recognized on numerous previous occasions the authority of NC DENR and its Division of Water Quality to certify hydroelectric projects licensed by the Commission under the Federal Power Act.[1]

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[1] E.g., Alcoa Power Generating, Inc., 110 FERC ¶ 61,056, at 61,273, 61,306 (25 Jan. 2005) ("the North Carolina State Division of Water [Quality] . . . issued [a] timely water quality certification[] for the Tapoco Project"); Nantahala Power & Light, 98 FERC ¶ 62,214, at 64,436 (28 March 2002) ("This license is subject to the water quality certification conditions submitted by the North Carolina Department of Environment and Natural Resources under Section 401(a) of the Clean Water Act . . ."); Duke Power Co., 72 FERC ¶ 61,030, at 61,182 (13 July 1995) ("North Carolina [Department of Environment and Natural] Resources issued [a] water quality certification for the Spencer Mountain Project").



NC DENR submits that this project requires a water quality certification.[2] Therefore, NC DENR has authority to intervene as of right pursuant to Rule 214(a)(2).

ALTERNATIVE MOTION TO INTERVENE

In the alternative, NC DENR moves the Commission, pursuant to Rule 214(a)(3), to allow NC DENR to intervene. In support of this alternative motion, NC DENR shows the following:

I. GROUNDS FOR INTERVENTION

A. NC DENR Has a Right to Participate in this Proceeding

As stated above, NC DENR has a right to participate in this proceeding by virtue of its authority to certify federally-licensed projects pursuant to section 401 of the Clean Water Act. Rule 214(b)(2)(i).

B. NC DENR Has a Paramount Interest in the Waters of the State Which May Be Directly Affected by the Outcome of this Proceeding

NC DENR is a statutory department of the State of North Carolina. N.C. Gen. Stat. § 143B-279.1.

> It is hereby declared to be the public policy of this State to provide for the conservation of its water and air resources. Furthermore, it is the intent of the General Assembly ... to achieve and to maintain for the citizens of the State a total environment of superior quality.
>
> * * *
>
> It is the public policy of the State to maintain, protect, and enhance water quality within North Carolina.
>
> * * *
>
> It is the purpose of this Article to create an agency which shall administer a program of water and air pollution control and water resource management. It is the intent of the General Assembly, through the duties and powers

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[2] S. D. Warren Co. v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1843 (2006).

> defined herein, to confer such authority upon the Department of Environment and Natural Resources as shall be necessary to administer a complete program of water and air conservation, pollution abatement and control and to achieve a coordinated effort of pollution abatement and control with other jurisdictions. Standards of water and air purity shall be designed to protect human health, to prevent injury to plant and animal life, to prevent damage to public and private property, to insure the continued enjoyment of the natural attractions of the State, to encourage the expansion of employment opportunities, to provide a permanent foundation for healthy industrial development and to secure for the people of North Carolina, now and in the future, the beneficial uses of these great natural resources.

N.C. Gen. Stat. § 143-211(c). In furtherance of these policies NC DENR retains authority to:[3]

- Provide for the protection of the environment. N.C. Gen. Stat. § 143B-279.2.
- Implement the federal Clean Water Act by developing and applying water quality standards and issuing National Pollutant Discharge Elimination System Permits. N.C. Gen. Stat. §§ 143-214.1, 143-215.1 and 143B-282, and 33 U.S.C. §§ 1313 and 1342.
- Certify compliance of federally licensed activities with State law pursuant to section 401 of the Clean Water Act. N.C. Gen. Stat. § 143B-282, 15A N.C.A.C. 2H. 0500 and 33 U.S.C. § 1341.
- Manage water quality at the basinwide level and cooperate in local watershed protection. N.C. Gen. Stat. §§ 143-214.5 and 143-215.8B.
- Investigate the need for and affects of interbasin water transfers and make recommendations regarding approval of such transfers. N.C. Gen. Stat. § 143-215.22I.
- Investigate conditions of localized water depletion and make recommendations regarding regulations to coordinate, conserve, and apportion available supplies. N.C. Gen. Stat. § 143-215.11 et seq.

[3] The duties of NC DENR exist by virtue of express legislative mandate, delegation from the EMC, and as NC DENR's function as staff to the EMC. See N.C. Gen. Stat. § 143-215.3.

- Coordinate statewide water supply planning by providing technical assistance to local government for development of local water supply plans and developing a state water supply plan. N.C. Gen. Stat. § 143-355.

- Assist in the development of rules for conservation of water during drought by, among other things, evaluating current water conservation measures and making recommendations regarding those measures. 2002 N.C. Sess. L. 167.

- Investigate fish kills. N.C. Gen. Stat. §§ 143B-279.7, 143B-282 and 143-215.3.

These authorities are merely representative. See, generally, e.g., N.C. Gen. Stat. ch. 143, art. 21; and ch. 143B, art. 7. In essence, NC DENR, in coordination with the EMC and the North Carolina Wildlife Resources Commission, retains broad authority and responsibility regarding water quality and natural resource issues. In addition, the State retains title to the beds of navigable waters and the navigable waters themselves are a public resource.[4]

The operation of this project may change the quantity and quality of fish habitat in the river, alter the chemical and physical properties of the river, affect the recreational opportunities in the river, affect submerged lands to which the State retains title, *etc.* Certainly, these outcomes will affect the implementation NC DENR's regulatory and other statutory authorities on behalf of the public, and its ability to carry out its legal mandates. See Rule 214(b)(2)(ii).

C. NC DENR's Participation in this Proceeding Is in the Public Interest

The mandates discussed above uniquely position NC DENR to oversee and manage water resources affected by this proceeding. As a governmental agency with broad

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[4] E.g., Shepard's Point Land Co. v. Atlantic Hotel, 132 N.C. 517, 44 S.E. 39 (1903); State v. Narrows Island Club, 100 N.C. 477, 5 S.E. 411 (1888).

jurisdiction over public waters, NC DENR is well positioned to balance the interests of various users of this public resource. In the exercise of its authority, NC DENR often must resolve conflicts with regard to competing uses and pressures on water resources. See, e.g., N.C. Gen. Stat. § 143-214.1. The experienced and technically expert staff of NC DENR periodically monitors the status of the waters affected by this proceeding, including the operations of the project. NC DENR's mandate requires it to coordinate all of the information it receives in order to render advice, provide assistance, and make determinations regarding the best overall use of this limited resource. Therefore, the participation by NC DENR in this proceeding is in the public interest. See Rule 214(b)(2)(iii).

II. NC DENR SUPPORTS SETTLEMENT CONSISTENT WITH THE TERMS OF THE AGREEMENT IN PRINCIPLE AND ISSUANCE OF A LICENSE THAT ADOPTS THE LICENSE ARTICLES THAT THE PARTIES WILL PROPOSE IN THE SETTLEMENT AGREEMENT

NC DENR, the licensee, and many other interested stakeholders, including federal, State, tribal, and local government, local business and non-governmental organizations, have prepared a good faith Agreement in Principle ("AIP") to address the substantive matters involved in this proceeding. The parties intend to execute a settlement agreement that is consistent with and incorporates the substantive provisions of the AIP. The agreement will include proposed license articles that the parties will recommend should govern the relationship between the Commission and the licensee over the course of the new license, and other obligations and agreements to govern the interaction of the parties during that time as well. NC DENR supports the AIP and urges the Commission, when the agreement is

executed and filed, to approve the agreement in full and incorporate the proposed license articles into the new license for the project. Also, NC DENR intends to issue a water quality certification pursuant to section 401 of the Clean Water Act with conditions to be incorporated into the new license.

III. CONCLUSION

For all of the foregoing reasons, to the extent NC DENR is not eligible for intervention pursuant to Rule 214(a)(2), NC DENR respectfully requests that the Commission grant this Alternative Motion to Intervene pursuant to Rule 214(a)(3).

CONTACT INFORMATION

Please direct all communications to:

Marc Bernstein
Special Deputy Attorney General
N.C. Department of Justice
9001 Mail Service Center
Raleigh, NC 27699-9001
Telephone: (919) 716-6600
Facsimile: (919) 716-6767
E mail: mbernstein@ncdoj.gov

Steven Reed
Division of Water Resources
N.C. Department of Environment
and Natural Resources
1611 Mail Service Center
Raleigh, NC 27699-1611
Telephone: (919) 715-5424
Facsimile: (919) 733-3558
E mail: Steven.Reed@ncmail.net

Respectfully submitted, this the 22nd day of February 2007.

ROY COOPER
ATTORNEY GENERAL

By: /s/ Marc Bernstein

Marc Bernstein
Special Deputy Attorney General
N.C. Department of Justice
9001 Mail Service Center
Raleigh, NC 27699-9001
Telephone: (919) 716-6600
Facsimile: (919) 716-6767
E mail: mbernstein@ncdoj.gov
Attorney for NC DENR

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

This the 22nd day of February 2007.

/s/ Marc Bernstein
Marc Bernstein
Special Deputy Attorney General
N.C. Department of Justice
9001 Mail Service Center
Raleigh, NC 27699-9001
Telephone: (919) 716-6600

$ PAID

07-0812 U 2

DWQ ID: _____

FERC 401 WATER QUALITY CERTIFICATION APPLICATION

FOR EXISTING FERC PERMITS

* SEND SEVEN (7) COPIES AND THE APPROPRIATE FEE (SEE ITEM # 16)* OF THIS APPLICATION TO:

THE NC DIVISION OF WATER QUALITY
ATTN: TODD ST. JOHN
4401 REEDY CREEK ROAD
RALEIGH, NC 27607.
(PLEASE PRINT OR TYPE.)

1. OWNER'S NAME: Alcoa Power Generating Inc.
2. MAILING ADDRESS: 300 North Hall Rd. (MS-T1521) Alcoa, TN 37701-2516

   PROJECT NAME: Yadkin Hydroelectric Project (FERC No. 2197)

   CITY: Badin STATE: NC ZIP CODE: 28009

   PROJECT LOCATION ADDRESS (IF DIFFERENT FROM MAILING ADDRESS ABOVE):
   P.O. Box 576, Badin, NC 28009
3. TELEPHONE NUMBER: (WORK) (865) 977-3334
4. IF APPLICABLE: AGENT'S NAME OR RESPONSIBLE CORPORATE OFFICIAL, ADDRESS, PHONE NUMBER:
   Mark Gross, V.P. of APGI, P.O. Box 576, Highway 740, Badin, NC 28009
5. LOCATION PROJECT (PROVIDE A MAP, INCLUDING A COPY OF USGS TOPOGRAPHIC MAP OR AERIAL PHOTOGRAPHY WITH SCALE):
   COUNTY: Davie, Davidson, Rowan, Montgomery and Stanly NEAREST TOWN: Badin

   SPECIFIC LOCATION (INCLUDE ROAD NUMBERS, LANDMARKS, ECT.) See attached License Application (LA) Ex. G for Project maps or see D.O. Plan Fig. 1
6. IMPACTED STREAM/RIVER: Yadkin River RIVER BASIN: Yadkin/Pee-Dee River Basin
   CURRENT DIVISION OF WATER QUALITY (DWQ) CLASSIFICATION: Variable (Class C or WS): See LA Ex. E App. E.1. Section 2.5
7. (a) IS THE PROJECT LOCATED WITHIN A NORTH CAROLINA DIVISION OF COASTAL MANAGEMENT AREA OF ENVIRONMENTAL CONCERN (AEC)? YES ☐ NO ☒

   (b) IF THE PROJECT IS LOCATED WITHIN A COASTAL COUNTY (SEE PAGE 7 FOR LIST OF COASTAL COUNTIES), WHAT IS THE LAND USE PLAN (LUP) DESIGNATION? _____

RECEIVED
MAY 8 2008
DENR - WATER QUALITY
WETLANDS AND STORMWATER BRANCH

PENGAD 800-631-6989

EXHIBIT
III D

8. (a) ARE ADDITIONAL PERMIT REQUESTS EXPECTED FOR THIS PROPERTY IN THE FUTURE? YES ☐ NO ☒ IF YES, DESCRIBE ANTICIPATED WORK:

9. (a) ESTIMATED TOTAL NUMBERS OF ACRES IN PROJECT: 23,000

10. PROVIDE AN APPROPRIATE ENVIRONMENTAL DOCUMENT. THE DOCUMENT SHOULD ADDRESS:
   (a) DATA SHOWING THAT A 7Q10 MINIMUM FLOW WILL BE PROVIDED
   (b) A COST BENEFIT ANALYSIS OF THE PROJECT SHOWING WHY THE PROJECT IS STILL NECESSARY
   (c) DESCRIPTION OF LENGTH OF BYPASS REACH (IF ANY) AND MEASURES TO PROVIDE FLOW TO THE REACH IN LOW FLOW CONDITIONS.
   (d) MEASURES PLANNED OR TAKEN TO MAINTAIN DOWNSTREAM WATER QUALITY SUCH AS ADEQUATE DISSOLVED OXYGEN.

   See attached LA & Relicensing Settlement Agreement

11. WHAT IS THE SIZE OF THE WATERSHED 4400 sq miles WHAT IS THE FULL-POND SURFACE AREA? 23,000 acres

12. YOU ARE REQUIRED TO CONTACT THE US FISH AND WILDLIFE SERVICE AND/OR NATIONAL MARINE FISHERIES SERVICE REGARDING THE PRESENCE OF ANY FEDERALLY LISTED OR PROPOSED FOR LISTING ENDANGERED OR THREATENED SPECIES OR CRITICAL HABITAT IN THE PERMIT AREA THAT MAY BE AFFECTED BY THE PROPOSED PROJECT. DATE CONTACTED:
   Periodic consultation 2002-2007

13. YOU ARE REQUIRED TO CONTACT THE STATE HISTORIC PRESERVATION OFFICER. DATE CONTACTED: Periodic Consultation 2002-2007

   (SHPO) REGARDING THE PRESENCE OF HISTORIC PROPERTIES IN THE PERMIT AREA WHICH MAY BE AFFECTED BY THE PROPOSED PROJECT. DATE CONTACTED: Same as above, and see LA Ex. E Apps E-16, 17 & 25.

14. DOES THE PROJECT INVOLVE AN EXPENDITURE OF PUBLIC FUNDS OR THE USE OF PUBLIC (STATE) LAND? YES ☐ NO ☒ (IF NO, GO TO 15).

   (a) IF YES, DOES THE PROJECT REQUIRE PREPARATION OF AN ENVIRONMENTAL DOCUMENT PURSUANT TO THE REQUIREMENTS OF THE NORTH CAROLINA ENVIRONMENTAL POLICY ACT? YES ☐ NO ☐

   (b) IF YES, HAS THE DOCUMENT BEEN REVIEWED THROUGH THE NORTH CAROLINA DEPARTMENT OF ADMINISTRATION STATE CLEARINGHOUSE YES ☐ NO ☐
   IF ANSWER 17b IS YES, THEN SUBMIT APPROPRIATE DOCUMENTATION FROM THE STATE CLEARINGHOUSE WITH THE NORTH CAROLINA ENVIRONMENTAL POLICY ACT.
   QUESTIONS REGARDING THE STATE CLEARINGHOUSE REVIEW PROCESS SHOULD BE DIRECTED TO MS. CHRYS BAGGETT, DIRECTOR STATE CLEARINGHOUSE, NORTH CAROLINA DEPARTMENT OF ADMINISTRATION, 116 WEST JONES STREET, RALEIGH, NORTH CAROLINA 27603-8003, TELEPHONE (919) 733-6369.

15. THE FOLLOWING ITEMS SHOULD BE INCLUDED WITH THIS APPLICATION IF PROPOSED ACTIVITY INVOLVES THE DISCHARGE OF EXCAVATED OF FILL MATERIAL INTO WETLANDS: N/A

(a) WETLAND DELINEATION MAP SHOWING ALL WETLANDS, STREAMS, LAKES, AND PONDS ON THE PROPERTY (FOR NATIONWIDE PERMIT NUMBERS 14, 18, 21, 26, 29, AND 38). ALL STREAM (INTERMITTENT AND PERMANENT) ON THE PROPERTY MUST BE SHOWN ON THE MAP. MAP SCALES SHOULD BE 1 INCH EQUALS 50 FEET OF 1 INCH EQUALS 100 FEET OF THEIR EQUIVALENT.
(b) IF AVAILABLE, REPRESENTATIVE PHOTOGRAPH OF WETLANDS TO BE IMPACTED BY PROJECT.
(c) IF DELINEATION WAS PERFORMED BY A CONSULTANT, INCLUDE ALL DATA SHEETS RELEVANT TO THE PLACEMENT OF THE DELINEATION LINE.
(d) ATTACH A COPY OF THE STORMWATER MANAGEMENT PLAN IF REQUIRED.
(e) WHAT IS LAND USE OF SURROUNDING PROPERTY? _____

(f) IF APPLICABLE, WHAT IS PROPOSED METHOD OF SEWAGE DISPOSAL?

16. CERTIFICATION FEE

(a) IF THE IMPACT IS LESS THAN 1 ACRE OF WETLAND OR WATER AND LESS THAN 150 FEET OF STREAM, PLEASE ENCLOSE A CHECK FOR $200.00 MADE OUT TO THE NORTH CAROLINA DIVISION OF WATER QUALITY.
(b) IF THE IMPACT EXCEEDS EITHER OR BOTH OF THE LEVELS IN (a), PLEASE ENCLOSE A CHECK FOR $475.00 MADE OUT TO THE NORTH CAROLINA DIVISION OF WATER QUALITY. (check attached)

17. PUBLIC NOTICE IS REQUIRED FOR ALL FERC PROJECTS. PLEASE NOTE THAT THE APPLICANT IS REQUIRED TO REIMBURSE THE DIVISION OF WATER QUALITY FOR THE COSTS ASSOCIATED WITH THE PLACEMENT OF THE PUBLIC NOTICE. REFERENCE 15A NCAC 2H .0503 (f).

SIGNED AND DATED AGENT AUTHORIZATION LETTER, IF APPLICABLE.
NOTE: WETLANDS OR WATERS OF THE US MAY NOT BE IMPACTED PRIOR TO:

1. ISSUANCE OF A SECTION 404 CORPS OF ENGINEERS PERMIT,
2. EITHER THE ISSUANCE OR WAIVER OF A 401 DIVISION OF WATER QUALITY CERTIFICATION, AND
3. (IN THE TWENTY COASTAL COUNTIES ONLY), A LETTER FROM THE NORTH CAROLINA DIVISION OF COASTAL MANAGEMENT STATING THE PROPOSED ACTIVITY IS CONSISTENT WITH THE NORTH CAROLINA COASTAL MANAGEMENT PROGRAM,

5-8-08

OWNER'S/AGENT'S SIGNATURE DATE

(AGENT'S SIGNATURE VALID ONLY IF AUTHORIZATION LETTER FROM THE OWNER IS PROVIDED).

ROY COOPER
ATTORNEY GENERAL

State of North Carolina
Department of Justice
9001 Mail Service Center
RALEIGH, NORTH CAROLINA
27699-9001

REPLY TO:
I. FAISON HICKS
SERVICE TO STATE AGENCIES
PHONE: (919) 716-6800
FAX: (919) 716-6755
E-MAIL: FHICKS@NCDOJ.GOV

September 18, 2009

TRANSMITTED AND FILED
BY ELECTRONIC MEANS

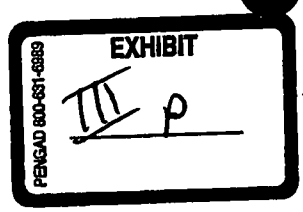
The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

Re: Alcoa Power Generating, Inc. – Yadkin Hydroelectric (Relicensing) Project, Project No. 2197-073 (Application for a New Major License)

Dear Secretary Bose:

Enclosed herewith for filing in the above-referenced proceeding is a pleading entitled "Motion of the State of North Carolina to Present Evidence in Support of its Request that the Commission Recommend Federal Recapture, Comments and Evidence of the State in Support of its Opposition to the Issuance of a New License to Alcoa, Motion of the State to Supplement Final Environmental Impact Statement, Request of the State for Waivers of Commission Regulations, if Necessary, and Motion of the State for Oral Argument Before the Full Commission," with supporting Exhibits 1-5.

Exhibit 1 to the State's Motion, entitled "The State of North Carolina's 21st Century Plan for the Use of the Yadkin River Resources," has two volumes: (i) volume 1, which is the text of the State's 21st Century Plan; and (ii) volume 2, entitled "Attachments to the State of North Carolina's 21st Century Plan for the Use of the Yadkin River Resources."



I am simultaneously serving these papers on all persons listed on the official service list compiled by your office in this matter, either by electronic means or by First-Class United States Mail.

On behalf of the State of North Carolina and Governor Perdue, I would be grateful if you would file these pleadings and Exhibits with the Commission.

Should you have any questions concerning this letter, its enclosures or anything else, please let me know. My contact information is as follows:

I. Faison Hicks
Special Deputy Attorney General
North Carolina Department of Justice
114 West Edenton Street
Office Number 227C
Raleigh, North Carolina 27603
Post Office Box 629
Raleigh, North Carolina 27602-0629
Telephone Number: 919/716-6629
Facsimile Number: 919/716-6757
Cellular Telephone Number: 704/277-8635
E-Mail Address: fhicks@ncdoj.gov

Thank you very much for your assistance in this matter.

Very truly yours,



I. Faison Hicks
Special Deputy Attorney General
Counsel for the State of North Carolina

Enclosures

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Alcoa Power Generating, Inc.	)	Project No. 2197-073
	)	Yadkin Hydroelectric Project
	)	Application for a New Major License

MOTION OF THE STATE OF NORTH CAROLINA TO PRESENT EVIDENCE IN SUPPORT OF ITS REQUEST THAT THE COMMISSION RECOMMEND FEDERAL RECAPTURE, COMMENTS AND EVIDENCE OF THE STATE IN SUPPORT OF ITS OPPOSITION TO THE ISSUANCE OF A NEW LICENSE TO ALCOA, MOTION OF THE STATE TO SUPPLEMENT FINAL ENVIRONMENTAL IMPACT STATEMENT, REQUEST OF THE STATE FOR WAIVERS OF COMMISSION REGULATIONS, IF NECESSARY, AND MOTION OF THE STATE FOR ORAL ARGUMENT BEFORE THE FULL COMMISSION

NOW COMES the State of North Carolina, by and through its Governor, Beverly Eaves Perdue (the "State"), pursuant to Rule 212 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission (the "Commission" or "FERC"), 18 C.F.R. § 385.212, and Sections 4(e), 7(c), 10, 14, 15 and 309 of the Federal Power Act, 16 U.S.C. §§ 797(e), 800(c), 803, 807, 808 and 825h, and moves the Commission to receive the State's Comments and evidence in support of its request that the Commission recommend federal recapture in this relicensing proceeding and, after consideration of the State's Comments and evidence, that the Commission recommend to the United States Congress that the Yadkin Hydroelectric Project, FERC Project No. 2197, now subject to relicensing, be proposed for recapture by the United States Government, and for transfer thereafter, following the enactment by Congress of appropriate legislation, to the State of

North Carolina for the public purposes described below, upon the terms proposed below for such transfer.

In conjunction with its request for recommended recapture, the State further moves the Commission to deny the new license application of Alcoa Power Generating, Inc. ("Alcoa" or "APGI") and requests that this pleading and the other materials of the State in support of this pleading which have been attached hereto accompany any recommendation made by the Commission for recapture, pursuant to Section 7(c) of the Federal Power Act. In addition, the State requests that the Commission supplement the Final Environmental Impact Statement ("Final EIS") issued by the Commission's Staff for the Yadkin Project in April 2008[1] to address the State's evidence and to evaluate the recapture alternative proposed by the State.

The State of North Carolina further requests that the Commission schedule the State's recapture request for oral argument before the full Commission. The provisions of law applicable to recapture, though of long standing in the Federal Power Act, have not been recently interpreted. The State therefore believes that the Commission will benefit from oral argument because of the significant public policy considerations raised in the State's submission regarding the future management of the State's natural resources and the State's urgent concern that the Commission give adequate and proper weight to the importance of water resources to the State, especially the waters of the Yadkin River.

[1] Final Environmental Impact Statement for the Yadkin and Yadkin-Pee Dee River Projects, Project Nos. 2197-073, 2206-030, at 35 (Apr. 18, 2008), *available at* eLibrary Accession No. 20080418-4000.

Summary of the State's Argument

The State's argument in opposition to Alcoa's relicensing application is simple and straightforward. It is grounded in basic principles of fairness and common sense. Alcoa's initial license in 1958 was premised on an agreement among Alcoa, the State and the Commission. Alcoa told the State and the Commission that, in exchange for a full, prospective 50-year license, it would use the flows of the Yadkin River to create a significant public benefit for the people of North Carolina by creating and maintaining nearly 1,000 jobs near the Project site. The State supported Alcoa's license application on this basis and the Commission awarded Alcoa a 50-year license that was predicated on the significant public interest in the creation and maintenance of these jobs.

Alcoa did not keep this commitment. It has not provided 1,000 jobs to the people of the Yadkin River Basin for decades. In 2007, Alcoa permanently shut down the Aluminum smelting plant in Badin that was the source of these jobs. Its relicensing application and proposal do not contemplate using the flows of the Yadkin River to restore these jobs or to create any other comparable benefit for the people of North Carolina.

In addition to Alcoa's failure to maintain these jobs or to propose to the Commission that it will otherwise use the Yadkin River in the next 50 years to create another, comparable public benefit, the evidence suggests that Alcoa has failed in its statutory duty to be a good steward and trustee of the Yadkin River, Badin Lake and the health and safety of the people who live nearby. Recent evidence points to conduct by Alcoa that substantially polluted and damaged the land, the Yadkin River and Badin Lake. This record also suggests that, out of concern for its own economic interests,

Alcoa has shown little interest in expediting the actual clean-up of its pollution, which today remains largely unremediated.

Furthermore, the circumstances in North Carolina and with Alcoa have dramatically changed since 1958. Today, the State's citizens look to the State to help foster the types of conditions that will promote the creation of jobs to replace those lost, as well as new jobs, as the State's population grows. The current worldwide economic recession, which has cut deeply into the State's employment levels, makes it even more imperative that the State fully harness North Carolina's natural and other resources to stimulate and support economic development, growth and job creation. As the State considers the next 50-year license period and how best to plan for the needs of its people in terms of jobs, economic development, growth, recreation and a better quality of life, it is essential that the State be able to provide individuals, communities and industries with adequate and dependable supplies of clean consumptive water. These and other significant changes in the State's and Alcoa's situation today as compared to 1958 compel a reevaluation of which entity should be the licensee for the Yadkin Project.

The question is: how are these vital public interests to be met? The answer seems clear. The Federal Power Act provides the State with the tools to assist it in meeting its responsibilities and in responding to these public interest challenges. The Commission itself is charged in this proceeding with licensing only that project that is *best adapted* to a comprehensive plan for the use of the Yadkin River to serve the public interest. North Carolina's 21st Century Plan for the Use of the Yadkin River Resources, Exh. 1 hereto (the "21st Century Plan" or the "Plan") addresses these public interest responsibilities and

challenges. It is the best adapted proposal to serve the public interest in the broadest sense. Alcoa has offered nothing comparable.

I. THE RELEVANT FACTS

The State's opposition to Alcoa's relicensing application and its request for a recapture recommendation arise out of: (A) Alcoa's failure to keep its promise to the State that, in exchange for the State's support of Alcoa's initial license application, it would create, maintain and provide North Carolina's people with significant socio-economic benefits; (B) Alcoa's failure as a trustee and steward of the Yadkin River, Badin Lake and the health and safety of the people who live nearby; and (C) significant changes which have occurred since 1958 and which the State believes require a completely new analysis of how best to use the flows of the Yadkin River as a public resource – in particular, the need for clean, accessible water supplies has become critical to the State's continued growth, development and prosperity. Each of these is explained below.

A.

The Loss of the Economic Development Public Benefit That Was the Underlying Basis for the Commission's Decision to Grant Alcoa the Initial License and Alcoa's Failure in its Current Relicensing Proposal to Provide Any Comparable Substitute Economic Development Benefit to the Public

At the heart of the original licensing of the Yadkin Project was the promise made by Alcoa to the State that Alcoa would modernize and increase the size of its Badin

smelting plant, thereby creating and thereafter maintaining nearly 1,000 jobs at the plant. *See Carolina Aluminum Co.*, 19 F.P.C. at 715-16, 719, 722, 730.[2]

The State's support of Alcoa's license application was predicated upon this promise. *See* Exh. 2, ¶ 4, at 2-3; Exh. 1, Attach. II, ¶ 8, at 7-8. At that time, the State recited in its Petition to Intervene that, unless the Federal Power Commission issued a 50-year license to Alcoa, "aluminum production at Badin would . . . be reduced and, possibly, ultimately abandoned." Exh. 2, ¶ 4, at 3. The State said essentially the same thing in its brief filed in the original license proceeding. Exh. 1, Attach. II, ¶ 8, at 7-8. The State further noted that such an event "would strike a serious blow to the economy of Stanly County and to the State . . . as a whole." Exh. 2 at 3. Alcoa made the same arguments to the Commission. Exh. 3 at 17-27 (Br. of Carolina Aluminum Co. in *Carolina Aluminum Co.*, Project Nos. 2197, 2206 (Nov. 18, 1957) ("1957 Alcoa Brief")).

Much of the evidence presented by Alcoa during the original license proceedings was designed to persuade the Commission to grant Alcoa a 50-year license, beginning in 1957, for all of its Yadkin River power plants (three such power plants were then in existence)[3], rather than just for the new (fourth) power plant that Alcoa then proposed to construct. The Commission initially balked at issuing a full 50-year license for the three hydropower plants that had been constructed and had been operating without a federal license since the 1920s. *Carolina Aluminum Co.*, 17 F.P.C. 493, 495 (1957). It was eventually persuaded to issue such a license to Alcoa for all four dams and power plants, however, after Alcoa made it clear to the Commission, the State and the local community

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[2] *See, e.g.*, Finding and Conclusion No. (20) in *Carolina Aluminum Co.*, 19 F.P.C. at 722.

[3] *See* 19 F.P.C. at 704, where the Commission noted that the license for the three constructed plants had been backdated to January 1, 1947, resulting in a license just short of a 40-year term.

that it would not modernize the existing Badin smelting plant unless it obtained this 50-year license for all four power plants. *See Carolina Aluminum Co.*, 19 F.P.C. at 707. *See also* Exh. 3, 1957 Alcoa Brief, at 23 (stating that new investment in the Badin smelting works would "not be effectuated" absent a 50-year license term).

A decision by Alcoa to shut down the smelting plant at this point would have left approximately 1,000 workers without jobs which, at that time, paid high wages. The State was concerned that many long-time Alcoa employees, many of whom had worked for Alcoa for over 25 years, would be left without employment. Exh. 1, Attach. II, ¶ 8, at 7-8.

In support of its argument that it needed a 50-year license, Alcoa noted:

> . . . the overwhelming public support of the project indicated by the intervention of the State of North Carolina, the strong recommendation of the State's two Senators, interested Congressmen and local governmental officials, and the telegrams, letters, petitions and statements from civic groups, organizations and individuals in North Carolina and, *particularly, those directly affected by the economy of the Badin area.*
>
> As to both objections to the Yadkin Project, it is obvious that the answer lies in the proper balancing of interests. The question is whether the full potential of the affected reach of the Yadkin River should be developed to sustain *an industry which is the life blood of this section of North Carolina* or whether this valuable resource should be wasted in favor of small and relatively unaffected private interests or private aims and desires.

Exh. 3, 1957 Alcoa Brief, at 12 (emphasis supplied) (footnote omitted).

The State, Alcoa and the Commission all understood that the Badin jobs were the *quid pro quo* for the State's support for Alcoa's application. Indeed, the Commission's Presiding Examiner, whose decision was adopted by the Commission, predicated his

decision granting Alcoa its initial 50-year license on, *inter alia,* Finding and Conclusion number (20), which stated that:

> The Applicant . . . proposes to reconstruct its smelting plant at Badin to increase both its maximum capacity and its firm or continuous smelting capacity in order to increase the usefulness and efficiency of the . . . smelting plant, and such proposed reconstruction is expected to afford continued employment to more than 900 persons in the Badin area.[4]

This was the bargain that Alcoa made with the State, the local community and the Commission. The *quid pro quo* for North Carolina's support of Alcoa's quest for a full prospective 50-year license for all four of its hydro plants was this promise to expand the Badin smelting plant and to create and maintain nearly 1,000 high-paying jobs for North Carolina's citizens. In return, Alcoa received a license of great value.

By the latter part of the twentieth century, however, Alcoa decided to shift its Aluminum smelting operations elsewhere. Thus, it significantly reduced employment at its Badin plant over time and, in early 2007, it shut down this facility altogether. As a result, Alcoa eliminated all but approximately 35 jobs.[5] When it closed its Badin smelting plant, Alcoa offered the people of North Carolina nothing of meaningful value to replace these lost jobs.

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[4] *See Carolina Aluminum Co.,* 19 F.P.C. at 722. In Finding (21), the Presiding Examiner further found that the smelting facilities last about 25 years, and that "full utilization" of the Badin smelting facilities could occur *twice* if a 50-year license were awarded, thus allowing the "continued employment" he referred to in Finding (20). Based on Findings (20), (21) and (22), he concluded that the public interest required that Alcoa be given a 50-year license. *Id.* (Emphasis supplied). This part of the Presiding Examiner's decision demonstrates that the Commission's decision 50 years ago was based on the public interest, as it should be now, and that a key public interest which persuaded the Commission to license Alcoa was its promise of these jobs. Since that time, these jobs have since largely vanished, such that, now, the public interest is no longer supported by licensing Alcoa, but, rather, by recommending recapture and transfer of the license to the State.

[5] It is the State's understanding that these 35 or so jobs are in Alcoa's hydropower business at the Project site.

A study recently conducted by an economic research team from the North Carolina Department of Commerce estimated the scope of the economic loss caused to the people of the State by Alcoa's abandonment of this smelting plant. *See* Exh. 1, Attach. XVIII. Using a hypothetical new plant and available information as its basis, this study found that direct employment at such an Aluminum smelting plant today would range from 160 people (conservative) to 610 people (average); that the plant would foster total employment (that is, direct, indirect and induced employment) ranging from 571 persons (conservative) to 2,176 persons (average); that the plant would engender one-time facility construction employment ranging from 3,352 persons (conservative) to 12,793 persons (average); that capital investment in plant and equipment would range from $232,506,550 to $887,400,000; that the total annual output of the plant (the value of all goods and services produced and sold each year) would range from $223,503,653 (conservative) to $852,107,661 (average); that the plant's one-time, construction-related total output would range from $368,000,000 (conservative) to $1.5 billion (average); that the plant's total "value added" economic impact annually would range from $71,711,276 (conservative) to $273,399,238 (average); and that the plant's total annual recurring employee compensation (including wages and salaries, benefits, health and life insurance, retirement payments and all other non-cash compensation) would range from $32,000,000 (conservative) to $122,000,000 (average). *Id.* at 3-5.

These numbers are significant, and the total economic development impact on the State of such a facility, whether built along the lines of the conservative or the average model, would be tremendous. Multiplying this economic impact over an entire 50-year license period increases the economic impact of such a facility manyfold.

Conversely, the closure of such a plant would have an equally tremendous negative economic impact on the State, the Yadkin River region and the local community – an impact that can be seen in the numbers summarized above. This was the negative economic impact that Badin, Stanly County, the Yadkin River Basin and the State sustained when Alcoa closed its Badin smelting plant.

In 1957, Alcoa was well aware of the negative economic effect that failing to maintain these jobs would have on the State and the local economy. In words that would prove all too prophetic, Alcoa stated to the Commission that:

> The . . . discontinuance or diminution of [Carolina Aluminum Company's] smelting operation at Badin . . . , would entail losses to the community in taxes and employment that would be *disastrous* in their effect.

Exh. 1, Attach. I, ¶ 3, at 2-3 (Motion for Reconsideration and Rescission of Order of Carolina Aluminum Company in *Carolina Aluminum Co.*, Project Nos. 2197, 2206 (Aug. 28, 1957)) (emphasis supplied). With Alcoa's closing of its Badin smelting plant and the consequent loss of these jobs, this disastrous effect has now come to pass.

After almost 100 years of operations on the Yadkin River, Alcoa now plans to use the flows of the Yadkin River, which belong to the public, solely to generate private profit for itself and its shareholders. Unlike North Carolina's investor-owned public utilities, which are subject to extensive regulation by the North Carolina Utilities Commission, have substantial business operations located here in North Carolina, employ thousands of North Carolinians and have a long-standing tradition of actively working in close partnership with the State in economic development and other productive activities, Alcoa employs very few North Carolinians, is not subject to utilities regulation by North

Carolina and now sends and will continue to send the profits it realizes from its use of the Yadkin River's flows to its shareholders and corporate operations in other states.[6]

B.

Alcoa's Failure as the Project's Trustee and Steward to Protect the Public Interest in the Environment and the Health and Safety of the Public

During its initial license term, Alcoa's actions and decisions as the Government-licensed trustee and steward of Badin Lake, the Yadkin River and the health and safety of the people who live in this area raise serious concerns about whether it is able to fulfill its stewardship and trustee role when its own economic interests conflict with its duty to act as a steward of the public interest. This conflict and Alcoa's failure to act as a public steward can be seen in evidence only recently surfacing as to: (1) the extent of the environmental pollution of Badin Lake and Alcoa's subsequent resistance to the efforts of State officials to warn the public of the resulting dangers; and (2) Alcoa's inaction with respect to the dissolved Oxygen problems caused by its own operation of the Project.

1. Alcoa's Pollution of Badin Lake and its Lawsuit Against the North Carolina Division of Public Health

For almost 100 years, Alcoa has conducted industrial operations at its Badin smelting plant. During this period, it produced large amounts of hazardous wastes.[7]

[6] In fact, Alcoa has even announced that it intends to use the profits generated from the Yadkin River for investment in other countries. *See The New York Times* article on the agreement reached between Iceland and Alcoa, in which Iceland is reported to have agreed to construct a $3 billion hydropower project, the output of which will be used to supply a $1 billion new Aluminum smelting plant being constructed by Alcoa in that country. This article can be accessed via the following link: http://www.nytimes.com/2003/03/19/business/alcoa-and-iceland-agree-on-smelter-project.html.

[7] For example, Alcoa's smelting plant produced approximately 4,800 tons per year of spent pot linings, a hazardous waste containing cyanide complexes. *See, e.g.*, Scoping Comments of Stanly County and Request for Additional Information from Licensee at 9 (Feb. 26, 2007), *available at* eLibrary Accession No. 20070305-0171 ("Stanly County Scoping Comments"). The State has significant additional documentation on industrial pollutants and environmental contamination associated with the Badin

Some of these wastes were discharged into the air and water of Stanly County. Others were stored on or buried in the land.[8] This environmental contamination of the Badin smelting plant site and the official disposal sites used by Alcoa in Stanly County, all of which are located on or near the shore of Badin Lake, have been documented by Alcoa's own environmental consultants.[9]

In addition, Alcoa used, *inter alia*, PCBs and materials containing polycyclic aromatic hydrocarbons ("PAHs") in its smelting and hydropower operations.[10] It has acknowledged its use of PCBs and certain of its PCB disposal practices, describing one waste disposal operation referred to as the "Aerated Lagoon," where hazardous wastes were stored or disposed of. *See* Stanly County Scoping Comments, Attach. C (at T4-2, T4-4).

Today, Badin Lake is contaminated with both PCBs and PAHs, *see, e.g.*, the RETEC Report and the Matthews Memorandum, substances suspected of causing cancer in human beings. The presence of these potentially cancer-causing contaminants in the

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smelting works, and is prepared to make these materials available to the Commission if it would assist the Commission's record and decision in this matter.

[8] These other hazardous waste materials included, *inter alia*, spent pot linings and other refuse from Alcoa's smelting operations, which were stored or buried underground. "Spent pot lining" waste ("SPL") is a hazardous waste regulated under the Resource Conservation and Recovery Act. This waste contains cyanide and fluoride generated from cleaning and refurbishing the smelting pots. *See* Stanly County Scoping Comments, Attach. C (at T4-2).

[9] *See generally* Stanly County Scoping Comments at 9-21. *See also* MFG, Inc., *RCRA Facility Investigation Report* (March 2001), attached to letter from Frances E. Francis to Kimberly D. Bose, Sec'y, FERC, *Alcoa Power Generating, Inc.*, Project No. 2197-073 (Dec. 10, 2007), *available at* eLibrary Accession No. 20071210-5059; Stanly County Board of Commissioners, public meeting (Feb. 5, 2007), video file, which provides an overview of: (i) the contamination that Alcoa acknowledges at the Badin smelting plant and official dumping locations; and (ii) the steps that Alcoa has taken as of February 2007 to address this contamination, Attach. B to the Stanly County Scoping Comments.

[10] *See, e.g.*, Exh. 4, at E-1, "Characterization of the Toxicity and Bioavailability of Polycyclic Aromatic Hydrocarbons in Aquatic Sediments from Badin Lake," prepared for Alcoa by The RETEC Group, Inc., (Feb. 16, 2007) (the "RETEC Report"); Exh. 5, at 1-3, Memorandum from Dexter Matthews, Dir., DENR Waste Mgmt. Div., to Rob McDaniel, DENR Hazardous Waste Section, Re: PCBs in Badin Lake, at 1-3 (Feb. 25, 2009) (the "Matthews Memorandum").

sediments of the Lake gives rise to the concern, *inter alia*, that these toxins will be absorbed by micro-organisms living in the Lake or its sediments and that these micro-organisms will then enter the Lake's food chain, a process that could ultimately result in high concentrations of these toxic substances in fish that are caught and eaten by human beings. The State is particularly concerned that people with limited budgets living in the area around Badin Lake may be especially vulnerable to health risks because they supplement their diet by catching and eating the fish from the Lake.

And indeed, in 2008, when a sample of fish was taken from Badin Lake and the tissues of these fish were analyzed, PCBs were found in the tissues of a number of them.[11] These PCB-contaminated fish included, among other species which are routinely caught and eaten by humans, Largemouth Bass and Catfish.[12]

The preliminary findings of one study recently conducted for Stanly County by John H. Rodgers, Jr., Ph.D., a Clemson University professor,[13] suggest that the source of the PCBs found in the tissues of these Badin Lake fish is the PCB-laden sediment at the bottom of the Lake, including those PCB-laden sediments lying in the southwest quadrant of the Lake, directly adjacent to the old Alcoa smelting plant and resulting from Alcoa's past industrial activities. *See* Exh. 1, Attach. VI.[14]

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[11] *See, e.g.*, Exh. 1, Attach. VI (Review of PCB Data From Badin Lake, John H. Rodgers, Jr., Ph.D. (July 27, 2009)).

[12] *See* North Carolina Department of Health and Human Services, Division of Public Health, Epidemiology Fish Consumption Advisory, Badin Lake in Stanly County and Montgomery County (Feb. 11, 2009), http://www.epi.state.nc.us/epi/fish/current.html (the "DPH Fish Consumption Advisory").

[13] Professor Rodgers is the Director of the Ecotoxicology Program in the Department of Forestry and Natural Resources at Clemson University. *See* Exh. 1, Attach. VII (*Curriculum Vitae* of John H. Rodgers, Jr., Ph.D.).

[14] The Matthews Memorandum, dated February 25, 2009, summarized the (DENR) Division of Waste Management's review of the data then available on the source of the PCBs found in the tissues of the fish caught in Badin Lake. Exh. 5 at 1. This data review concluded that: "[w]ith the information available at this time, considering the vast array of PCB congeners found present in the fish tissue, it would be

After the 2008 fish tissue studies found PCBs in the tissues of Badin Lake fish, the North Carolina Department of Health and Human Services and its Division of Public Health announced a fish consumption advisory for Badin Lake in February 2009.[15] This advisory was intended to warn all pregnant women and certain other at-risk people not to eat Badin Lake Largemouth Bass or Catfish at all and to warn others to eat no more than limited quantities of these PCB-contaminated fish.

In addition, the fish consumption advisory noted that the Division of Public Health would be posting signs at Badin Lake warning people of the health hazards of eating these fish. DPH Fish Consumption Advisory; *see also* Exh. 1, Attach. VIII. Alcoa informed the Division of Public Health that it disagreed with the Division's findings.

When the Division of Public Health announced its fish consumption advisory in February 2009 and stated that it intended to post warning signs at Badin Lake concerning the health hazards of eating Largemouth Bass and Catfish, Alcoa was waiting for DENR to make its decision on Alcoa's application for a Clean Water Act Section 401 Certification, a document that Alcoa was required to have in order to qualify for a new 50-year license for the Project.

At this critically important moment for Alcoa, it was presented with a dilemma arising from its dual role as: (i) a for-profit business enterprise that wanted DENR to issue it a Clean Water Act Section 401 Certification so that it could obtain a new 50-year

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extremely difficult and unlikely to conclude that these congeners are due solely from one source with any degree of confidence." *Id.* at 3. The DWM data review that is reported in the Matthews Memorandum was conducted five months or more before Dr. Rodgers' PCB congener analysis and his reported preliminary conclusion that the source of the PCBs found in the tissues of the Badin Lake fish is Alcoa's industrial pollution of the Lake. *Compare* Exh. 1, Attach. VI, with Exh. 5, the Matthews Memorandum. As noted elsewhere in this pleading, Dr. Rodgers' report has recently been provided to DENR and is now being reviewed by that agency.

[15] *See* the DPH Fish Consumption Advisory.

license to operate the Project; and (ii) the Government-licensed trustee and steward of the public interest, including the health and safety of the people who live near the Project. Looking to its own economic needs and interests, Alcoa resolved this conflict by acting so as to increase its chances of obtaining the Section 401 Certification and a new 50-year license.

Alcoa thus chose not to cooperate with the Division of Public Health in its efforts to protect the public's health and safety – even if that meant temporarily setting aside any disagreements with the Division over the Division's conclusions. Instead, Alcoa filed a lawsuit *against* the Division of Public Health in the Office of Administrative Hearings (the "OAH") challenging the Division's legal right to take this protective action.[16]

Alcoa justified its lawsuit by asserting that the Division's actions had "deprived [Alcoa] of *property*" and had "otherwise substantially prejudiced [Alcoa's] rights."[17] Significantly, Alcoa's lawsuit challenged not only the Division's issuance of the fish consumption advisory, but even its proposed posting of signs at Badin Lake to warn local people of the danger of eating these PCB-contaminated fish.[18]

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[16] Alcoa's OAH litigation potentially subjected the Division, in the event it lost this case, to an award of at least a substantial portion of Alcoa's attorneys' fees and court costs, which could include expensive expert witness fees. *See, e.g., Walker v. North Carolina Coastal Res. Comm'n*, 124 N.C. App. 1, 10-12, 476 S.E.2d 138, 144-45 (1996), *rev. denied*, 346 N.C. 185, 486 S.E.2d 220 (1997) (attorneys' fees and court costs expended by prevailing OAH litigant during the Superior Court [and beyond] judicial review stage of the administrative proceedings are awardable under North Carolina law). Despite this chilling effect on the Division of Public Health's planned fish consumption advisory and sign posting plan, the Division proceeded.

[17] Exh. 1, Attach. IX (Petition for a Contested Case Hearing filed by Alcoa with the OAH, No. 09-DHR-2505, filed Apr. 9, 2009) (emphasis supplied).

[18] *See id.*, Exh. 1, Attach. IX at 1 of 4, where Alcoa stated: "[b]y virtue of the [Division of Public Health's] issuance of the Advisory *and the posting of the Advisory Signs*, and the impacts of those actions as discussed herein, [Alcoa] is an aggrieved person . . . because the Advisory *and Advisory Signs* directly and indirectly affect [Alcoa] in its property and has [sic] otherwise substantially prejudiced [Alcoa's] rights" (emphasis supplied).

Alcoa's OAH Petition strongly hints at the fact that Alcoa was itself keenly aware of its own conflict of interest between its public trust responsibilities and its narrow economic interests. Thus, in what appears to have been an all-out attempt by Alcoa to find and identify *some* public interest basis for opposing the Division of Public Health's efforts to protect the health and safety of people living near the Project, Alcoa seized upon what it claimed was the public's interest in being able to swim and fish in Badin Lake without having to worry about the health-related dangers of doing so. Exh. 1, Attach. IX, at 1 of 4.[19]

But the last two pages of the four-page, single space attachment to Alcoa's OAH Petition suggest that Alcoa was motivated by different considerations and provide evidence of Alcoa's conflict of interest. In this portion of Alcoa's OAH Petition, it complained about "[m]isimpressions of the quality of the Badin Lake environment created as a result of the issuance of the Advisory and [the] posting of the Advisory Signs." *Id.* at 3 of 4. Alcoa's Petition added that:

> [T]he Advisory and the Advisory Signs . . . also threaten to have an adverse impact on future decision-making processes involving Badin Lake and Dam. For example, [Alcoa] is in the process of seeking a long-term renewal of the FERC License ("FERC Renewal"). The issuance of the FERC Renewal is conditioned upon [Alcoa] receiving a Water Quality Certificate for Project discharges, including discharges from Badin Lake, under Section 401 of the Clean Water Act ("401 Certification"). In order for [Alcoa] to receive the FERC Renewal, [DENR's] Division of Water Quality ("DWQ") . . . must either issue or deny the 401 Certification by May 7, 2009 . . . .
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[19] Specifically, Alcoa's OAH Petition stated that its purpose in filing this lawsuit was to protect "the public's ability to fully utilize the recreational benefits of Badin Lake without undue concern." Exh. 1, Attach. IX, at 1 of 4.

> [Alcoa's] timely receipt of the 401 Certification is important to [Alcoa's] receipt of the ultimate long-term FERC Renewal . . . .

Id.

On May 7, 2009, DENR issued the Section 401 Certification to Alcoa (albeit with significant conditions). Exh. 1, Attach. XI.[20] Having achieved this key business objective, Alcoa hastened to end this episode, which must by this time have become a public relations embarrassment to Alcoa. Despite its concern that the DPH Fish Consumption Advisory might interfere with the ability of people to swim and fish in the Lake without undue concern for their health, Alcoa entered into negotiations with the Division of Public Health as a result of which it negotiated and consented to an Order staying this OAH lawsuit pending the resolution of the other ongoing and related cases in the OAH dealing with the issuance by DENR of the Section 401 Certification.[21]

2. Alcoa's Failure as the Project Licensee to Take Those Steps Necessary to Deal With the Dissolved Oxygen Problems in the Yadkin River Caused by its Operation of the Project

Alcoa's own filings with the Commission show that it has failed to take those steps necessary to deal with dissolved Oxygen deficiencies in the Yadkin River that were caused, in whole or in part, by its operation of the Project. In 1999, Alcoa filed an application to amend its Project license to obtain authorization to perform major maintenance and install equipment upgrades at eight of the existing, older hydroelectric

[20] DENR issued the Section 401 Certification to Alcoa several months before the study conducted for Stanly County by Dr. John H. Rodgers, Jr. was completed or made available to DENR and at a time when no studies existed demonstrating or suggesting that the PCBs in the Badin Lake sediments were or might be moving up the Lake's food chain into the Lake's fish.

[21] Exh. 1, Attach. X (OAH Order Granting Motion to Amend Scheduling, *Alcoa Power Generating, Inc. v. North Carolina Dep't of Health & Human Servs. and its Div. of Pub. Health*, No. 09-DHR-2505 (July 27, 2009)).

generating units located at the powerhouses for three of the four developments that are part of the Project (High Rock, Narrows and the Falls). When completed, this maintenance and upgrade project would: (1) enable the hydroelectric units to generate more electricity; and (2) improve the dissolved Oxygen ("DO") content of the water flowing between the reservoirs and dams of the Yadkin system.[22] Alcoa proposed to complete this work before its Project license expired in April 2008.

DENR was concerned during this time frame with the DO content of the water, which violated State water quality standards during several months of the year.[23] Thus, DENR wanted Alcoa to make these DO-related equipment upgrades, as did the United States Environmental Protection Agency ("EPA").[24] Nevertheless, it is unclear under the law whether a state environmental agency such as DENR may actually require a FERC licensee such as Alcoa to perform equipment upgrades like these on its Project during the Project's license term except when the licensee is seeking to modify its existing license, obtain a new license or obtain a Clean Water Act Section 401 Certification.

The Commission approved Alcoa's amendment application in 2000, but it did so subject to a condition (Article 39) providing that, if necessary to comply with the State's water quality standards, Alcoa should be prepared "to develop and implement measures

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[22] When Alcoa submitted the application to amend its license, it declared that its then-current federal license to operate the Project "contemplated that the four developments [of the Project] would continue to serve the electricity needs of Alcoa's Badin plant, a role that continues to this day." Application for Commission Authorization to Amend Project License, *Yadkin, Inc.*, Project No. 2197-038, at 2 (Dec. 3, 1999), *available* at eLibrary Accession No. 19991207-0101. This was just seven years before Alcoa's complete shutdown of the Badin plant.

[23] Exh. 1, Attach. XIII (Fish and Aquatics IAG and Water Quality IAG Joint Meeting, Final Meeting Summary, at 2-5 (Feb. 3, 2004), *reprinted in* Alcoa Power Generating, Inc., Application for License, Project No. 2197, vol. V (C) (2006)). *See also* Environmental Assessment issued May 2000, *attached to Yadkin, Inc.*, 92 F.E.R.C. ¶ 62,084, at 64,106 (Table 3), 108 (2000).

[24] *Id.*; Letter from Heinz J. Mueller, Chief, NEPA Program Office, Office of Policy & Mgmt., U.S. EPA, to Kimberly D. Bose, Sec'y, FERC (Dec. 10, 2007), *available at* eLibrary Accession No. 20071210-5069.

to improve DO, either through structural or operational modifications at the project." *Yadkin, Inc.*, 92 F.E.R.C. ¶ 62,084, at 64,101 (2000).

Furthermore, the Commission warned Alcoa that:

> [Alcoa] is on notice that a licensee has no guarantee that the costs it decides to incur will be recovered, or even that a new license will be issued. [Alcoa] assumes the risk that our balancing of all public interest considerations on relicensing will result in requirements that may diminish the economic value of the project. It is for [Alcoa] to take these risks into account in determining whether undertaking the proposed upgrades is a reasonable business decision.

Id. at 64,100-01 (footnotes omitted).

When the Commission conditionally approved Alcoa's license amendment application in 2000, there were eight years left on Alcoa's initial license to operate the Project. The Commission's DO condition (Article 39) and its warning to Alcoa that it might not be relicensed or otherwise enabled to recover its upgrade costs presented Alcoa with another conflict between its statutory role as trustee and steward of the Yadkin River and its economic interests in maximizing profits.

Again, Alcoa's response to this conflict was dictated by its economic interests, not the public interest. By 2001, Alcoa had completed work on one unit at the Narrows plant (Narrows Unit 4) and a DO improvement resulted; however, although it was clear that the discharges from all four Project developments still did not meet State water quality standards for DO during several months of the year,[25] Alcoa decided to postpone the refurbishment of the remaining seven units.[26]

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[25] *Id.*

[26] Exh. 1, Attach. XIII (Fish and Aquatics IAG and Water Quality IAG Joint Meeting, Final Meeting Summary at 3-5 (Feb. 3, 2004), *reprinted in* Alcoa Power Generating, Inc., Application for License, Project No. 2197, vol. V (C) (2006)). An Alcoa representative explained that "the economics of the planned upgrades were stalled when capital dried up . . . ." *Id.* at 3.

In March 2006, Alcoa announced that it would complete this work at only two of the eight units before its license expired in 2008. One month later, in April 2006, Alcoa stated as part of its relicensing application that it would refurbish the six remaining units, as well as units at the Tuckertown development,[27] only during its anticipated *next* license term.

The economic benefits to Alcoa of its postponement decision following the Commission's conditional license amendment approval are obvious. Among other things, Alcoa avoided the financial risk that it might resolve the long-standing DO problem but then not receive a new license. It also delayed having to spend a significant sum of money on an issue the resolution of which does not contribute to its financial bottom-line or other corporate goals.

The detrimental impact to the public interest of Alcoa's delay in completing the approved facilities is equally obvious, however: (1) the additional renewable energy that would have been generated if the upgrades had been made has been permanently lost; and (2) the River and the State's citizens have been denied the benefits of the improved quality of the water that would have resulted from the installation of the aeration facilities. These benefits are not insubstantial. [28]

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[27] Alcoa had by this time secured DENR's consent to this delay as to the Tuckertown development, but only as to this development.

[28] As Alcoa itself comments in its RSA, Joint Explanatory Statement for the RSA, para. 7.6.1:

> The improved DO concentrations in the Project tailwaters that will be achieved as a result of the proposed DO enhancements will have many significant benefits. Increasing tailwater DO conditions will certainly improve habitat conditions for invertebrates, including mussels, and fish, which in turn should produce better recreational fisheries in these tailwaters.

Since April 2006, Alcoa has even further delayed the implementation of any equipment upgrades designed to resolve the DO problems caused by its operation of the Project.[29] In addition, despite the fact that DENR issued Alcoa a Section 401 Certification the effectiveness of which was conditioned upon, *inter alia,* Alcoa posting a performance bond to ensure that it could afford to install this DO-related equipment,[30] Alcoa has never posted this bond. Instead, Alcoa filed a lawsuit against DENR in the OAH challenging DENR's legal right to impose this requirement on Alcoa.[31]

[29] For example, under the latest Alcoa schedule as presented in its RSA, there are further delays, as the monitoring and enforcement of the State's clean water standards would not become effective until after *all* the DO enhancement equipment and measures have been completed and have become operational (under Alcoa's relicensing application schedule, they are not due to be completed until 8 years after the license is issued, which would be 2017 if the license were issued this year), and there have been two more years of monitoring (which would move the timeline back to 2019). Exh. 1, Attach. XIV, RSA, para. 2.2.4. Even then, Alcoa has an additional year after notification that it has not met the State's DO standards in the preceding two years provided for consultation and to file a plan to correct the situation. *Id.* Thus, sometime in 2020 or 2021, over a decade from now, Alcoa should have submitted a plan for DO improvements. The Commission essentially approved most of these upgrades in 2000 – almost 10 years ago. These upgrades should have been completed far earlier, as part of the Project's ongoing maintenance program and consistent with a licensee's obligation to maintain its Project in good, working condition.

[30] *See* Exh. 1, Attach. XI, at 145-46, 150.

[31] Furthermore, Alcoa is now attempting to totally bypass DENR, undercut the OAH litigation process that Alcoa itself initiated in North Carolina to challenge the Section 401 Certification's performance bond requirement and emasculate the Section 401 Certification process that has occurred in this case. Thus, on September 17, 2009, Alcoa filed in this docket a Petition with the Commission for a Declaratory Order finding that DENR's Division of Water Quality waived the State's water quality certification under Section 401(a)(1) of the Clean Water Act by imposing a term in the Section 401 Certification which it issued to Alcoa on May 7, 2009 that required Alcoa to provide the State, *inter alia*, with reasonable financial assurances that these DO upgrades would be installed at its facilities once all of its postponements have finally come to an end. *See* Alcoa's September 17, 2009 Petition for a Declaratory Order, *available at* eLibrary Accession No. 20090917-5101.

C.

Significant Changes in the Circumstances of the State and the Yadkin River Basin Since 1958 Which Require a Completely New Analysis of How Best to Use the Yadkin River Resources Now and in the Next Fifty Years: the State's 21st Century Plan

Significantly changed circumstances in and affecting the State, the Yadkin River Basin and the people of North Carolina since 1958 compel the denial of Alcoa's license application and the recapture of the Project license. In connection with this proceeding and its recapture request, the State has prepared its comprehensive proposal for the use of the Yadkin River, entitled the State's "21st Century Plan for the Use of the Yadkin River Resources." Volume 1, Section I of that Plan at 4-13 (Exh. 1 hereto) demonstrates the almost startling extent of the changed circumstances referred to above. The State here offers a summary of these changed circumstances.

In a nutshell, clean, reliable water resources are essential to the State's economic viability in the future. *See* Exh. 1 at 4-13. According to the North Carolina Division of Water Resources, the State's growing population, combined with severe drought conditions over the last decade, has resulted in a number of water supply problem areas, where water needs exceed supplies.[32]

Consequently, there is a vital public interest in ensuring that the State's government, acting in partnership with local governments, is able to properly plan for water availability and use, administering water management laws and establishing policies that will help to solve the water problems facing the State and its people. *Id.*

[32] Exh. 1 at 4-13 and Attach. III (North Carolina Drought Management Advisory Council Activities Report–2008, North Carolina Division of Water Resources, Department of Environment and Natural Resources, Division of Water Resources, Oct. 1, 2008 (Revised Dec. 17, 2008)).

The State must be able to ensure that backup systems are in place to protect communities in the event of water emergencies. *Id.*

As the effects of global warming become more pronounced over time and as the State's population increases and becomes more urban, the pressure on water supplies will become severe. At the same time, the availability of large reservoirs typically used to serve the needs of urban areas will decline.[33] The State must plan wisely now and secure a greater degree of control over the water supplies within its own borders in order to fulfill its obligation to promote future economic prosperity and to enhance the quality of the lives of its citizens.

Lack of adequate water supplies could curtail entirely the ability of communities and industries to grow and prosper. It could cause industries to close, thus eliminating jobs, and could cause other industries not to locate in North Carolina in the first place. This problem will also negatively impact people's ability to enjoy recreational and aesthetic activities in the State's rivers and lakes. In short, this problem threatens the continued prosperity and quality of life of virtually every citizen of the State, as well as the State's businesses and industries. *Id.* Thus, the public interests at stake here are vital ones.

When, in 1958, the State sought and obtained for its people the economic development *quid pro quo* discussed above, it had a population slightly over 4 million citizens.[34] The State's population is now well over 9.2 million. Exh. 1 at 18. The State's

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[33] The pressure of urbanization and the need for adequate, cleaner water supplies in North Carolina are discussed more fully in Exhibit 1 hereto, particularly at pages 4-7, 11-12, 18-20, 45-46, 52, and Attach. V, which appears in Volume 2 of the State's 21st Century Plan.

[34] In 1950, North Carolina's population was 4,061,929. In 1960, it had grown to 4,556,155. *See* United States Department of Commerce, Economics and Statistics Administration, Bureau of the Census, 1990

population is projected to increase by almost another million people by 2013. *Id.* These millions of North Carolinians need the economic development power of the Yadkin River as never before to enable them to achieve and sustain the kind of economic development, job creation, prosperity and quality of life that all Americans seek.

Of equal significance, the elected leaders of North Carolina and the State's many local communities also realize that we are now rapidly approaching the day when water itself may be more valuable than the electricity that the water can generate. Water is critically needed now by local communities and their surrounding regions for growth, development, jobs and improved life quality – indeed, for the very survival of many of these communities. As North Carolina's population continues to grow, water use experts foresee conflicts between communities, industries, counties, regions and even states[35] over the uses to which the State's available water will be put. *Id.*

The fundamental importance of the Yadkin River Project to the State was dramatically underscored by a record drought that the State and the Yadkin River region experienced in 2007-2008. As a result of this drought, it became apparent to the State that, if Alcoa continued to control the flows along the Yadkin-Pee Dee River system, the State would not have the ability to plan effectively – or to implement its plans – for the urgent water needs of its growing and increasingly urbanized population and its

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Census Population and Housing, North Carolina, 1990 CPH-2-35, *available at* http://www.census.gov/prod/cen1990/cph2/cph-2-35.pdf.

[35] In this regard, note the lawsuit filed by the State of South Carolina against the State of North Carolina in the United States Supreme Court over what South Carolina claims is North Carolina's action in allegedly taking more than its share of the water of the Catawba River. This lawsuit, entitled *South Carolina v. North Carolina*, No. 138 (Original Jurisdiction of the Supreme Court), was filed on June 7, 2007 by the Attorney General of the State of South Carolina, has been referred to a master and is now on-going.

increasingly higher tech industries. Exh. 1, at 4-7, 11-12, 18-20, 45-46, and Attachs. V, XVII.[36]

Many of the mitigation measures necessary to deal with drought, including assuring that the State has both the resources and the plans in place to deal promptly with emergencies, require long-term planning, coordination among many entities and the construction of new facilities. *See, e.g.,* Exh. 1 at 3-7 and Attach. III (North Carolina Drought Management Advisory Council Activities Report-2008, issued Oct. 1, 2008 (revised Dec. 18, 2008), by DENR, Division of Water Resources).

The planning needed to deal with these water availability problems and the public's need for assurance that adequate supplies of water will be available in the future will be made more practicable and effective if the State is permitted to gain a meaningful degree of control over the waters of the Yadkin River, one of the State's largest river systems. *Id.* at 5-6. This increased level of control would give the State the ability to act quickly and effectively when action is required by further changed circumstances, such as a drought, further population growth and other changes. *Id.* at 6. It would also provide stability and greater certainty to companies and individuals on an issue that is of crucial importance to everyone. *Id.*

The rapidly changing situation in North Carolina affecting the State's ability to provide adequate supplies of clean water is one that, absent effective planning and the

[36] Significantly, as the State's 21st Century Plan observes, the State has very few opportunities left to develop reservoirs to meet the public's current and future needs for clean water, as most available reservoir sites in the State have already been developed. *See, e.g.,* Exh. 1, Attach. V at 46 (*Water for Electricity and Public Water Supply in the Yadkin River Basin* (Aug. 26, 2009), by David H. Moreau, Ph.D.). This circumstance makes it even more challenging for the State to be able to provide for the most pressing needs of its citizens as regards available water supplies and demonstrates why the public interest in North Carolina requires that the State be given more meaningful control over this large waterway running through the heart of the State.

State's practical ability to exercise meaningful control over the Yadkin River, could threaten the people of North Carolina with dire future consequences. The pace of these changes will accelerate over the next 50 years. Furthermore, the problems associated with water availability and use will almost certainly be made even more complex and challenging by global climate change. The next licensee of the Project will have to make day-to-day decisions about water use and the dynamics of this water-supply-versus-water-demand dilemma. Therefore, the party licensed to conduct the Project for the next 50 years must be an entity that can be trusted to act in the public interest, not merely its own narrow economic interests. *See id.* at 4-7.

II. THE LAW APPLICABLE TO THIS PROCEEDING

A.

The Legal Standard Under Sections 7(c) and 10(a) of the Federal Power Act that is Applicable to and Controlling of the Issues Presented in This Proceeding – Optimization of the Public Interest in the Broadest Sense

In presenting what would become Section 7(c) of the Federal Power Act to Congress, the Commission recommended that the standard to be applied in relicensing should be the standard of Section 10(a) of the Federal Power Act, which it understood

> to call for optimum development and accommodation, where a conflict arises, in terms of resource values including: water quality control; flood control; recreation and aesthetic considerations; fish and wildlife conservation and enhancement; protection of improvements along the reservoir shore line; drinking water and other domestic, municipal and industrial uses; irrigation requirements; optimum power development and coordination with other systems in light of regional power needs; hydraulic coordination with other projects on the stream; and navigation.

Letter from Lee C. White, Chairman, FPC, to the Honorable Hubert H. Humphrey, President of the Senate, 113 Cong. Rec. 26,186-87 (Sept. 20, 1967).

When the Federal Power Act was amended in 1986, Congress recognized that "[t]he Commission and the courts have held the Section 10(a) standard to be [a] *broad public interest* standard, requiring consideration of *all* factors affecting the public interest." H.R. Rep. No. 99-507 at 12 (1986), *reprinted in* U.S.C.C.A.N. 2496, 2499 (emphasis supplied) (internal citation omitted).

Importantly, Congress explained that it intended Section 10(a) to provide the Commission with the flexibility to weigh different public interest factors differently on a case-by-case basis, so that "[a]s the public interest *changes over time*, the Commission's considerations under the [S]ection 10(a) standard likewise change, encompassing new criteria or reevaluating the weight given established criteria." *Id.* (Emphasis supplied).

Section 10(a) does not present "an exclusive list of values FERC must evaluate and address," but rather "highlights the steps the Commission must take to inform itself regarding the needs and uses of the river in question." H.R. Rep. No. 99-934 at 22 (1986), *reprinted in* U.S.C.C.A.N. 2537, 2539.

The key to the Commission's determination of a license application is thus always the public interest. The Commission is required to make an independent, *de novo* assessment of whether the applicant's proposal is best adapted to serve the public interest. The ultimate question in such a *de novo* assessment is which final proposal is best adapted to serve the public interest, taking into consideration on an equitable basis both non-power and power development values. *Id.* at 10. In addition, a license incumbent is not to be given any preference in the relicensing process. *Id.* at 16.

B.

The Authority and Right of the United States Government to Recapture a Project at the Expiration of its License Term are Long-Standing and Settled Principles of Law.

In the first major challenge to the Commission's authority to include a recapture clause in a federal hydroelectric license, the Appalachian Power Company ("AEP") argued that the "capture" clause was confiscatory. *United States v. Appalachian Elec. Power Co.*, 311 U.S. 377, 392 (1940). AEP, a privately owned utility and licensee, described the United States Government's position as arguing that "the right to engage in interstate commerce is a privilege which petitioner may grant, deny or barter upon such terms as it may choose – including the 'taking over' of the property of a citizen as a condition of the grant." *See* Syllabus, summary of respondent's brief to the Court, ¶ 28.

AEP concluded that the Government's argument was "totalitarianism run riot." 311 U.S. at 394. *See* Syllabus, summary of respondent's brief to the Court, ¶ 28. The United States Supreme Court responded as follows:

> The point is that navigable waters are subject to national planning and control in the broad regulation of commerce granted the Federal Government. The license conditions to which objection is made have an obvious relationship to the exercise of the commerce power. Even if there were no such relationship, the plenary power of Congress over navigable waters would empower it to deny the privilege of constructing an obstruction in those waters.

Id. at 426-27.

Furthermore, in describing the nature of the power held by Congress, the Court could not have been more clear as to the scope of this power when it comes to the flowing waters of the United States:

> The Federal Government has domination over the water power inherent in the flowing stream. It is liable to no one for its use or non-use. The flow of a navigable stream is in no sense private property; "that the running water in a great navigable stream is capable of private ownership is inconceivable."

Id. at 424 (quoting *United States v. Chandler-Dunbar Co.*, 229 U.S. 53, 68 (1913)).

The Supreme Court's interpretation in *Appalachian Electric Power Co.* was later echoed in *Louisville Gas & Electric Co. v. Federal Power Commission*, 129 F.2d 126 (1942), where the United States Court of Appeals for the Sixth Circuit held:

> It was assumed, though without decision, in *United States v. Appalachian Electric Power Co.*, ... 311 U.S. 377, ... that "by compulsion of the method of acquisition provided in section 14 of the Power Act and the tendered license, these riparian rights may pass to the United States for less than their value. In our view *this 'is the price which (respondents) must pay to secure the right to maintain their dam.'*" This is from the conclusion reached in *Fox River Paper Co. v. Railroad Commission*, 274 U.S. 651, ... which the court now declares is decisive on the issue of confiscation.

129 F.2d at 134 (emphasis supplied).

Thus, there can be no argument as to the right of the Federal Government to condition the award of hydroelectric licenses on the agreement by the licensee to consent to recapture at the end of the license term, and all major hydroelectric licenses are issued subject to this requirement.[37] Accordingly, the recapture clause contained in Alcoa's 1958 license is constitutional and enforceable.

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[37] In discussing Section 14 of the Federal Power Act, the Commission itself has acknowledged the importance to Congress of the recapture provisions of the Federal Power Act:

> When the Federal Water Power Act (FWPA) was enacted in 1920 after several years of consideration and debate, section[] 14... w[as a] key part[] of the legislation. There was a keen interest by some members of Congress in providing the opportunity for eventual Federal takeover of Commission-licensed power projects, and that became reflected in

C.

The Commission Has the Authority to Recommend Recapture in this Proceeding.

It is equally clear that the Commission has the authority to recommend recapture in this proceeding. Section 7(c) of the Federal Power Act provides:

> Whenever after notice and opportunity for hearing, the Commission determines that the United States should exercise its right upon or after the expiration of any license to take over any project or projects for public purposes, the Commission shall not issue a new license to the original licensee or to a new licensee but shall submit its recommendation to Congress together with such information as it may consider appropriate.

16 U.S.C. § 800(c).

The Commission has implemented this statute in its regulations. 18 C.F.R. §16.15 states:

> Upon receipt of a recommendation from any Federal department or agency, a proposal of any party, or on the Commission's own motion, and after notice and opportunity for hearing, the Commission may determine that a project may be taken over by the United States, issue an order on its findings and recommendations, and forward a copy to Congress.

Thus, the authority of the Commission to independently recommend recapture by the United States is supported by both the Federal Power Act and the Commission's own regulations. This authority is of long standing in federal law. Indeed, in *Lac Courte Oreilles Band of Lake Superior Chippewa Indians v. Federal Power Commission*, 510

> section 14. This section was designed as a vehicle that would permit the Federal government to own, maintain, and operate valuable water-power projects under terms which could make such takeover practical when the circumstances warranted.

FERC Policy Statement, *Project Decommissioning at Relicensing*, 60 Fed. Reg. 339, 341 (Jan. 4, 1995), [1991-1996 Regs. Preambles] F.E.R.C. Stat. & Regs. ¶ 31,011, at 31,223 (1994) (footnote omitted), *available at* eLibrary Accession No. 19941220-0106.

F.2d 198 (D.C. Cir. 1975), the United States Court of Appeals for the District of Columbia Circuit described the effect of the 1968 Act creating Section 7(c) as providing that "the Commission consider recapture and relicensing in a single proceeding." *Id.* at 201 n.7. Thereafter, the court described the proceeding as a "recapture-relicensing proceeding."[38] *Id.* at 202, 204, 206.

III. ARGUMENT

A.

Alcoa's License Application Should Be Denied.

Section 15(a)(2) of the Federal Power Act requires that the Commission rigorously scrutinize any application for a new license for an existing hydroelectric project, so that it can determine that the applicant's proposal is "best adapted to serve the public interest." This is so even where there is only one applicant and that applicant is the current license holder of the existing project. In addition, the legislative history of the 1986 amendments to the Federal Power Act noted explicitly that a relicensing proceeding "does not include an incumbent preference" and that the "existing licensee will not be 'rubber stamped,' but must again prove that its proposal qualifies as 'best adapted' on power and non-power grounds [to serve the public interest]." H.R. Rep. Nos. 99-934 at 26 (Conf. Rep.) and 99-507 at 15 (1986), *reprinted in* U.S.C.C.A.N. 2542-43, 2501-02. *See also* H.R. Rep. No. 99-934 at 33-35 (1986) (Conf. Rep.), *reprinted in* U.S.C.C.A.N. 2549-51 (discussing the importance of a rigorous evaluation of all license applications to ensure that each is best adapted to serve the public interest).

[38] This case involved competing proposals, in which the Tribes were seeking federal recapture of an existing project in which certain of their lands were included within the project boundary, and the applicant was seeking a renewal of its license.

The denial of Alcoa's relicensing application is appropriate and necessary under the circumstances of this case because its relicensing proposal does not qualify as best adapted on power and non-power grounds to serve the public interest. This is true for a host of reasons.

Alcoa itself argued to the Commission that it needed a 50-year license precisely because of the statutory recapture provision, which it said would enable the Federal Government to recapture the Yadkin Project after the end of the license term. *See* Exh. 3, 1957 Alcoa Brief, at 24. But, after obtaining North Carolina's support and, consequently, the Project license in 1958, Alcoa reneged on its promise of economic benefits. Nevertheless, it now seeks a second half-century of monopoly control over the flows of one of North Carolina's most significant rivers. Its proposal to use the Yadkin River for the next 50 years offers no public benefit comparable to the jobs it originally promised, which have now vanished.

As a result, the issue today is just as it was framed by Alcoa a half-century ago – namely, whether Alcoa continues to be entitled to a 50-year license when it is no longer "an industry which is the life blood of this section of North Carolina." *Id.* at 12. Fifty years ago, Alcoa itself made the best argument concerning the consequences of failing to act in the public interest when licensing the flows of the Yadkin River. It argued that the River would be a "valuable resource . . . wasted in favor of small and relatively unaffected private interests or private aims and desires." *Id.*

Furthermore, Section 15(a)(2) of the Federal Power Act specifically requires the Commission to consider the applicant's need for the electricity in the short and long term, as well as the effect on local communities and the applicant's workers of granting a

license to the applicant. Given these standards and the fact that Alcoa has abandoned its Badin smelting plant and devastated the local community economically, there should be no question that Alcoa's application for a new license should be denied.

Moreover, implicit in Alcoa's 1958 acceptance of a license from the United States Government to use a public river for public purposes, as required by the Federal Power Act, was the unspoken promise by Alcoa that it would be a good and responsible steward of the land and the River, and especially of the health and safety of the people who live near the River. But, as discussed above, Alcoa has demonstrated that it has not been a good steward of the land, the River, Badin Lake or, most importantly, the health and safety of the people who live nearby.

Evidence is now emerging that Alcoa's industrial operations contaminated Badin Lake with PCBs, PAHs and other toxic chemical compounds, to say nothing of the pollution it caused to the land surrounding its now defunct smelting plant. When the Division of Public Health announced its intention to issue a fish consumption advisory and to post signs at Badin Lake warning people of the danger of eating the PCB-contaminated fish, its actions threatened to bring unwanted attention to Alcoa's past PCB pollution of Badin Lake, thereby potentially threatening Alcoa's chances of obtaining the Section 401 Certification. Alcoa responded to this public health and safety issue not as a steward or trustee of the public welfare, but rather as a commercial enterprise focused first and foremost on its own economic interests.

In addition, when Alcoa sought in 1999 to amend its Project license so that it could install equipment at the Project that would increase its power generation and was told by the Commission that it could do so, but only if it also installed equipment to

resolve the DO problems that its own operation of the Project was causing, Alcoa balked. Despite its duty to maintain the Project in good working condition and despite its duty to the public and the environment as a Government-licensed trustee and steward, Alcoa's own economic interests dictated its decision to postpone this equipment upgrade project until it could be assured that it would receive a new 50-year license. Alcoa now proposes to install the equipment needed to resolve this environmental problem years *after* the time it hopes to be granted a new license, and it refuses to post a performance bond guaranteeing its ability to complete the work required to resolve this problem, despite DENR's insistence that it do so.

Beyond all this, Alcoa has shown little interest in expediting the actual cleanup of its past substantial environmental damage[39] to the area near its old Badin smelting plant or Badin Lake. This Lake, which remains contaminated with Alcoa's chemical wastes, is an important existing reservoir that could help the State's people to avoid the fate that currently faces Atlanta in the wake of the court's decision in *In re: Tri-State Water Rights Litigation*, No. 3:07-md-01, 2009 U.S. Dist. LEXIS 69895 (MDL) (M.D. Fla. July 17, 2009). *See also, e.g.*, Exh. 1 at 4-7 and Attachs. III and V.

It is vital to the people of the State that the waters of Badin Lake be available for the purpose of providing a ready and dependable source of clean drinking water. Only

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[39] As to the potential scope of its damage to the environment in the area of the Project, Alcoa filed a lawsuit in 1992 in the State of Washington seeking a declaratory judgment that its insurers were required to pay for the environmental damages (including cleanup costs) resulting from Alcoa's Badin smelting plant operations from 1977-1984. *See Aluminum Co. of America v. Aetna Casualty & Surety Co.*, 998 P.2d 856 (Wash. 2000), *reconsideration granted*, No. 67340-3, 2000 Wash. LEXIS 826 (Nov. 1, 2000), *amended*, No. 67340-3, 2000 Wash. LEXIS 827 (Nov. 1, 2000); Second Amended Complaint for Declaratory Judgment of Alcoa, *Aluminum Co. of America v. Aetna Casualty & Surety Co.*, No. 92-2-28065-5 (Apr. 8, 1994), annexed as Attachment D to Stanly County Scoping Comments. In 2003, in case number 92-2-28065-5, Superior Court Judge Sharon Armstrong denied a motion for summary judgment by certain insurers with respect to contamination claims relating to Badin. Stanly County Scoping Comments, Attach. E. Judge Armstrong denied these motions with respect to the Badin pollution because it was one of "only three occurrences that may exceed $50 million in damages." *Id.* at 5.

good environmental stewardship will assure that the Lake will be cleaned up as soon as practicable, so that the Yadkin River Project resources can provide the public with urgently needed clean water. It would not be appropriate to vest control of the Project and this enormously important natural resource for the next 50 years in a licensee for whom environmental stewardship and responsibility are not priorities.

On all too many occasions, Alcoa has shown by its own conduct that, if relicensed for another 50 years, it will continue to operate the Project for its own narrow economic benefit, not the larger public interest.[40] Given Alcoa's track record of broken promises, questionable environmental practices and conflicts between its economic interests and its stewardship duties which Alcoa frequently resolves in favor of its own economic interests, the State believes that Alcoa has essentially disqualified itself as a legitimate candidate for a second 50-year license.

Lastly, as discussed more fully above and in the State's 21st Century Plan, the entire socio-economic, demographic and industrial character of North Carolina has fundamentally and dramatically changed since 1958. The State's population is now more than double what it was then, is still growing at a very rapid rate and is becoming heavily urbanized. As a result of these and yet other changing circumstances, the State's communities and industries need access to water as never before, a trend that will only accelerate in the future. Even with the wisest possible water use planning by the State and the most aggressive development of water-related infrastructure, unless the State is given more meaningful control over this section of the Yadkin River and its reservoirs,

[40] Indeed, absent any real connection to North Carolina other than its use of the peoples' resources for profit, Alcoa has little reason to act in the public interest, unlike other power providers in North Carolina, which are highly integrated into North Carolina's statewide community.

the public interest will almost certainly suffer a serious blow in the future – possibly even the near-term future.

North Carolina will continue to change in these and other ways during the next 50 years. It is precisely because circumstances often do change over the long life of a hydropower license that the Federal Power Act has always provided for and required an independent, *de novo* assessment and reconsideration of where the public interests lie before granting a license. In his now-famous 1908 Rainy River Veto statement, President Theodore Roosevelt spoke directly to this principle:

> The public must retain the control of the great waterways. It is essential that any permit to obstruct them for reasons and on conditions that seem good at the moment should be subject to revision when changed conditions demand. The right reserved by Congress to alter, amend, or repeal is based on this principle: but actual experience of what happens with indeterminate public-utility franchises proves that they are in the vast majority of cases practically perpetual. Each right should be issued to expire on a specified day without further legislative, administrative, or judicial action.
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> * * * * *
>
> Provision should be made for the termination of the grant or privilege at a definite time, leaving to future generations the power or authority to renew or extend the concession in accordance with the conditions which may prevail at that time.

H. R. Rep. No. 99-507 at 11-12 (1986), *reprinted in* U.S.C.C.A.N. 2496, 2498.

Accordingly, Alcoa's relicensing application should be denied.

B.

The Commission Should Grant the State's Recapture Request Under the Circumstances of This Case.

Given that, by virtue of its own conduct as a licensee and a statutory public steward, Alcoa has effectively disqualified itself as a legitimate candidate for a second 50-year license, the issue is who else is qualified to hold the license and to operate the Project in the public interest?

As demonstrated below, the State's proposed 21st Century Plan is the proposal that is best adapted to serve the public interest, in light of Section 10(a)'s mandate that the Commission apply a broad public interest standard requiring consideration of *all* factors affecting the public interest, H.R. Rep. No. 99-507 at 12 (1986), *reprinted in* U.S.C.C.A.N. 2496, 2497-98, and in light of Sections 4(e)'s and 10(a)'s mandate that the Commission give "equal consideration" to a variety of public-interest factors on a case-by-case basis. *Id.* For the reasons discussed below, the Commission should grant the State's request that it recommend federal recapture in these circumstances, with the subsequent transfer of the license to the State, if Congress consents.

1. Why Recapture and Transfer of the Project License to the State Would Result in Licensing the Best Adapted Plan for Most Comprehensively Developing the Yadkin River's Resources in the Public Interest

The State's position on this issue is explained fully in its 21st Century Plan, Exhibit 1 hereto, to which the State refers the Commission. This Plan was prepared on behalf and at the direction of Governor Perdue by the North Carolina Department of Commerce. The Governor is committed to recommending this Plan and any legislation

necessary to implement it to the North Carolina General Assembly in the event the Commission recommends Project recapture.

North Carolina's 21st Century Plan sets out the reasons that the State proposes to acquire the Project facilities and the license at this time. It is the intent of the State, if Congress agrees with a Commission recommendation for federal transfer of the Project and license, to acquire them from the United States Government at the Government's cost, namely, net investment plus severance damages, if any, as defined in the Federal Power Act. 16 U.S.C. § 807.[41] This would mean that the transfer would not cost the United States Government anything.

Furthermore, as more fully explained in the 21st Century Plan, if the State were to acquire the Project and the license, it intends: (1) to maintain the Yadkin Project consistent with principles of sound stewardship and in a prudent and fiscally sound manner, both as to the water resources of the Yadkin River and the Project, as required by the Commission license necessary to operate the Project; (2) to perform major maintenance of the Project that has been deferred by Alcoa and to make timely capital investment in the Project to modernize the Project facilities in order to produce more renewable energy, and also to improve the quality of the water in the Yadkin River; (3) to allocate a portion of the Yadkin Project's revenues to fund ongoing State programs directed at enhancing the economic development infrastructure of the Project area, especially the community college system; (4) to allocate a portion of the Project's

[41] In its April 2006 license application filed with the Commission, Alcoa stated that its statutorily-defined "net investment" in the Yadkin River Project, as reflected in APGI's Fixed Asset Listing as of 2005, was $24,158,903.00. Exhibit D to APGI's April 2006 License Application at D-2.

Although Alcoa also claimed in its Statement of Costs and Financing, Exhibit D to its license application, that it "believes" it would sustain "significant" severance damages in the event of recapture, it was apparently unable to quantify or even estimate any such alleged damages. The State believes that Alcoa would sustain little or no severance damages in the event of recapture.

revenues to fund local improvements for environmental, public health and recreational concerns; (5) to engage in comprehensive planning for the Yadkin River Basin that is necessary to provide for the long-term assurance of an adequate water supply for the State's people; and (6) to otherwise provide a model for interactive coordination between local and State needs. Exh. 1 at 11-13. In this regard, the State refers the Commission to Sections IV - VIII of the 21st Century Plan for a full and complete statement of the details of the State's proposal regarding its future use of the Yadkin River Resources in the event that recapture is ordered by Congress.

Consistent with the requirements of Section 10(a) of the Federal Power Act, the State's purpose in seeking to change the license to the Project at the termination of the existing license is to harness the flows of the Yadkin River so as to serve the interests and better meet the needs of its citizens. As explained above, acquiring the Project license would permit the State to engage in the kind of comprehensive and meaningful river basin planning that is essential to ensure that the State's citizens have adequate water supplies despite a growing population, and to ensure ample water supplies for those industries that now provide employment in the State, as well as those new businesses that must be encouraged to settle in the State to provide new employment.

The Yadkin Project revenues would also further necessary State programs, facilitate better and more effective drought management and ensure the funding of important programs. The State believes that this focus on the local Project area and the improvement of the lives of the people living there, especially those who have lost their jobs at the now-closed Badin smelting works, is a particularly desirable and important

public benefit.[42] These matters are of profound and statutory concern in every relicensing proceeding, and the Commission must address how a relicensing decision and the Project will affect local communities and workers. Federal Power Act § 15(a)(2). Other specific public programs are described at pages 12, 37 and 44-45 of the 21st Century Plan, Exh. 1.[43]

2. A Recapture Recommendation Under the Circumstances of These Proceedings Would be Reasonable and Appropriate

Section 7(c) of the Federal Power Act contemplates that, at relicensing, the Commission will simultaneously examine both relicensing to non-federal entities and recapture by the United States Government. *See Lac Courte Oreilles Band of Lake Superior Chippewa Indians v. FPC*, 510 F.2d 198, 201 n.7 (D.C. Cir. 1975).

North Carolina's argument in favor of recapture is based upon the facts and circumstances of this case, the situation as it exists in North Carolina now and Alcoa's own track record of conduct showing that it has failed in its statutory mandate to use this public waterway not only to serve its own private, commercial interests, but also the public interest.

A recapture recommendation under these circumstances would be anything but a radical or controversial measure. It would be based on federal law that goes back to

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[42] In this regard, the State notes that rates of unemployment are higher in the Yadkin River Basin than elsewhere in the State, as are indicators of poor health, low income and general lack of well-being. Exh. 1 at 37-38.

[43] Nothing contained in the State's Motion and Comments, the State's 21st Century Plan or in any of the State's other submissions should be construed to state or imply in any way that, by virtue of its Motion filed with the Commission or its requests for relief made herein, the State releases Alcoa, any of Alcoa's related affiliates or any other responsible or potentially responsible party(ies) from its liability for any cleanup costs or any other environmental liabilities of any kind; or that the State releases any party(ies) with respect to any such costs or liabilities. The State releases no one from any such liabilities and does not expressly or impliedly waive any of its rights against any person or entity with respect to, *inter alia*, any environmental or environmentally-related issues or liabilities.

1920. Furthermore, in light of Alcoa's broken promise to create and maintain nearly 1,000 jobs in the Badin area and its failure in its current proposal for the use of the Yadkin River to offer the people of North Carolina any significant job-creation or other economic development benefit, a recapture recommendation in this proceeding would merely be based on the time-honored and traditional concept of fairness which says that "a deal is a deal."

In addition, such a recommendation would not create a precedent of general application for the future. In fact, in these circumstances, if the Commission were to allow a licensee to operate a project as a Government-licensed monopolist for 50 years while the licensee repeatedly ignored its statutory mandate regarding the public interest, to say nothing of its promise to provide a significant socio-economic benefit to the State and the local community, and if the Commission were then to relicense that entity for another 50 years, other privately owned licensees would undoubtedly take the Commission's decision to mean that an incumbent licensee will be relicensed almost no matter what its record is. If the State's recapture request presents a danger of a problematic precedent being established, it is the precedent that would be established if the Commission *failed* to recommend recapture in these circumstances.

Moreover, the State's Motion, Comments and evidence, including the 21st Century Plan, show that the State is capable of operating and owning the Yadkin Project and that it will do so in the public interest. Indeed, the State's 21st Century Plan demonstrates that the benefits of recapture and transfer of the license to the State in this case would be tremendous and would fulfill the purposes of the Federal Power Act. By contrast, Alcoa's past conduct and its past stewardship of the Yadkin Project and the

Yadkin River inspire little confidence that the needs of the State's people regarding, *inter alia*, economic development and water resources can be met under its continued trusteeship.

Under these circumstances, recapture is appropriate and essential to the welfare of the people of the Yadkin River Basin and North Carolina.

IV. THE STATE'S RESPONSE TO THE COMMISSION'S APRIL 2008 FINAL ENVIRONMENTAL IMPACT STATEMENT AND ITS DISCUSSION OF FEDERAL RECAPTURE

The Final EIS for the Yadkin Project, which was prepared in April 2008, includes but one paragraph addressing Federal Government recapture:

> 1.4.1 Federal Government Takeover
>
> We do not consider federal takeover to be a reasonable alternative for the Projects. Federal takeover of the Projects would require Congressional approval. While that fact alone would not preclude further consideration of this alternative, there is currently no evidence showing that a federal takeover should be recommended to Congress. No federal agency has suggested that federal takeover would be appropriate, and no federal agency has expressed an interest in operating the Projects.[44]

This statement is no longer valid in light of the evidence proffered by the State in support of its request that the Commission not issue a new license to Alcoa and that it instead recommend federal recapture of the Yadkin Project to Congress. The State is now a party to this proceeding. Its evidence presents new information and a new alternative, none of which were considered in the April 2008 Final EIS. The Commission is obligated to consider the State's request and to evaluate the State's evidence, consistent

[44] Final Environmental Impact Statement for the Yadkin and Yadkin-Pee Dee River Projects, Project Nos. 2197-073, 2206-030, at 35 (Apr. 18, 2008), *available at* eLibrary Accession No. 20080418-4000.

with the standards set out in Sections 4(e), 7(c), 10, 14, and 15 of the Federal Power Act, 16 U.S.C. §§ 797(e), 800(c), 803, 807 and 808.

The National Environmental Policy Act, 42 U.S.C. §§ 4321, *et seq.* ("NEPA"), imposes an additional, separate obligation on the Commission to consider North Carolina's alternative proposal. It does so in its mandate that a federal agency shall "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E). Furthermore, supplemental NEPA documentation "is at times necessary to satisfy the Act's 'action-forcing' purpose." *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 (1989).

Recognizing NEPA's goal of focusing government and public attention on the environmental effects of agency action, the Supreme Court has stated that:

> It would be incongruous with this approach to environmental protection, and with the Act's manifest concern with preventing uninformed action, for the blinders to adverse environmental effects, once unequivocally removed, to be restored prior to the completion of agency action simply because the relevant proposal has received initial approval.

Id. Under NEPA, the Commission must continue to take a "hard look" at the effects of and alternatives to granting a new license to Alcoa, and it must supplement its environmental documentation to reflect that scrutiny.

Accordingly, the State respectfully moves that the Commission supplement the Final EIS issued for the Yadkin Project in April 2008, in order to address the State's evidence and to evaluate the recapture alternative proposed by the State.

V. REQUEST FOR ORAL ARGUMENT TO THE FULL COMMISSION

The State of North Carolina requests that the Commission schedule oral argument before the full Commission on the State's recapture request. The provisions of law applicable to recapture, though of long standing in the Federal Power Act, have not been recently interpreted. The State therefore believes that the Commission will benefit from oral argument because of the significant public policy considerations raised in the State's submission regarding the future management of the State's natural resources and the State's urgent concern that the Commission give adequate and proper weight to the importance of water resources to the State, especially the waters of the Yadkin River.

VI. MOTION FOR ANY NECESSARY WAIVERS

The State believes that its motions and the relief it seeks are well within the Commission's authority under the Federal Power Act and the Commission's regulations. Indeed, as discussed above, the State's recapture request and the evidence and various motions it has submitted in support of that request are completely consistent with both the Federal Power Act and Section 16.15 of the Commission's regulations, 18 C.F.R. §16.15. Furthermore, the legislative history of the Federal Power Act makes clear that Congress expressly intended the Commission to evaluate these issues fully at relicensing.[45]

To the extent that the Commission believes that the State's requests are inconsistent with the Commission's regulations, however, the State seeks any and all waivers necessary, so that the Commission can accept the State's evidence, which is needed to assure a complete and accurate record in these proceedings, and grant the

[45] *See, e.g.*, FERC Policy Statement, *Project Decommissioning at Relicensing*, 60 Fed. Reg. 339, 341 (Jan. 4, 1995), [1991-1996 Regs. Preambles] F.E.R.C. Stat. & Regs. ¶ 31,011, at 31,223 (1994) (footnote omitted), *available at* eLibrary Accession No. 19941220-0106.

State's request that the Commission recommend recapture to Congress and the other relief sought by the State of North Carolina.

VII. CONCLUSION

The entire landscape of North Carolina has fundamentally and dramatically changed since 1958. North Carolina has grown from a State of little more than 4 million people to a State of well over 9 million people – the tenth largest by population in the country. Furthermore, North Carolina is still growing rapidly and is becoming far more urban in its population distribution. The people of North Carolina want what Americans generally want – a higher quality of life for themselves and their children, economic growth and prosperity, good jobs and the benefits that come with economic development, as well as opportunities for enriching recreation and the enjoyment of the natural beauty of their local environment.

In order to ensure that the people of the State have a future in which they can achieve these shared goals, an entity which has the public interest at heart must be licensed and thereby given a meaningful degree of control over one of the State's most valuable natural resources, the Yadkin River and its flows. The Commission's determination of this relicensing matter will decide which entity will be given that control. The Commission's decision will also determine to a very great degree what North Carolina will look like 50 years from now, as well as whether its people are able to achieve their share of the American dream.

What is urgently needed now is a licensee that will make day-to-day decisions about how to use the flows of the Yadkin River for the public benefit, not merely its own narrow economic interests. Alcoa has demonstrated by its past conduct, including its

decision to break its promise to the State to create and then maintain 1,000 high-paying jobs and its decision not to live up to its stewardship obligations under the Federal Power Act, that it is not committed to the interests of the public, but rather is focused on its own narrow economic interests.

As its 21st Century Plan demonstrates, the State is the only party that can and will operate the Project in the public interest. The Plan also demonstrates that the State can and will operate the Project in a capable, open and accountable way, and that it will do so with the primary goal of harnessing this great natural resource for the public interest. Under these circumstances, the Commission should deny Alcoa's relicensing application and should recommend Project recapture to the Congress, so as to protect and further the public interest.

WHEREFORE, for each of the foregoing reasons, the State requests that:

1. the Commission accept, as part of the relicensing record in this proceeding, the State's Motion, Comments and evidence in support of the State's request that the Commission recommend federal recapture in this relicensing proceeding;

2. after consideration of the State's Motion, Comments and evidence, the Commission recommend to the United States Congress that the Yadkin Hydroelectric Project, FERC Project No. 2197, now subject to relicensing, be proposed for recapture by the United States Government, and that it be transferred thereafter, following the enactment of appropriate legislation, to the State of North Carolina for the public purposes described above, upon the terms proposed above for such transfer;

3. in conjunction with the State's request for recommended recapture, the Commission deny Alcoa's new license application;

4. this pleading and the other materials submitted by the State in support of this pleading accompany any recommendation made by the Commission for recapture, pursuant to Section 7(c) of the Federal Power Act;

5. the Commission supplement the Final Environmental Impact Statement issued by the Commission's staff in April 2008 to address the State's evidence and to evaluate the recapture alternative proposed by the State;

6. the Commission schedule the State's recapture request for oral argument before the full Commission; and

7. the Commission grant the State such other and further relief as it may deem just and proper.

Attached to this pleading and submitted herewith are true and correct copies of:

a. the Petition to Intervene of the State of North Carolina in *Carolina Aluminum Co.*, Project Nos. 2197, 2206 (Oct. 8, 1957) (Exh. 2);

b. the Brief of Carolina Aluminum Company in *Carolina Aluminum Co.*, Project Nos. 2197, 2206 (Nov. 18, 1957) (Exh. 3);

c. that document entitled "Characterization of the Toxicity and Bioavailability of Polycyclic Aromatic Hydrocarbons in Aquatic Sediments from Badin Lake," prepared for Alcoa by The RETEC Group, Inc. (Feb. 16, 2007) (Exh. 4); and

d. the Memorandum from Dexter Matthews, Dir., DENR Waste Mgmt. Div., to Rob McDaniel, DENR Hazardous Waste Section, Re: PCBs in Badin Lake (Feb. 25, 2009) (Exh. 5).

Also submitted along with this pleading as Exhibit 1 is the State of North Carolina's 21st Century Plan for the Use of the Yadkin River Resources, Volume 1, and

the Attachments to the State of North Carolina's 21st Century Plan for the Use of the Yadkin River Resources, Volume 2, which the State requests that the Commission receive for filing along with this pleading and the documents attached to this pleading as Exhibits 2-5.

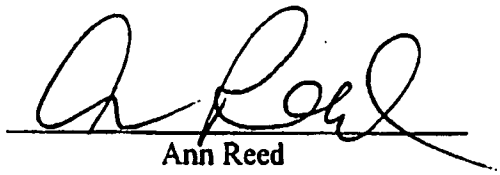
Respectfully submitted this 18th day of September 2009.

ROY COOPER
ATTORNEY GENERAL

By: _____

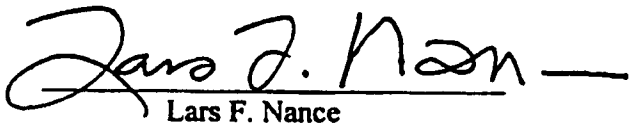
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CERTIFICATE OF SERVICE

This is to certify that, on the 18th day of September 2009, I caused a copy of the foregoing to be duly served on each person designated on the official service list compiled by the Secretary in this proceeding.



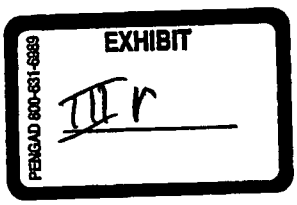
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STATE OF NORTH CAROLINA	)	
COUNTY OF FORSYTH	)	
	)	
	)	
Yadkin Riverkeeper, Inc., Petitioner,	)	**AFFIDAVIT**
	)	**OF**
	)	**DEAN NAUJOKS**
	)	
	)	
	)	
	)	

COMES NOW THE AFFIANT, DEAN NAUJOKS, being first duly sworn and deposes and says as follows:

1) Yadkin Riverkeeper, Inc. is a non-profit organization operating in the state of North Carolina. Yadkin Riverkeeper, Inc. hired me in November of 2008.
2) I patrol the Yadkin River by boat and on foot as the Yadkin Riverkeeper. I meet with citizens throughout the Yadkin River basin to learn from them about problems they find in the river and to educate them about these problems and their rights to correct them.
3) Members of our organization and other residents use the Yadkin River for swimming, fishing, boating and wildlife observation.
4) In my job, I work to educate our members and area residents of their rights and their responsibilities to protect the river.
5) One of the most important rights that all residents enjoy are the public trust rights of boating, fishing, bathing, swimming and recreation along the River.
6) Members of Yadkin Riverkeeper regularly exercise their public trust rights to use the resources of the Yadkin River.
7) As Riverkeeper, it is part of my job to protect those public trust rights from any threats.
8) The Yadkin River is the second largest river in North Carolina and provides drinking water to 83 municipalities.
9) The Yadkin-Pee Dee River basin is North Carolina's second largest in terms of area, including 5,862 stream miles and 22,988 lake acres, and spanning 21 counties and 93 municipalities.



10) Nearly one-third of the watershed is used for agriculture, including cropland (15.6 percent) and pastureland (14.1 percent).

11) From its headwaters near Blowing Rock, the Yadkin River flows east and then south across North Carolina's densely populated midsection.

12) The Yadkin River travels approximately 203 miles—passing farmland; draining the urban landscapes of Winston-Salem, Statesville, Lexington and Salisbury; and fanning through seven man-made reservoirs before its name changes to the Pee Dee River below Lake Tillery.

13) The Pee Dee River courses another 230 miles to the Atlantic, leaving North Carolina near the community of McFarlan and ending its journey at South Carolina's Winyah Bay.

14) The Yadkin-Pee Dee River Basin bisects North Carolina, running north to south, with the bed of the river serving as the boundary between counties all along its journey.

15) Major tributaries of the Yadkin-Pee Dee River include the Mitchell, Ararat, Uwharrie and Rocky rivers and Dutchmans, Long and Abbotts creeks.

16) The uppermost reservoir in the basin is W. Kerr Scott Reservoir. Six reservoirs farther downstream are known as the Yadkin chain lakes: High Rock, Tuckertown, Badin (Narrows), Falls, Tillery and Blewett Falls.

17) High Rock is the first and largest of the Yadkin chain lakes. Badin, the oldest in the chain, was built in 1917 just below the gorge called "the Narrows" to power an aluminum plant in Badin.

18) Forested land covers half of the basin, including the federal lands of the Pee Dee National Wildlife Refuge, the Blue Ridge Parkway and the 50,000-acre Uwharrie National Forest, which lies completely within the basin.

19) Since it originates in the Blue Ridge and drains portions of the Piedmont, Sandhills and Coastal Plain, the Yadkin-Pee Dee River Basin contains a wide variety of habitat types, as well as many rare plants and animals.

20) The basin's rare species inventory (including endangered, threatened, significantly rare or of special concern) includes 38 aquatic animals.

21) Two species that occur in the basin are listed as endangered species by the federal government— the shortnose sturgeon, a migratory marine fish that once spawned in the river but has not been spotted in the basin since 1985, and the Carolina heelsplitter, a mussel now known from only nine populations in the world, including the lower basin's Goose Creek.

22) Five species of freshwater mussels which occur in the Yadkin-Pee Dee River have been added to the state's endangered species list — the Carolina creekshell, brook floater, Atlantic pigtoe, yellow lampmussel and savannah lilliput.

23) In exercising my duties as the Yadkin Riverkeeper, I paddled in a canoe down 185 miles of the Yadkin River.

24) This trip, entitled the "Tour de Yadkin," began on Sunday April 3, 2011 at W. Kerr Scott Dam and Reservoir and ended at the section of the river at Morrow Mountain State Park on Saturday April 30, 2011.

25) I paddled most of the Tour de Yadkin with volunteers from the surrounding community, including members of the Yadkin Riverkeeper, Inc. and local residents.

26) While paddling, I found that the Yadkin River carried multiple boats simultaneously across its width.

27) I paddled the entire length of the Yadkin River from the W. Kerr Scott Dam and Reservoir to Morrow Mountain State Park, with the exception of those points at which I had to portage around the dams.

28) Other than portages around dams, there were no obstacles to paddling down the Yadkin River in boats.

29) Each day, I paddled consecutive sections of the Yadkin River in order to traverse a 185 mile span of the Yadkin River on a schedule.

30) On Sunday, April 3, 2011 at 9:30 AM I began the Tour de Yadkin with my fellow participants, paddling from Ferguson to Kerr Scott Reservoir.

31) On Monday, April 4, 2011 we paddled about 6 miles along the Kerr Scott Reservoir.

32) On Tuesday, April 5, 2011 we paddled about 7 miles of the Yadkin River from the Kerr Scott Tail waters to Smoot Park in North Wilkesboro.

33) On Friday, April 8, 2011 we paddled 6.8 miles of the Yadkin River from Ronda to Elkin.

34) On Saturday, April 9, 2011 we paddled 6 miles of the Yadkin River from Elkin to Mitchell River.

35) On Monday, April 11, 2011 we paddled 5 miles of the Yadkin River from Yadkin Shores to Rockford.

36) On Friday, April 15, 2011 we paddled 6.6 miles of the Yadkin River from Donnaha to Old 421.

37) On Saturday, April 16, 2011 we paddled 5.4 miles of the Yadkin River from Old 421 River Access to Huntsville/Shallowford.

38) On Sunday, April 17, 2011 we paddled 10.8 miles of the Yadkin River from Huntsville to

Tanglewood Park in Winston-Salem.

39) On Tuesday, April 19, 2011 we paddled 12.8 miles of the Yadkin River from US 64 to Boones Cave Park.

40) On Wednesday, April 20, 2011 we paddled 9.5 miles of the Yadkin River from Boones Cave to York Hill.

41) On April 21, 2011 we paddled 11 miles of the Yadkin River from York Hill to Tamarack Marina.

42) On Saturday, April 23, 2011 we paddled of the Yadkin River from Tamarack Marina to Bringle Ferry Road and portaged High Rock, covering 4 miles of the Yadkin River.

43) On Sunday, April 24, 2011 we paddled 7 miles of the Yadkin River from Bringle Ferry Road to Hwy 49.

44) On Monday, April 25, 2011 we paddled from Hwy 49 to Old Whitney and portaged over Badin Lake, covering 5 miles of the Yadkin River.

45) On April 26, 2011 we paddled 6 miles of the Yadkin River from Old Whitney to Badin.

46) On Saturday, April 30, 2011 we paddled 11 miles of the Yadkin River from the Uwharrie River to Morrow Mountain.

47) On Saturday, April 30, 2011 we paddled along the Uwharrie River to Morrow Mountain State Park.

48) Each paddled section was easily navigable by amateur canoe paddlers, including young children.

49) Each paddled section could be traversed by multiple boats, including boats much larger than the canoes and kayaks used during the Tour de Yadkin. The kayak I used on the Tour de Yadkin was 15 feet long.

50) During the paddle, I and my companions exercised our public trust rights. Including boating, swimming and fishing.

51) The only impediment to the exercise of our public trust rights which we encountered were due to the presence and operation of dams on the River.

52) The Riverkeeper maintains that the Yadkin River is owned by the State of North Carolina in trust for its people.

53) Any infringement of the public trust harms the interests of the Riverkeeper.

54) The continued operation of the Yadkin Project by Alcoa Power Generating Inc. harms the public trust uses of the Yadkin River by impairing boating, swimming and fishing uses of the Yadkin River.

Dean Naujoks

NORTH CAROLINA
FORSYTH COUNTY

Sworn to and subscribed before me this the 2ND day of DECEMBER, 2011.

Notary Public (SEAL)

My commission expires: GAYLE GOLDSMITH TUCH
Notary Public
Forsyth County, NC
My Commission Expires September 16, 2012

CHAP. V.

A. D. 1758.

An Act for encouraging the building of Public Mills, and ascertaining the Duty of Millers.

I. BE it Enacted, *by the Governor, Council, and Assembly, and by the Authority of the same*, That every Water Grist-Mill already built, or which shall hereafter be built, that hath, or shall at any Time grind for Toll, shall be held and deemed, and is hereby declared to be a Public Mill.

Mills grinding for Toll, declared Public Mills.

II. *AND be it further Enacted, by the Authority aforesaid*, That it shall not be lawful for any Person or Persons hereafter to erect or build any Public Water Grist-Mill, without first obtaining an Order of the County Court for that Purpose, in Manner by this Act directed, that is to say: Any Person willing to build such Mill on some convenient Run, who hath Land on both Sides thereof, shall exhibit a Petition to the County Court for Leave to build such Mill; which Court is hereby impowered to examine into the Allegations of such Petition, and to grant or deny such Leave to the said Petitioner, as to them shall seem just and reasonable.

No Water Mill to be built, but by Order of Court.

Manner of obtaining it.

III. *AND be it further Enacted, by the Authority aforesaid*, That any Person willing to build such Mill, who hath Land only on one Side of a Run, shall exhibit his Petition to the County Court in Manner aforesaid, and therein shew who is the Proprietor of the Land on the opposite Side of the Run; whereupon a Summons shall issue to such Proprietor to appear at the next Court, and answer the Allegations of such Petition; and the Court also, at the same Time, shall order Four honest Freeholders to lay off, view, and value, on Oath, an Acre of the Land of such Proprietor, and also an Acre of the Land of the Petitioner, opposite thereto, and to report their Opinion and Proceedings thereon to the next Court, and thereupon the Court shall order the said Report to be recorded; and if it take not away Houses, Orchards, Gardens, or other immediate Conveniences, shall and may, and are hereby impowered and authorized, to grant Leave to the Petitioner, or such Proprietor, to erect such Mill at the Place proposed, as in their Discretion shall seem reasonable, and to order the Costs of such Petition to be paid by the Person to whom such Leave shall be granted.

Manner of obtaining Order for building Mills where Persons own Land on one Side of a Run only.

IV. *PROVIDED always*, That the Person to whom such Leave is granted, shall pay down in Court, for the Acre of Land he shall obtain thereby, the Valuation Money, and procure a Record to be made thereof; which shall be a good and effectual Seisen in Law, to create to such Person, his Heirs and Assigns, a Fee-Simple in such Acre of Land.

Valuation Money to be paid down in Court.

V. *PROVIDED nevertheless*, That it shall not be lawful for any Court to grant Leave to any Person to erect a Mill within Two Miles above, and Two Miles below, or so as to overflow any other Mill erected on the same Run; any Thing herein contained, to the contrary, notwithstanding.

No Mill to be built so as to overflow another.

VI. *PROVIDED also*, That the Person so being seized shall, within One Year, begin to build a Water-Mill, and finish the same within Three Years, and shall thereafter keep up the same for the Use and Ease of all such as shall be Customers to it, otherwise the said Land shall return to the Person from whom it was taken, or to such other Persons as shall have his Right, unless the Time for finishing the same, for Reasons shewn to, and approved of by the Court, be enlarged.

Time of beginning to build, and finishing such Mills.

VII. *PROVIDED likewise*, That if any Water-Mill belonging to any Person within the Age of Twenty One Years, Feme Covert, *Non compos Mentis*, or imprisoned, be let fall, burnt, or destroyed, that then such Person or Persons, and their Heir or Heirs, shall have Three Years to rebuild and repair such Mill, after his or their full Age, Discoverture, coming of sound Mind, or Enlargement out of Prison.

Time allowed Feme Coverts, &c.

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UNIVERSITY OF NORTH CAROLINA

EXHIBIT IV a

PENGAD 800-631-6989

A. D. 1758.

Persons aggrieved by the Order of any County Court, may appeal to the Supreme Court of the District.

VIII. *AND be it further Enacted, by the Authority aforesaid,* That if any Person shall think himself aggrieved by the Order or Determination of the County Court, he may appeal therefrom to the next Supreme Court of Justice, *Oyer and Terminer*, and General Gaol Delivery, for the District in which the said Land doth lie, giving Bond and Security as usual, which Court shall, and is hereby authorized and impowered, to take Cognizance of the same, and to affirm such Order, or reverse the same, and to give such Judgment therein as the County Court ought to have rendered.

Persons who have built Mills in Virtue of any Order of Court, and complied with the Conditions, quieted in the Possession of such Mills.

IX. AND whereas it hath heretofore frequently happened that a Person desirous of building a Water Mill, and having Land on one Side of a Run only, hath, by Order of the County Court, obtained an Acre of the Land on the opposite Side of the Run for that Purpose, which Order is held not to be warranted by the Laws now in Force: For quieting the Owners of such Mills in the peaceable Possession thereof, *Be it further Enacted, by the Authority aforesaid,* That every Person who hath built any such Mill in Consequence of any such Order, and hath actually paid the Money according to the Valuation of such Acre of Land, shall be, and is hereby declared to stand seized thereof, to him, his Heirs and Assigns, in Fee-Simple, in the same Manner, and under the same Restrictions, Limitations and Conditions, as if the same had been originally granted by Virtue of the Powers and Authorities of this Act.

Owners of Mills injured by the building other Mills, may have their Actions for Damages.

X. *PROVIDED also*, That where any Owner or Owners of a Mill already built, or that shall hereafter be built, shall conceive himself injured by the building of any other Water Mill by any Person or Persons on the same Stream, it shall and may be lawful for the Party injured, to bring his Action on the Case against the Owner or Owners of such latter built Mill, in the same Manner as he might have done before the passing of this Act, any Thing herein contained, to the contrary, in any wise, notwithstanding.

Millers to grind according to Turn, and what Toll they are to take.

XI. AND to prevent Abuses by evil-minded, covetous, and exacting Millers, or Owners of Mills, *Be it Enacted, by the Authority aforesaid,* That all Millers shall grind according to Turn; and shall well and sufficiently grind the Grain brought to their Mills, if Water will permit; and shall take no more Toll for grinding than One Eighth Part of the Wheat, and One Sixth Part of the *Indian* Corn: And every Miller, or Keeper of a Mill, making Default herein, *viz.* not grinding according to Turn, not well and sufficiently grinding the Grain, if Water will permit as aforesaid, or exacting or taking more Toll than herein is set down and allowed, shall, for every such Offence, forfeit and pay Fifteen Shillings, Proclamation Money, to the Party injured; to be recovered before a Justice of the Peace of the County wherein such Offence is committed, with Costs.

Penalty for Default.

Owner to grind his own Grain at any Time.

XII. *PROVIDED always*, That it shall be in the Power of the Owner of any such Mill to grind, or cause to be ground, his own Grain, at any Time he thinks fit; any Thing in this Act, to the contrary, notwithstanding.

What Measures they are to keep in their Mills.

XIII. AND for the better Discovery of such exacting Millers; *Be it Enacted, by the Authority aforesaid, and it is hereby Enacted*, That all Millers shall keep in their Mills the following Measures, *viz.* An Half Bushel, and Peck, tried and stamped by the Keeper of the Standard of the County wherein such Mill is; and Two Toll-Dishes for each Measure, one for Wheat, that shall not hold more than One Eighth Part of each Measure, and one for *Indian* Corn, that shall not hold more than One Sixth Part of each Measure: And every Owner himself, Servant or Slave, keeping any Mill, and shall be lawfully convicted of keeping false Toll-Dishes, contrary to the Intent and Meaning of this Act, shall forfeit and pay the Party injured Fifteen Shillings, Proclamation Money, to be recovered by a Warrant from a Justice of the Peace as aforesaid: And if in Case such a Miller is a free Person, and keeps such a Mill for a Share, or for Hire, and is guilty of any of the above

Penalty for keeping false Measures.

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above Offences, it ſhall be lawful for the Owner to ſtop ſo much of his Share or Hire as will be ſufficient to reimburſe himſelf for ſuch Fine or Fines as he ſhall become anſwerable for, with all the Charges that ſhall become due thereon. A. D. 1758.

XIV. *AND be it further Enacted, by the Authority aforeſaid,* That all other Act or Acts, heretofore made, as far as they relate to Public Mills, are hereby from henceforth repealed, and made null and void. Repealing Clauſe.

CHAP. VI.

An Act for eſtabliſhing a Warehouſe for the Inſpection of Tobacco on the Land of Thomas Barnes, *in the County of* Halifax, *and other Purpoſes.* Provided for by the Inſpection Act.

CHAP. VII.

An additional Act to an Act, intituled, An Act concerning Servants and Slaves.

I. WHEREAS many great Charges have ariſen to the Province by Puniſhment of Slaves, who having Liberty from their Owners to hire themſelves out, and have committed Robberies; by the Importation of Slaves from foreign Parts, for Crimes by them committed; by the Condemnation of Slaves to Death for capital Crimes, for Want of a Puniſhment adequate to the Crimes they have been guilty of; and by the high Valuation of Slaves condemned to Death, or killed by Virtue of an Outlawry: Preamble.

II. *BE it Enacted, by the Governor, Council, and Aſſembly, and by the Authority of the ſame,* That no Perſon who ſhall permit any Slave to hire himſelf or herſelf out, ſhall be intitled to receive any Pay from the Public, ſhould they be puniſhed for any Crimes by them committed during the Time of ſuch Permiſſion, any Uſage or Cuſtom, to the contrary, notwithſtanding. Maſters permitting Slaves to hire themſelves out, not to be allowed for them, ſhould they be puniſhed for any Crime.

III. *AND be it further Enacted, by the Authority aforeſaid,* That no Perſon hereafter purchaſing any Slave, tranſported for Crimes from foreign Parts into this Province, ſhall be intitled to receive any Payment from the Public, ſhould ſuch Slave afterwards be convicted and puniſhed for any Crimes committed within this Province; unleſs he firſt made Oath, in the Court appointed for trying ſuch Slave, that he did not, at the Time of his purchaſing, know that ſuch Slave had been tranſported here for any Crimes committed in foreign Parts. *(a)* Perſons knowingly purchaſing Slaves tranſported for Crimes committed abroad, not to be allowed for them if puniſhed for Crimes here.

CHAP. VIII.

An Act for altering the Method of working on the Roads, and appointing Public Ferries within the Counties of Craven, Carteret, Johnſton, Beaufort, Orange, *and* Onſlow. Repealed by the Road Act.

CHAP. IX.

An Act for appointing a proper Place for holding the Supreme Court of Juſtice, Oyer *and* Terminer, *and General Gaol Delivery, for the Diſtrict of* Northampton, Edgcomb, *and* Granville.

I. WHEREAS it hath been repreſented to the Aſſembly by the Inhabitants of *Northampton, Edgcomb,* and *Granville,* that *Enfield,* the Place where the Supreme Court of Juſtice, *Oyer* and *Terminer,* and General Gaol Delivery, for the Preamble.

(a) The three laſt Sections of this Act repealed, by Act October 1764, Chap. 8.

INTERNET ARCHIVE UNIVERSITY OF NORTH CAROLINA

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Appendix of Exhibits to Support its Request for Declaratory Ruling have been be served by being mailed via U.S.P.S. to the following addressees:

Secretary of Administration,
116 West Jones Street
Raleigh, North Carolina 27611
(per rule 01 NCAC 01B.0602)

Moses Carey, Jr.
Secretary of Administration
1301 Mail Service Center
Raleigh, NC 27699-1301

Roy Cooper
Attorney General of North Carolina
9001 Mail Service Center
Raleigh, N.C. 27699-9001

This the **13th** day of **December, 2011**

James P. Longest, Jr. "Ryke"
State Bar No. 18297

ERC Committee Attachments

1	Member Attendance
2	Sergeants at Arms
3	Meeting Notice
4	Meeting Reminder
5	Agenda
6	Visitor Registration Sheets (6)
7	Memorandum on Disposition of Reports to the Committee
8	October 12 minutes
9	Commission Budget
10	Parks & Recreation Trust Fund Presentation
11	Parks & Recreation Trust Fund Annual Report 2010-2011
12	Parks & Recreation Trust Fund 2011 Annual Report
13	NC Natural Heritage Trust Fund Presentation
14	NC Natural Heritage Trust Fund 2011 Annual Report
15	Clean Water Management Trust Fund Presentation
16	Clean Water Management Trust Fund 2011 Annual Report
17	Clean Water Management Trust Fund Projects Not Funded in 2011 Awards Cycle
18	NC Development & Farmland Preservation Trust Fund Presentation
19	NC Development & Farmland Preservation Trust Fund 2010-2011 Annual Report
20	Land for Tomorrow Presentation
21	Riparian Buffers Presentation
22	Ecological Flows for Hydrologic Modeling in NC Presentation
23	Senator Hartsell's Request to the Attorney General

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Sen. David Rouzer

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips 1

D Rouzer
(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

—

Number of days subsistence claimed for other meeting(s) —

Car Mileage claimed for other meeting Yes ☐ No ☒

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Rep. William Brisson

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☑ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Rep. Mitch Gillespie

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip)
# of round trips 1 or File

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) 0

Car Mileage claimed for other meeting Yes ☐ No ☑

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Rep. Roger West

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip)
# of round trips -0-

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

State Assets

Number of days subsistence claimed for other meeting(s) 2

Car Mileage claimed for other meeting Yes ☑ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Rep. Chuck McGrady

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip)
# of round trips 540

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Sen. Fletcher Hartsell

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip) 282
# of round trips 1

Fletcher L. Hartsell Jr.
(Member's Signature)

David Rouzer
(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) _____

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Sen. Brent Jackson

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips 1

Brent Jackson
(Member's Signature)

David Rouzer
(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) 0

Car Mileage claimed for other meeting Yes ☐ No ☒

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Sen. Stan Bingham

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip) 198
# of round trips 1

Stan Bingham
(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Sen. Michael Walters

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) ✓

Car Mileage (Round Trip)
# of round trips 214

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) None

Car Mileage claimed for other meeting Yes ☐ No ☑

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Rep. Joe Hackney

Number of days subsistence claimed 1

(If you come the night before and spend the night, you are entitled to an extra day.)

Car Mileage (Round Trip) 60
# of round trips

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Rep. Ruth Samuelson

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip)
# of round trips 340

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Sen. Bill Rabon

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) ✓

Car Mileage (Round Trip)
# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: December 14, 2011

Member: Sen. Don East

Number of days subsistence claimed 2

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips 260

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
January 26, 2012

The Environmental Review Commission (ERC or Commission) met on Thursday, January 26, 2012 at 9:00 a.m. in Room 643 of the Legislative Office Building. Representative Samuelson presided.

The following members were present: Representative Mitch Gillespie Co-Chair, Senators Stan Bingham, Don East, Fletcher Hartsell, Brent Jackson, Bill Rabon, Representatives William Brisson, Joe Hackney, Carolyn Justice, Pat McElraft, and Chuck McGrady. Also present were: Mr. Jeff Hudson, Ms. Jennifer McGinnis, Commission Counsels; Ms. Jennifer Mundt, Commission Analyst; Ms. Susan Iddings, Bill Drafting; Ms. Mariah Matheson, Research Assistant; Ms. Susan Phillips, Commission Clerk; and Sergeants-at-Arms John Brandon, Reggie Sills, Carlton Adams, Jim Blackburn, John Fitchett and Billy Fritcher. (Attachment 1).

On January 4, 2012, notice was sent to members and interested parties via e-mail. A copy of this notice is incorporated into these minutes as Attachment #2. Copies of the agenda for the meeting and visitor registration sheets are included as Attachment #3 and Attachment #4.

Representative Samuelson called the meeting to order and welcomed members, staff, and visitors in attendance. There were no introductory remarks made by the Commission Co-Chairs. Representative Samuelson recognized Mr. Jeff Hudson, Commission Counsel, for a report to the Commission. Mr. Hudson gave a brief overview of today's agenda. Representative Samuelson called for the approval of the minutes for the November 9, 2011 meeting. There being no changes, Representative Gillespie moved for approval. Representative Samuelson then recognized Mr. Dexter Matthews, Director, Division of Waste Management (DWM) of the Department of Environment and Natural Resources (DENR) to provide an overview of the Division of Waste Management and its budget. Mr. Matthews' presentation is included as Attachment 5.

Senator Bingham asked about U.S. Department of Defense (DOD) Superfund cleanup sites. Mr. Matthews stated that there were eight to nine sites. Mr. Matthews explained that many military bases have had releases of hazardous substances over the years, including petroleum releases and solvents. The military bases have been there a long time and have their own disposal sites. DOD is responsible for cleaning up these sites. Additionally, there are inactive sites that might have had releases in need of cleanup. In those cases, DOD works with the State on cleanup.

Senator Bingham asked how many abandoned municipal landfills there are in the State. Mr. Matthews replied that there are 676 that are in need of cleanup.

Senator East asked for the status of the Superfund. Is there enough money to fix everything? Mr. Matthews replied that the Leaking Underground Storage Tank Trust Fund (LUST) is separate from the Superfund. There is not enough money coming into the LUST trust

fund to address all of the needs in a timely manner. Sites are prioritized based on risk. The high risk sites are addressed quickly, as are most of the intermediate risk sites. DWM continues to receive reports of releases, which are then categorized and ranked according to risk. On the non-commercial side, the budget was cut in half last year and reallocated to the Highway Trust Fund. There is only enough money to address the immediate steps taken when a release occurs and then the site waits for cleanup. The Superfund is at the federal level. The Inactive Hazardous Sites Program has a similar fund with little money in it. North Carolina has several hundred orphaned sites and nowhere near enough money to deal with them.

Senator East asked if there was any way to capture the methane gas emitted at some of the closed landfills. Mr. Matthews replied that DWM reviews that when they assess a site and there are some sites in which it may be a possibility.

Representative Samuelson recognized Mr. Michael Scott, Chief, Solid Waste Section of DWM, for a presentation on the annual solid waste management report. Mr. Scott made a PowerPoint presentation, which is included as Attachment 6. Mr. Scott explained the types of waste handled by the Solid Waste Section, including municipal solid waste; industrial waste; construction and demolition waste; land-clearing waste; scrap tires; medical waste; compost; septage; and electronics. Mr. Scott also discussed the North Carolina Solid Waste Disposal 20-Year Forecast.

Senator East asked Mr. Scott to explain how the tire disposal program works. Mr. Scott explained that there is a 2% tax on new tire purchases to pay for disposal of old tires. Larger tires have a 1% tax assessed. The tax also pays for cleanup of old sites where tires have been dumped.

Senator East said that some counties complain that they don't get their fair share of the tire tax. Mr. Scott said he has heard the same thing and they are looking into that and will report back what they find.

Representative Justice asked if there have been any instances of leaking from lined landfills? Mr. Scott stated that leaking has occurred from lined landfills in several instances. The liners and the leak detection system have been improved upon over the years. Representative Justice said more landfills are needed and it is good to know that the liners are working.

Representative Justice noted that one of Mr. Scott's charts showed a reduction in waste coming to the landfills. He attributed the reduction to the down economy and increased recycling. Representative Justice asked how what percentage of solid waste reduction is specifically attributed to recycling? Mr. Scott was not sure, but would investigate and report back to the Commission. Mr. Scott noted that much of the decrease was due to a reduction of construction waste.

Representative McElraft asked if the 20 year capacity/need predictions took into account waste export contracts, as some counties export their waste. Mr. Scott said that this was considered in their calculations. Representative McElraft stated that the State should not necessarily depend on other states to continue to take our trash in the future. North Carolina should make sure we are able to manage all of our own waste if needed.

Representative Samuelson asked why would the change in the economy affect the amount of septage pumped? Mr. Scott said it was probably due to preventative maintenance being delayed or not done at all.

Representative Samuelson recognized Mr. Scott Mouw, Community and Business Assistance Section Chief Division of Environmental Assistance and Outreach, for a presentation on the status of recycling and recycling markets in North Carolina. Mr. Mouw's remarks are included as Attachments 7 and 8. Mr. Mouw discussed recycling trends in North Carolina; disposal bans; recovery of recyclable products; local government collection; and job and business growth.

Senator East asked if it would be feasible to use pit burner technology at landfills to dispose of demolition waste? Mr. Mouw replied that this had been done in the past, but was not being used currently.

Representative Samuelson recognized Ms. Charlotte Jesneck, Inactive Hazardous Sites Branch, Superfund Section Head, for the annual report on the Inactive Hazardous Sites Program. Ms. Jesneck's remarks are included as Attachment 9. Ms. Jesneck discussed the federal Superfund program; Inactive Hazardous Sites Cleanup Fund; number of inactive hazardous waste sites; and funding cuts. Ms. Jesneck noted that of the 3,044 inactive hazardous sites cataloged, 452 have been closed and require no further action. Representative Samuelson thanked Ms. Jesneck and asked her for a copy of her prepared notes for the meeting.

Representative Samuelson recognized Mr. Bruce Nicholson, Brownfields Program Manager, for the annual report on the effectiveness of the Brownfields Property Reuse Act. Mr. Nicholson made a PowerPoint presentation, which is included as Attachment 10. The North Carolina Brownfields Program 2011 Annual Report to the Commission members (Attachment 11). Mr. Nicholson explained the Brownfields Property Reuse Act of 1997 and the roles of the federal and State programs. Mr. Nicholson noted that 296 acres were redeveloped during 2011.

Representative Justice complimented Mr. Nicholson on his presentation and asked for an example of the worst of the worst sites that have yet to be cleaned up. Mr. Nicholson cited North Carolina State University Lot 86, which is a chemical disposal site, near Carter Findley Stadium in Raleigh and the Martin Marietta site north of Charlotte.

Senator Hartsell asked if there was a Brownfields agreement for an abandoned aluminum plant in Badin North Carolina? Mr. Nicholson replied that no one has applied for one, there have been inquiries, but no application as of yet.

Representative McElraft asked if the property tax incentive was a local or State tax incentive? Mr. Nicholson replied that it was strictly a local incentive.

Representative Samuelson recognized Mr. Peter Doorn, Supervisor of the Special Remediation Branch Superfund section, to present the annual report on the Dry-Cleaning Solvent Cleanup Act of 1997 to the Commission. Mr. Doorn gave a PowerPoint presentation, which is included as Attachment 12. A full copy of the Dry-Cleaning Solvent Cleanup Act Program Report is included as Attachment 13.

Mr. Doorn explained the history and purpose of the fund and why a cleanup program was needed. Mr. Doorn noted that there are 705 active dry-cleaners, 2000 active and abandoned dry-cleaners, and 1,500 contaminated dry-cleaning sites in North Carolina. Seventy-Five percent of the dry-cleaners have contamination. Mr. Doorn explained how the fund is funded and the sales tax directed to the fund.

Senator East asked Mr. Doorn to explain the revenue stream. Mr. Doorn explained that by year 2000 it was evident that there was not enough revenue generated for cleanup with just the tax on cleaning solvent. It was then decided to use 60% of the sales and use tax on dry cleaning to help fund the cleanup. This took effect in 2003.

There being no further business, the meeting was adjourned at 11:11 AM.

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Susan D. Phillips, Commission Clerk

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
SENATOR STAN BINGHAM
SENATOR DANIEL G. CLODFELTER
SENATOR DON EAST
SENATOR FLETCHER L. HARTSELL
SENATOR BRENT JACKSON
SENATOR BILL RABON
SENATOR MICHAEL P. WALTERS

REPRESENTATIVE WILLIAM D. BRISSON
REPRESENTATIVE JOE HACKNEY
REPRESENTATIVE CAROLYN H. JUSTICE
REPRESENTATIVE PAT MCELRAFT
REPRESENTATIVE CHUCK MCGRADY
REPRESENTATIVE ROGER WEST

JEFF W. HUDSON
COMMISSION COUNSEL
545 LEGISLATIVE OFFICE BUILDING
300 NORTH SALISBURY STREET
RALEIGH, NORTH CAROLINA 27603
(919) 733-2578

SUSAN S. IDDINGS
COMMISSION COUNSEL

JENNIFER L. McGINNIS
COMMISSION COUNSEL

JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

9:00 a.m. Thursday, January 26, 2012
Room 643 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Ruth Samuelson, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Approval of the minutes for the November 9, 2011 meeting of the Commission

5. Solid Waste Management *(50 minutes)*

   Overview of the Division of Waste Management (DWM) of the Department of Environment and Natural Resources (DENR) *(20 minutes)*
   Dexter Matthews, Director
   DWM, DENR

   Presentation of the findings of the annual solid waste management report (G.S. 130A-309.12(c), G.S. 130A-309.14, G.S. 130A-309.06(c)(6), G.S. 130A-309.06(c)(8), G.S. 130A-309.06(c)(9), G.S. 130A-309.06(c)(10), G.S. 130A-309.06(c)(11), G.S. 130A-309.06(c)(12), G.S. 130A-309.06(c)(14), G.S. 130A-309.63(e), G.S. 130A-309.85, G.S. 130A-309.140, G.S. 136-28.8(g)). *(15 minutes)*
   Michael Scott, Chief
   Solid Waste Section, DWM, DENR

Presentation on the status of recycling and recycling markets in North Carolina *(15 minutes)*

Scott B. Mouw, Chief
Community and Business Assistance Section
Division of Environmental Assistance and Outreach, DENR

6. Annual report on the Inactive Hazardous Sites Program (G.S. 130A-310.10) *(15 minutes)*

Charlotte Jesneck, Head
Inactive Hazardous Sites Branch, Superfund Section
DWM, DENR

7. Annual report on the effectiveness of the Brownfields Property Reuse Act (G.S. 130A-310.40) *(15 minutes)*

Bruce Nicholson, Brownfields Program Manager
DWM, DENR

8. Annual report on the Dry-Cleaning Solvent Cleanup Act of 1997 (G.S. 143-215.104U) *(10 minutes)*

Pete Doorn, Supervisor
Special Remediation Branch, Superfund Section
DWM, DENR

9. Commission discussion and announcements

10. Adjourn

FUTURE MEETINGS:

The Environmental Review Commission will meet as follows in the Legislative Office Building (LOB), Raleigh, North Carolina. **This schedule is tentative and subject to adjustment.** For planning purposes, however, please reserve these dates.

Thursday, February 23, 2012 at 9:00 a.m. in Room 643 LOB.
Thursday, March 22, 2012 at 9:00 a.m. in Room 544 LOB.
Thursday, April 26, 2012 at 9:00 a.m. in Room 544 LOB.

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
SENATOR STAN W. BINGHAM
SENATOR DANIEL G. CLODFELTER
SENATOR DON EAST
SENATOR FLETCHER L. HARTSELL
SENATOR BRENT JACKSON
SENATOR BILL RABON
SENATOR MICHAEL P. WALTERS

REPRESENTATIVE WILLIAM D. BRISSON
REPRESENTATIVE JOE HACKNEY
REPRESENTATIVE CAROLYN H. JUSTICE
REPRESENTATIVE PAT MCELRAFT
REPRESENTATIVE CHUCK MCGRADY
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JENNIFER L. McGINNIS
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JENNIFER R. F. MUNDT
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MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

January 26, 2012

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on December 14, 2011. All reports are available online on the Commission website:
(http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received). If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or **mariahm@ncleg.net** for assistance.

A. The following reports have been submitted by the Department of Environment and Natural Resources (DENR) and are being distributed in connection with today's agenda as follows:

a. Annual solid waste management report. January 15, 2012. Statutory Authority: G.S. 130A-309.12(c), G.S. 130A-309.14, G.S. 130A-309.06(c)(6), G.S. 130A-309.06(c)(8), G.S. 130A-309.06(c)(9), G.S. 130A-309.06(c)(10), G.S. 130A-309.06(c)(11), G.S. 130A-309.06(c)(12), G.S. 130A-309.06(c)(14), G.S. 130A-309.63(e), G.S. 130A-309.85, G.S. 130A-309.140, G.S. 136-28.8(g). ***Agenda Item #5***

b. Annual report on the Inactive Hazardous Sites Program. October 1, 2011. Statutory Authority: G.S. 130A-310.10. ***Agenda Item #6***

c. Annual report on the Effectiveness of the Brownfields Property Reuse Act. October 1, 2011. Statutory Authority: G.S. 130A-310.40. ***Agenda Item #7***

d. Annual report on the Dry-Cleaning Solvent Cleanup Act of 1997. October 1, 2011. Statutory Authority: G.S. 143-215.104U. ***Agenda Item #8***

B. The following report has been submitted by DENR and may be distributed in conjunction with a presentation at a future meeting of the Commission.

Biennial report on the state of the environment. February 15, 2011. Statutory Authority: G.S. 143B-279.5(a).

ATTENDANCE

Environmental Review Commission

2011-2012

DATES	1/26/2012	2/23/2012													
Rep. Mitch Gillespie, Co-Chair	X	X													
Sen. David Rouzer, Co-Chair															
Rep. Ruth Samuelson, Co-Chair	X	X													
Sen. Stan Bingham	X	X													
Rep. William D. Brisson	X														
Sen. Daniel Clodfelter		X													
Sen. Don East	X														
Rep. Joe Hackney	X	X													
Sen. Fletcher Hartsell	X														
Sen. Brent Jackson	X	X													
Rep. Carolyn Justice	X														
Rep. Pat McElraft	X	X													
Rep. Chuck McGrady	X														
Sen. Bill Rabon															
Sen. Michael Walters	X														
Rep. Roger West		X													
Jeff Hudson, Committee Counsel	X	X													
Jennifer McGinnis, Committee Counsel	X	X													
Jennifer Mundt, Legislative Analyst	X	X													
Mariah Matheson, Research Assistant	X	X													
Susan Iddings, Drafting	X	X													
Sarah Neunzig, Committee Assistant															
Cindy Hobbs, Committee Assistant															
Susan Phillips, Committee Assistant	X	X													

Visitor Registration Sheet
(Committee Name)
ENVIRONMENTAL REVIEW COMMISSION
Date
January 26. 2012
VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Cathy Athroyd	DENR-Div. of Waste Mgmt.
ED Mussler	DENR - DWM
Linda Culpepper	DENR - DWM
Ethan Brown	DENR-Div. of Waste Management
Tom Cons	TNC
Michal Scott	DENR - Div of Waste Mgmt
Scott Mouw	DENR - Environmental Asst.
Mary Maller Asbill	SELC
Robin Smith	DENR
Trina Ozer	DENR
Ken Barsness	DENR
Ellen Lorscheider	DENR
Charlotte Jesneck	DENR-DWM
Robert Taylor	DENR-DEAO
BRUCE NICHOLSON	DENR-DWM
AMY SIMES	DENR
Jack Butler	DENR-DWM

09-21-2011

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Preston Howard	MCIC
Rick Zechini	Progress Energy
Jay Stem	NCAA
Beth Warren	AG's office
Clark Riemer	Civitas
Jessi Hayes	NCHBA
Lisa Martin	
Bill Schrum	Republic Services
Allen Hardison	CRSWMA
Kristen Laster	Fetzer Strategic
Phil Carter	Waste Industries
Chris Anderson	
Chris Dillon	NCWRC
Jim Johnson	BSA
Daniel Auburn	NCLM
Jan [illegible]	Common
Paul Shen	NCFB

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(Committee Name)

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January 26. 2012

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DAVID BARNES	PS
Stacy Sands	
Doug Howey	NCPAM
Cameron Hardy	Electricities
Latonia Strickland	NLACC
Joyce Peters	CSS
Lee-Ann Dugan	CSS

09-21-2011

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Date
January 26. 2012
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NAME	FIRM OR AGENCY AND ADDRESS
Pete Doorn	NC DENR Superfund Section
BERRY JENKINS	CAROLINAS AGC
RICHARD VICK	S.T. Wooten Corporation
Donna S. Cox	OSBM
Jennifer Hoffmann	OSBM

09-21-2011

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(Committee Name)

ENVIRONMENTAL REVIEW COMMISSION

Date

January 26. 2012

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NAME	FIRM OR AGENCY AND ADDRESS
DAVID BARNES	PS
Heather Barrett	WM
Tom Beau	HCWF, EDF
Allison Walch	NMFS

09-21-2011



Division of Waste Management (DWM)

Dexter R. Matthews, Director

Environmental Review Commission

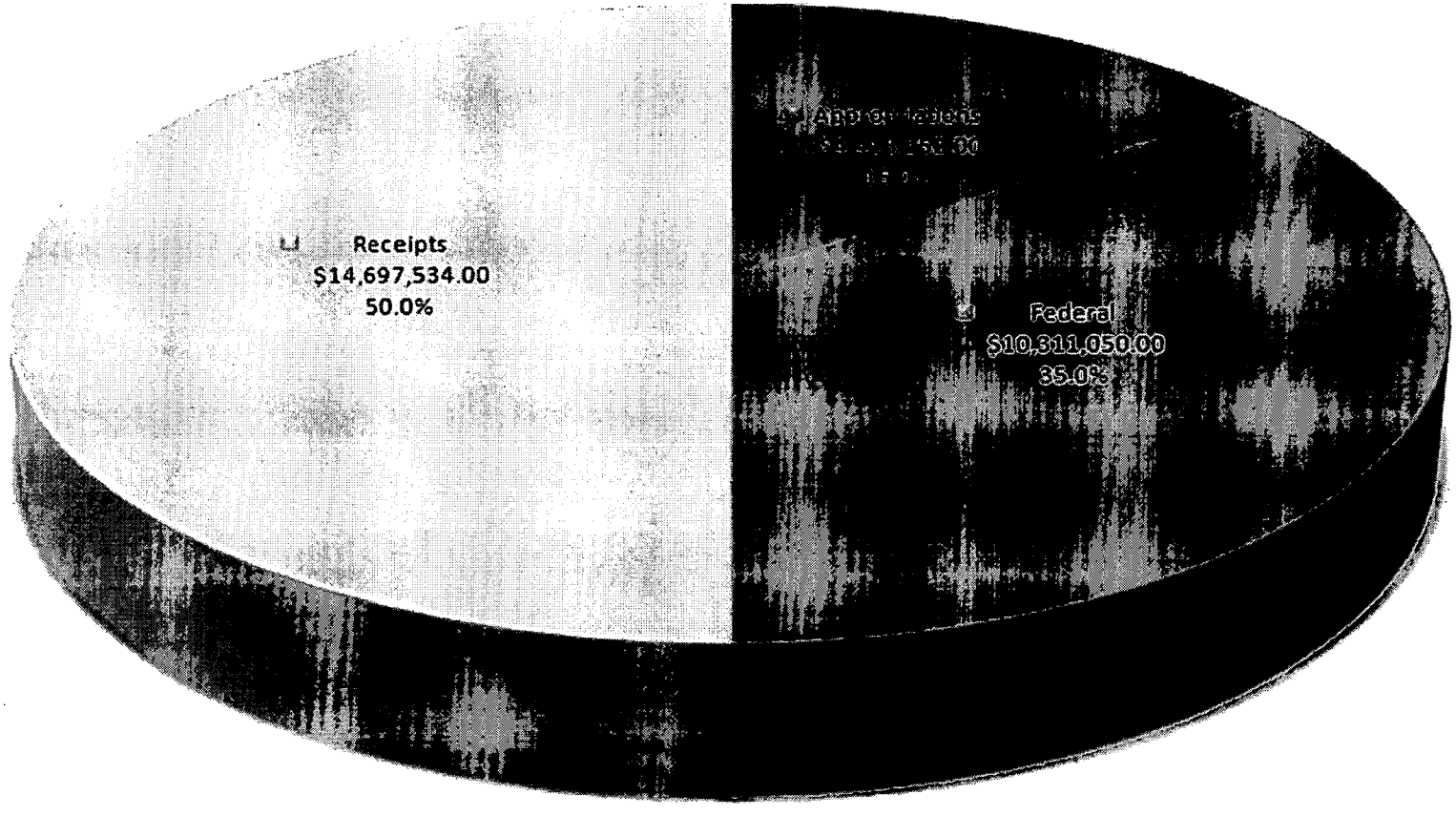
January 26, 2011

DWM Mission within DENR:
to prevent harmful releases of waste to the environment and clean up existing contamination

- Solid Waste Section
- Hazardous Waste Section
- Superfund Section
- Underground Storage Tank Section
- Brownfields Program

Division of Waste Management
2011 Budget Summary

(Total Positions Funded by DWM - 288)



Solid Waste Section

- Regulates safe management of solid waste through technical assistance, regulations, permitting, environmental monitoring, compliance evaluation and enforcement.

- Waste types handled at these facilities include municipal solid waste, industrial waste, construction and demolition waste, land-clearing waste, scrap tires, medical waste, compost, and septage.



Hazardous Waste Section

Protects human health and the environment from the risks presented by potential mismanagement of hazardous waste

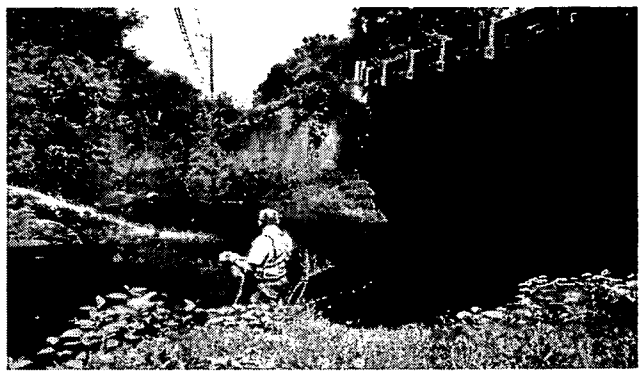
- Permits treatment, storage and disposal facilities
- Regulates generators, transporters and transfer facilities
- Administers Mercury Switch Removal Program



Superfund Section

Provides for protection of human health and the environment from historic hazardous substance or waste disposal sites.

- Department of Defense (DOD) sites
- Inactive hazardous waste sites (including preregulatory landfills)
- Dry-Cleaning Solvent Cleanup Act (DSCA) Program
- EPA National Priority List sites and Removal Actions



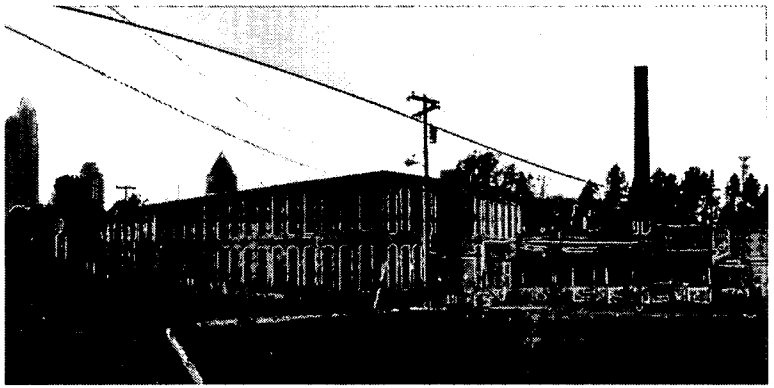
Underground Storage Tank Section (UST)

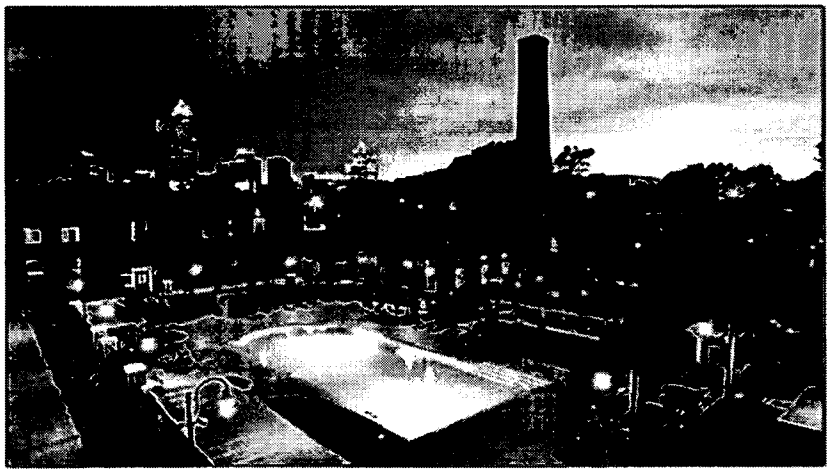
- Enforces UST regulations and manages funds used to perform cleanups of petroleum UST discharges or releases (UST incidents).
  - Commercial Cleanup Fund
  - Noncommercial Cleanup Fund



Brownfields Program

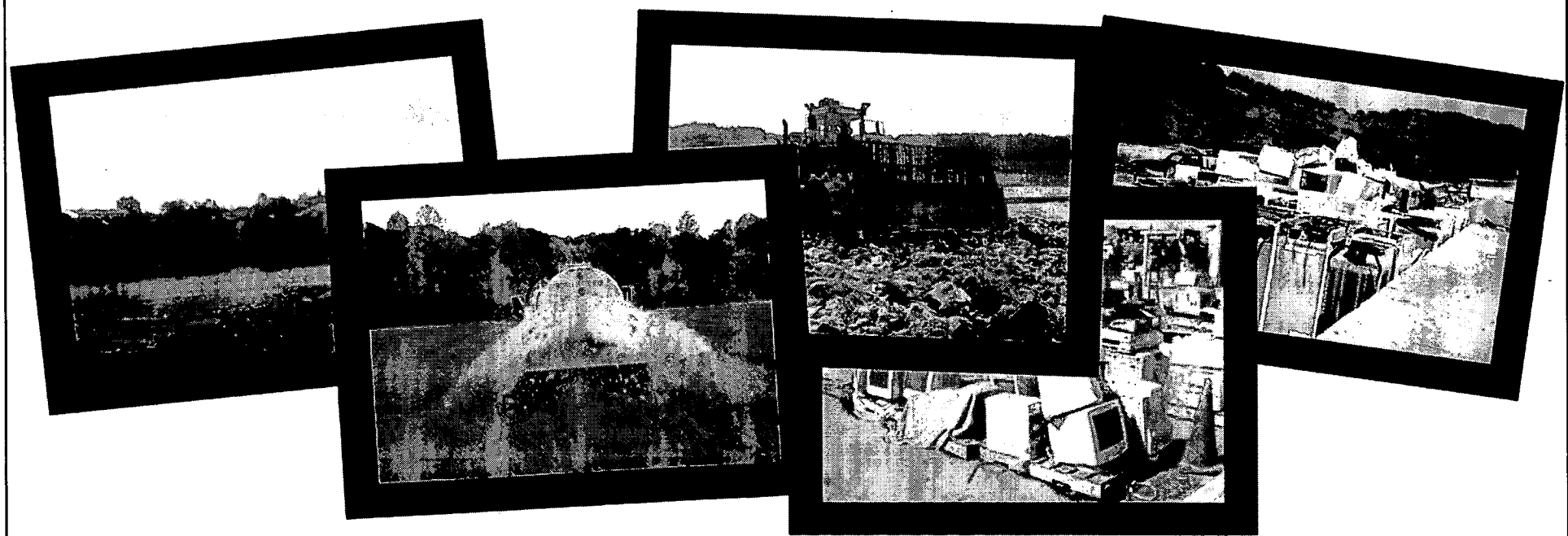
- The Brownfields Property Reuse Act removes barriers to redevelopment of contaminated properties by protecting prospective developers from liability for contamination they did not cause.
- Abandoned, idled or underused properties where environmental contamination hinders redevelopment due to concerns about environmental liability.





Solid Waste and Materials Management Annual Report

MICHAEL E. SCOTT, SOLID WASTE SECTION CHIEF
DIVISION OF WASTE MANAGEMENT



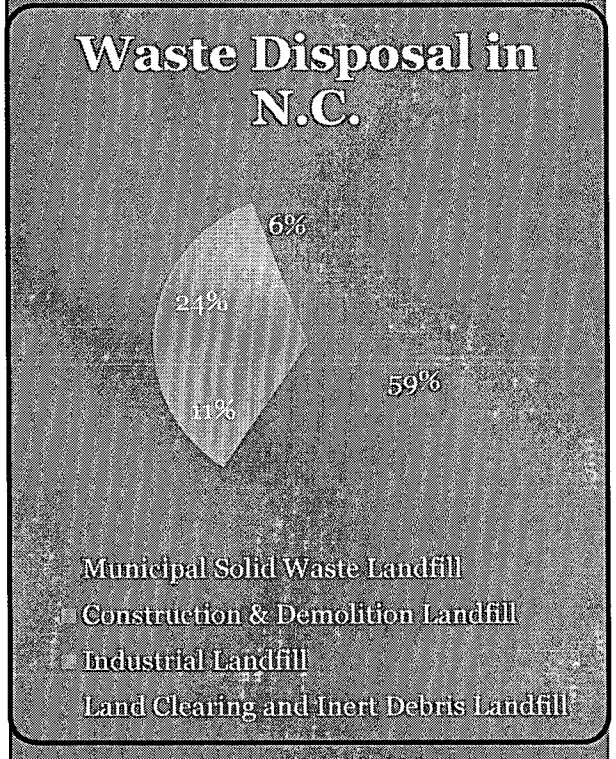
Solid Waste Section

Regulates safe management of solid waste through technical assistance, regulations, permitting, environmental monitoring, compliance evaluation and enforcement.

Waste types handled:

- municipal solid waste
- industrial waste
- construction and demolition waste
- land-clearing waste
- scrap tires
- medical waste
- compost
- septage
- electronics

Disposal Facts

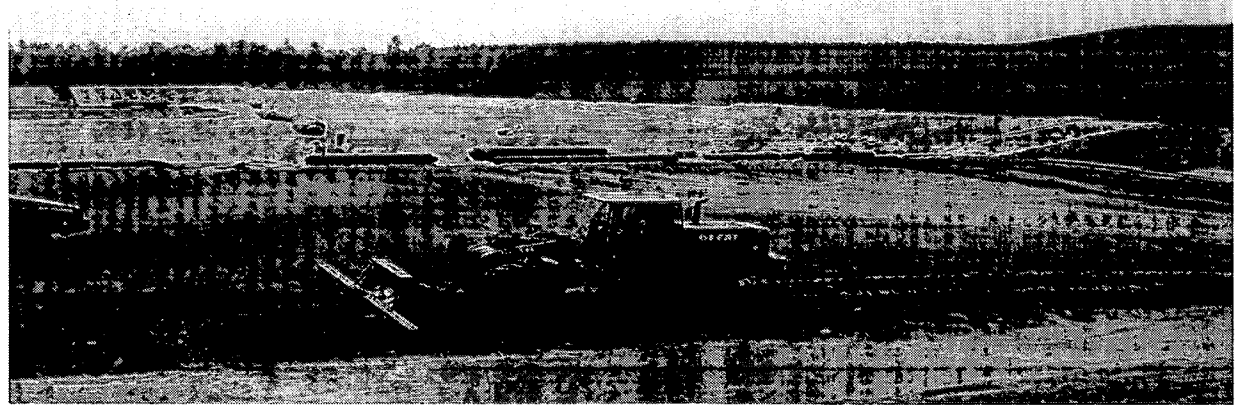


- North Carolina communities disposed of 9,467,045 tons of waste
- Increase of 71,588 tons from the previous fiscal year
- State capacity equals 29 years of waste disposal (if the municipal solid waste disposal rate remains at 7.6 million tons per year)

Municipal Solid Waste

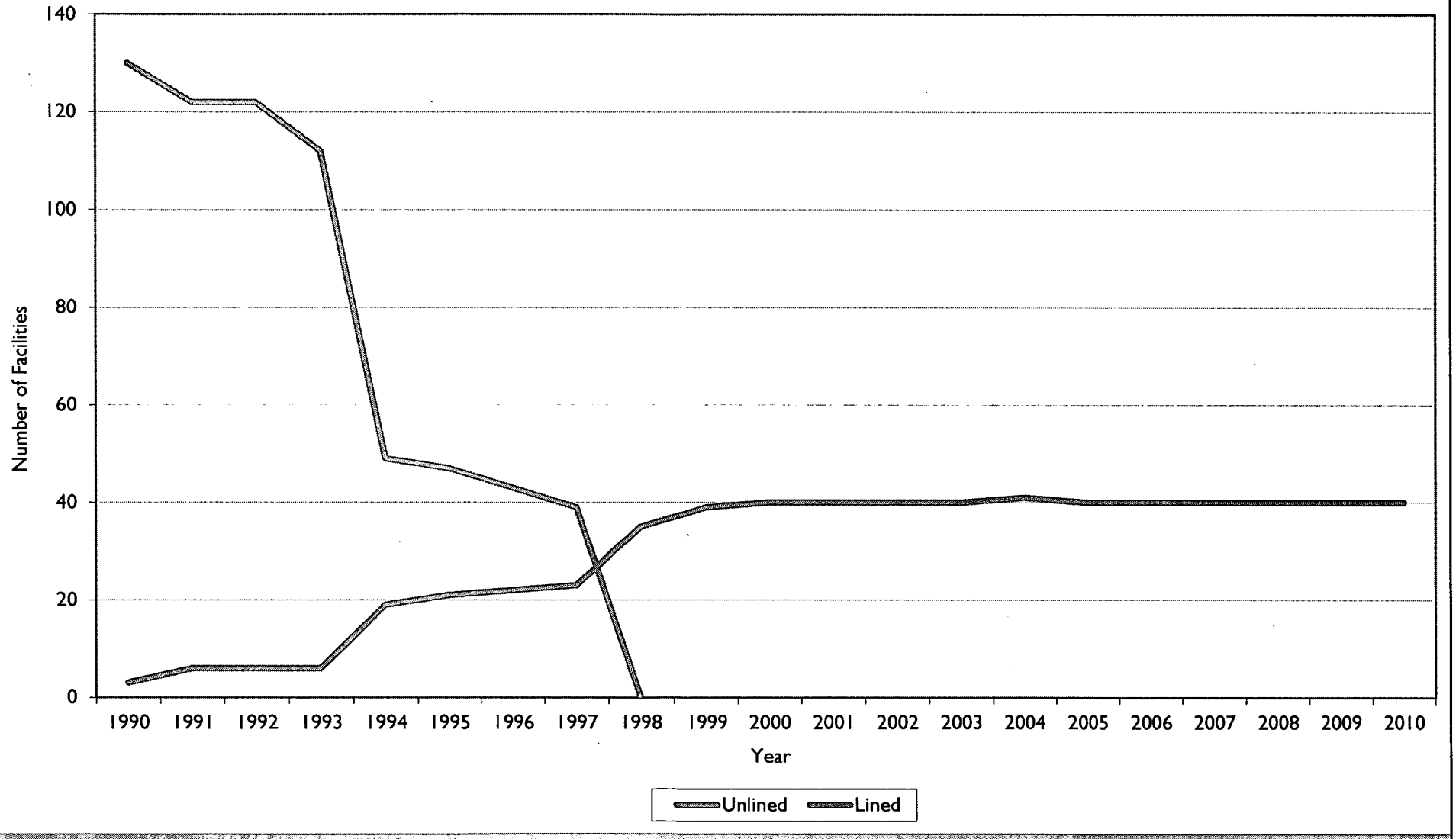
- 40 municipal landfills
- 1 municipal incinerator
- Subtitle D requirements
- Disposal rates



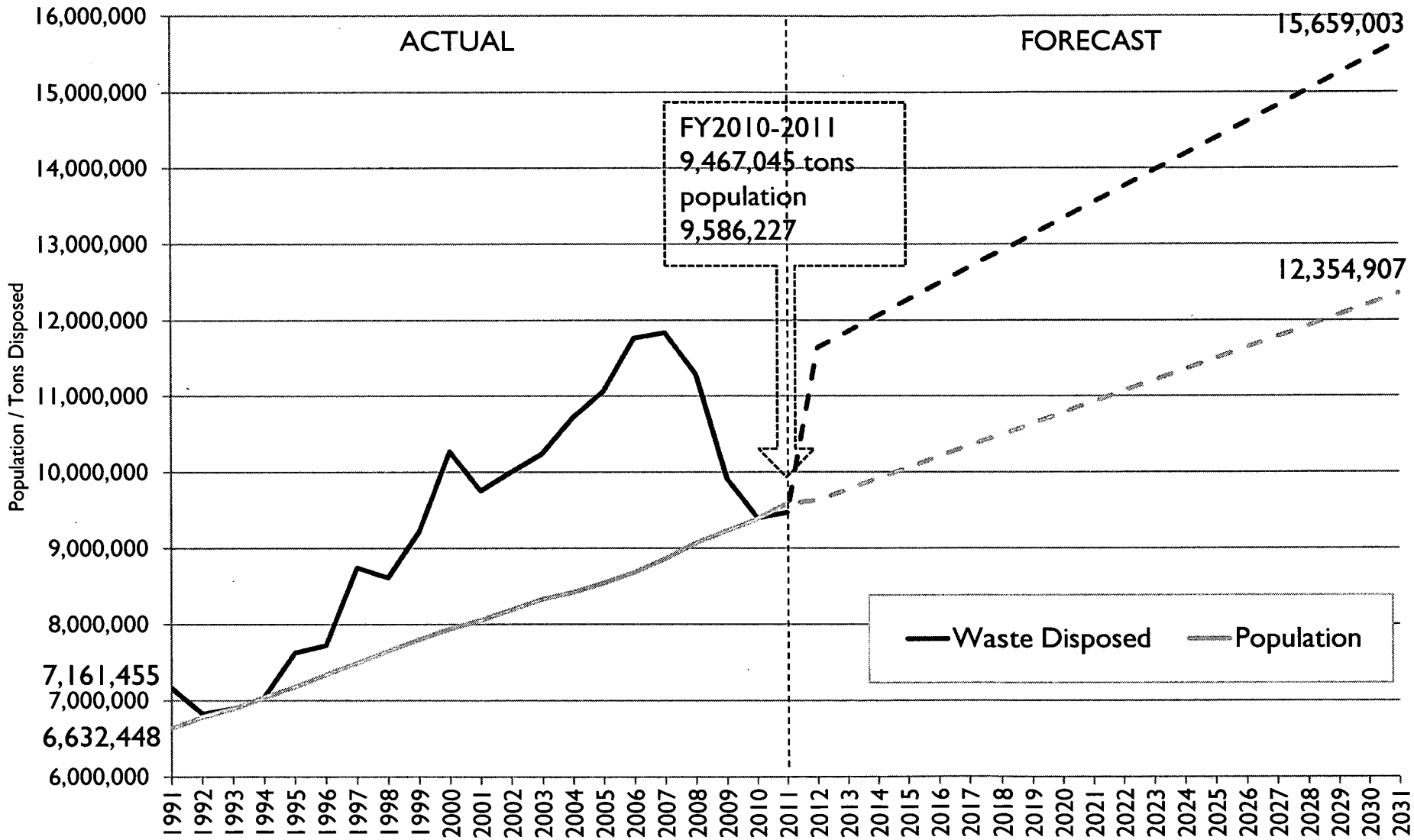


Landfill liner installation

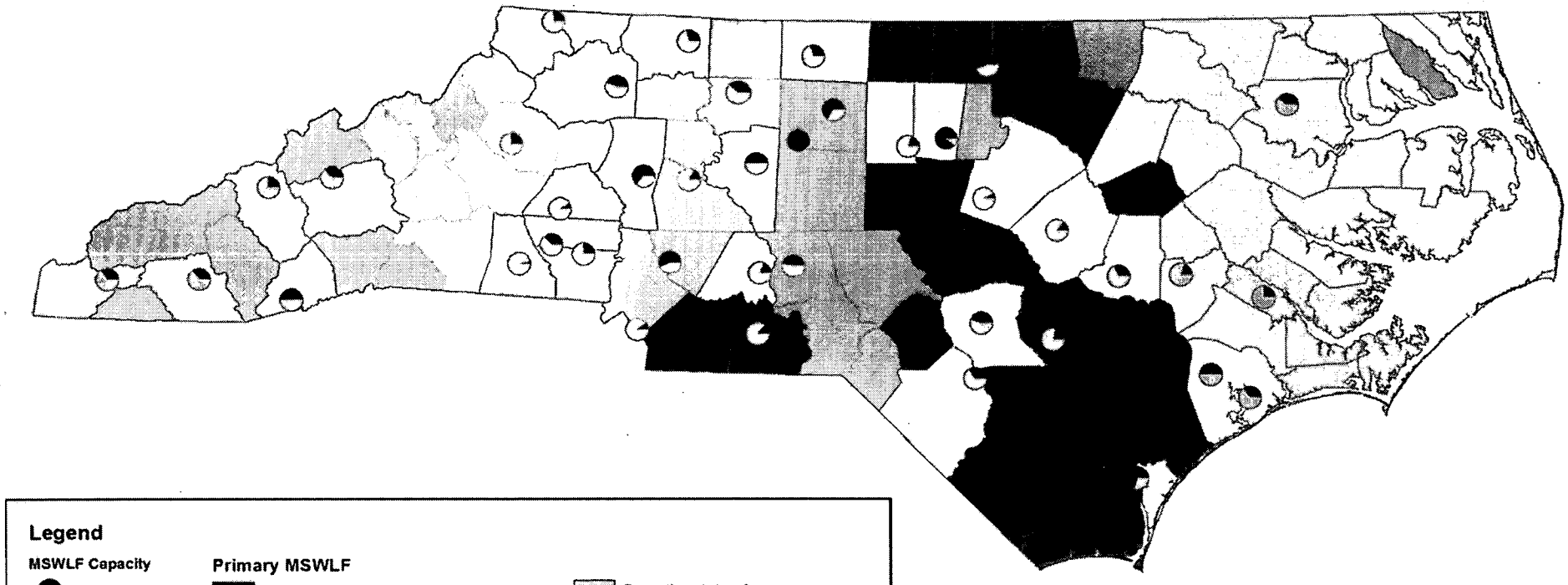
Number of Open Municipal Solid Waste Landfills in N.C.



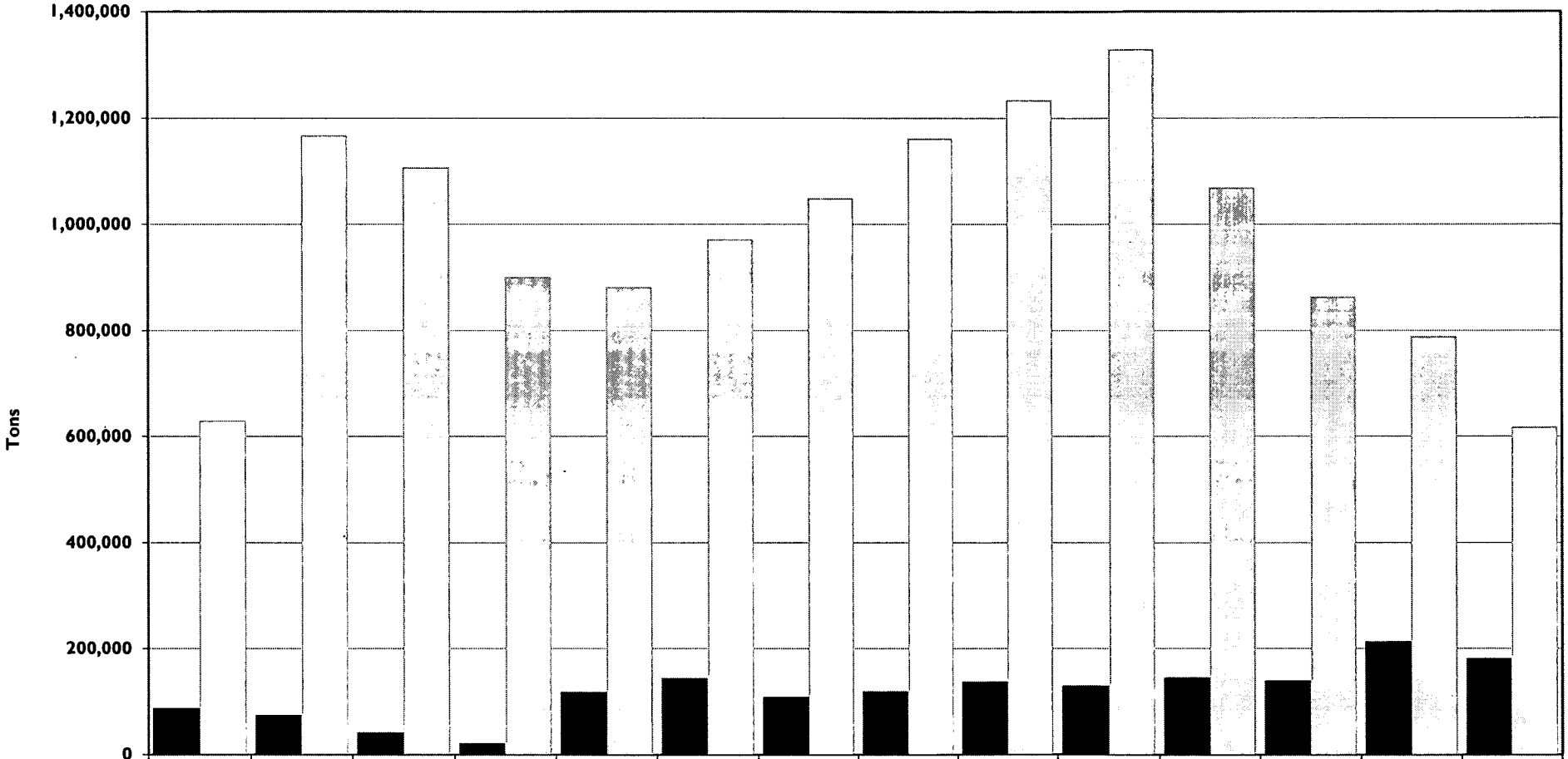
North Carolina Solid Waste Disposal
20-Year Forecast



Wastesheds and MSWLF Capacity



Import and Export of Solid Waste (tons)



	FY 1997-1998	FY 1998-1999	FY 1999-2000	FY 2000-2001	FY 2001-2002	FY 2002-2003	FY 2003-2004	FY 2004-2005	FY 2005-2006	FY 2006-2007	FY 2007-2008	FY 2008-2009	FY 2009-2010	FY 2010-2011
■ Imports	87,393	74,185	41,840	21,614	117,981	144,116	108,803	119,202	137,307	129,906	145,551	139,446	213,323	181,537
□ Exports	629,415	1,166,875	1,106,897	900,743	882,247	971,286	1,048,111	1,161,926	1,234,307	1,329,202	1,069,428	863,604	788,834	618,017

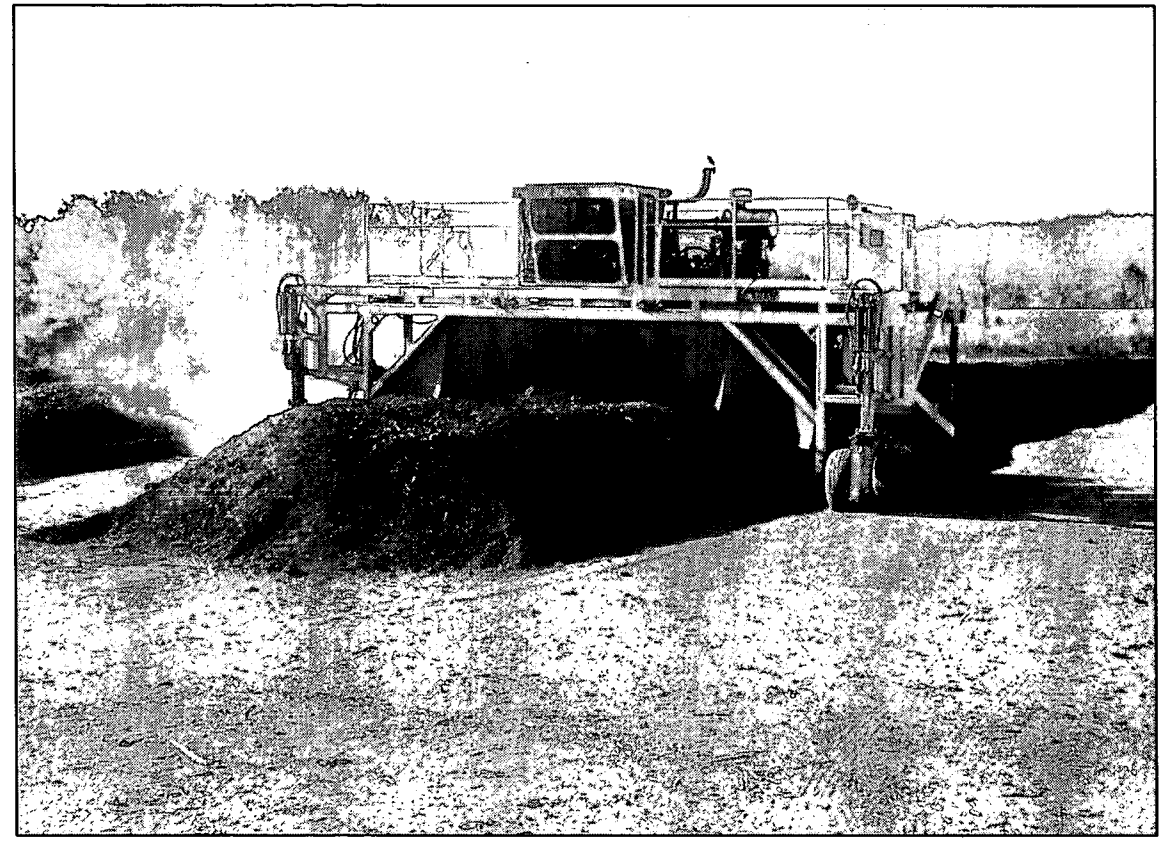
Composting

Growing sector in Solid Waste

40 Solid Waste compost facilities

Food waste, agricultural byproducts, and sludges are managed

64,000 tons of food waste and food residuals composted in FY 2010-2011



Large Type III Compost Facility in Goldston, NC

Septage

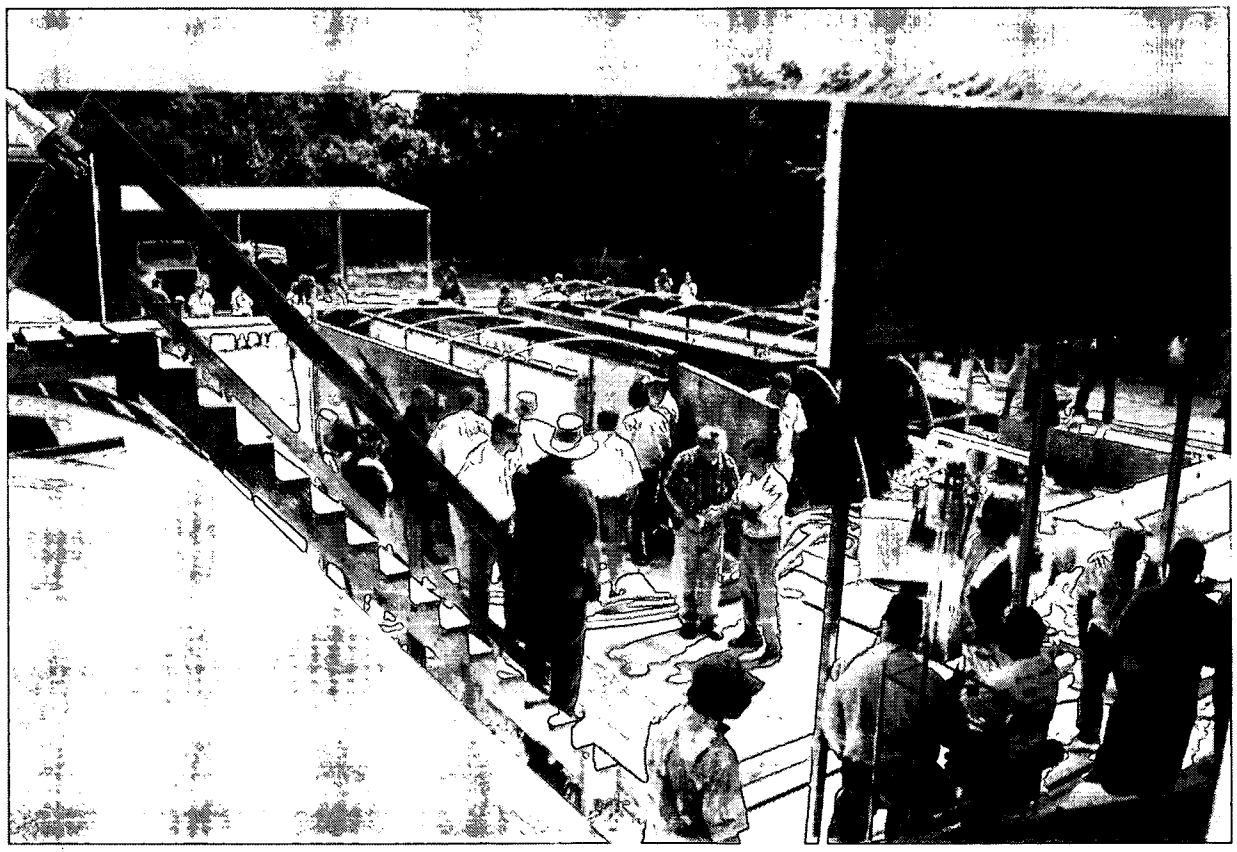
Solid waste that is a fluid mixture of untreated and partially treated sewage solids of human or domestic origin.

Septic tank waste

Grease traps

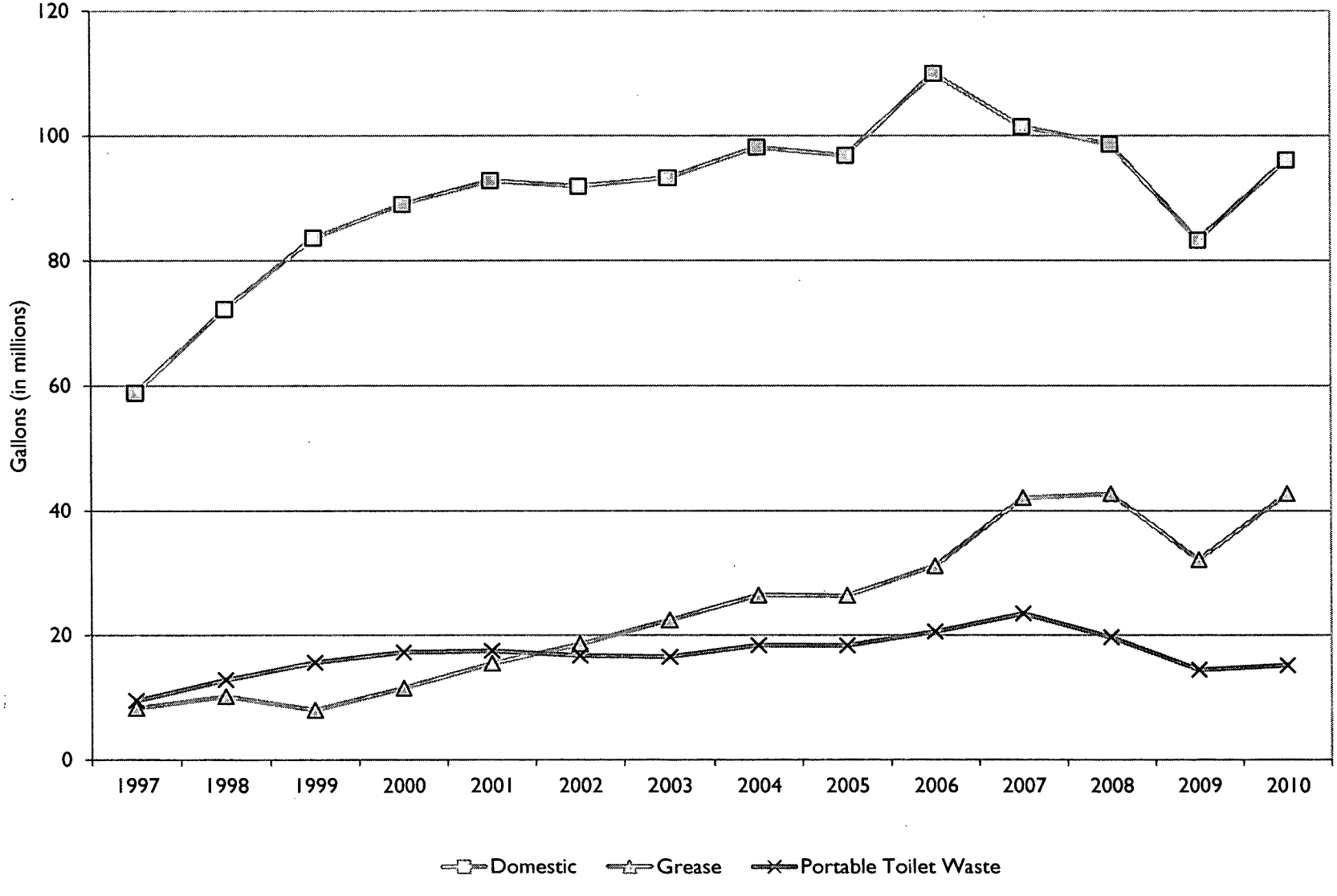
Portable toilets

505 septage firms



Septage dewatering facility in Craven Co

Septage Pumped Per Year

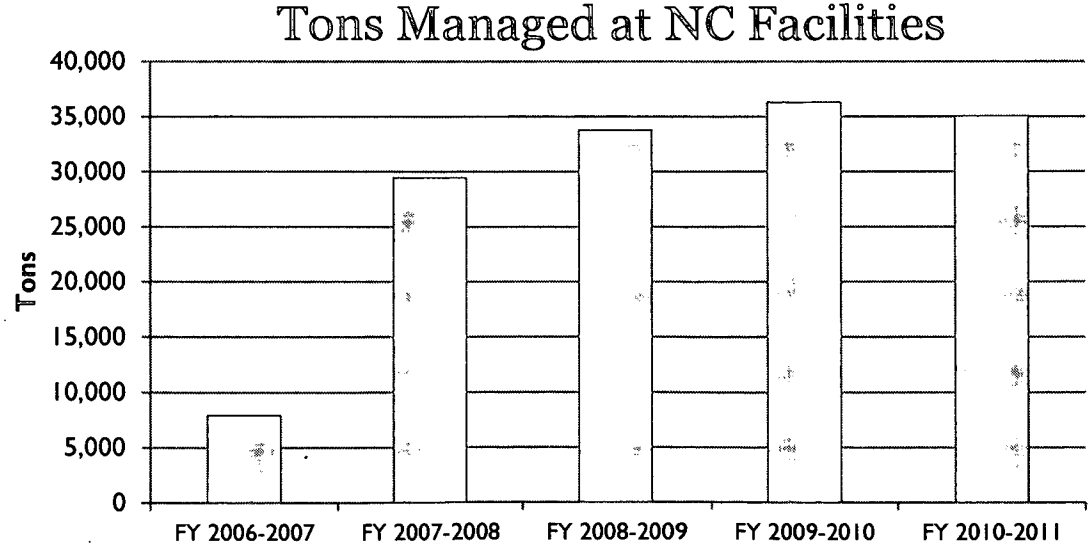


Medical Waste

Waste primarily managed in incinerators and autoclaves

Treated waste may then be disposed of in landfills

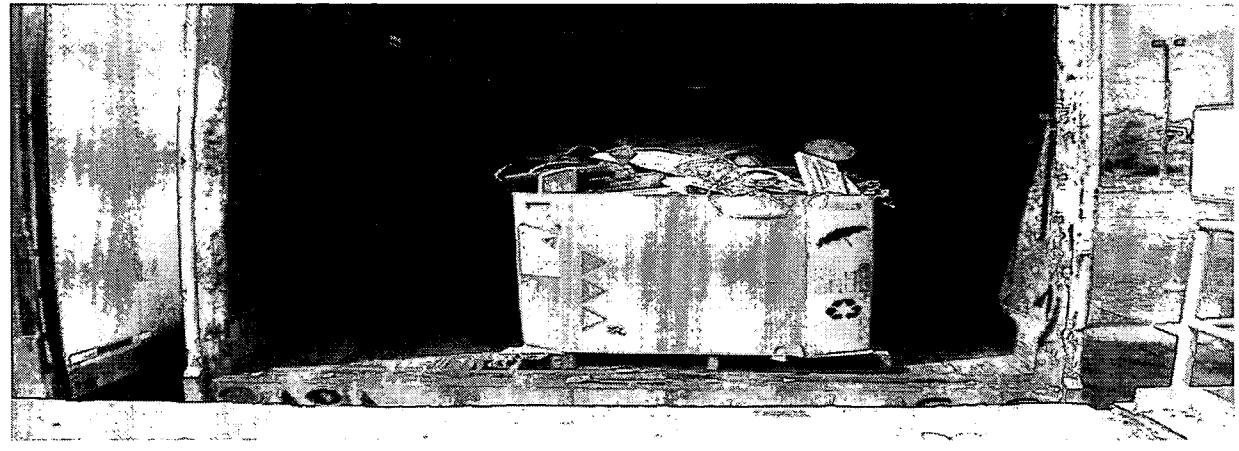




Electronics

Session law 2010-67

63% increase in electronics tonnage from FY2009-10



Overall Recycling of Electronics (tons)	FY11
Manufacturer Televisions (non-local government collections)	1,754.23
Manufacturer Computer Equipment (non-local government collections)	2,895.82
Local Government Televisions	3,019.39
Local Government Other Electronics	4,432.15
TOTAL	12,101.59
Total Pounds Per Capita	2.5

Scrap Tires

122,206 tons, managed by counties and shipped to two NC processing firms

1,508 tons, managed by counties and shipped to out-of-state processors

28,292 tons, tires taken directly to processing firms (privately-funded cleanups or tire dealers not participating in a county program)

152,006 tons =Total tires from citizens of North Carolina



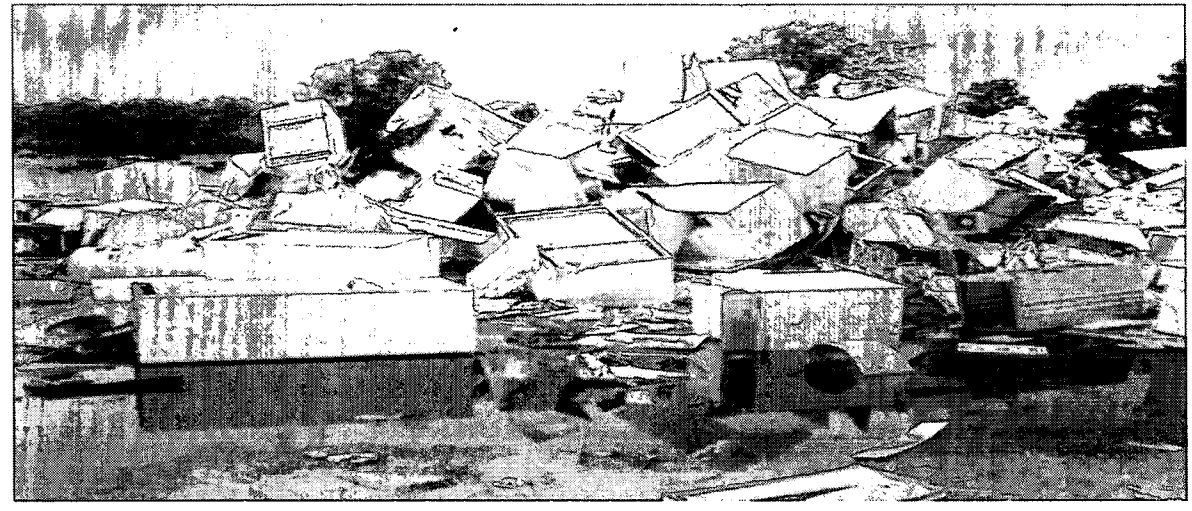
White Goods

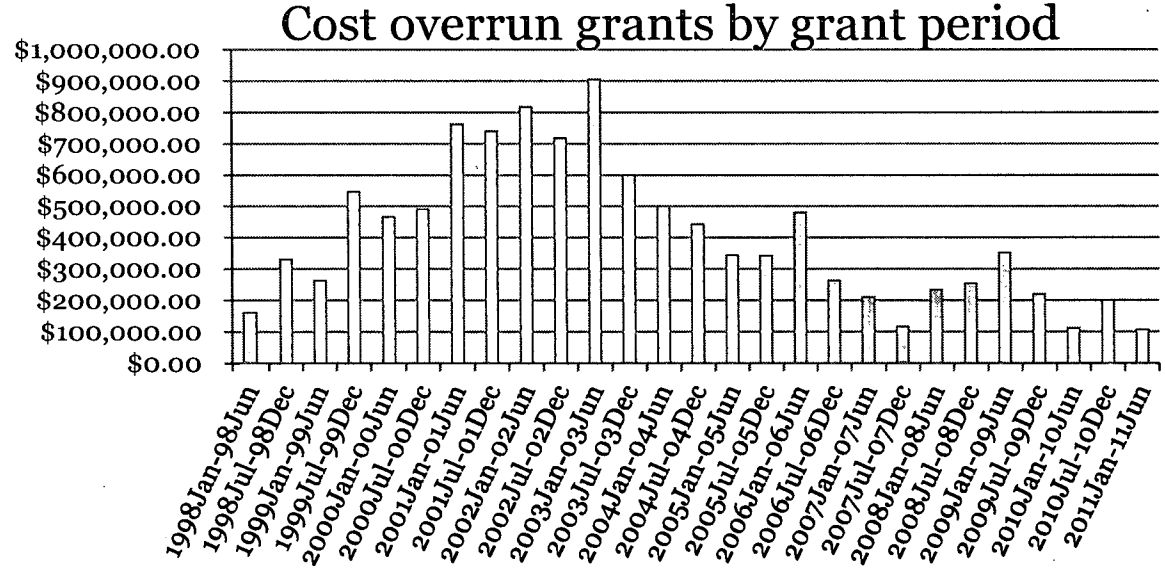
Refrigerators, ranges, stoves, etc.

Can be difficult to dispose of

Can contain chlorofluorocarbon refrigerants

Some NC counties will continue to need support for their programs





Disaster Response

2011 tornadoes and Hurricane Irene

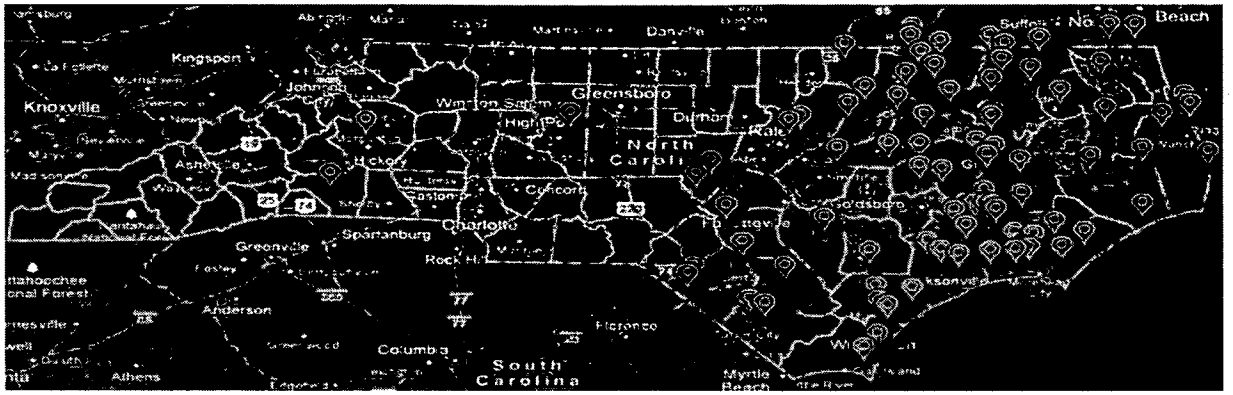
Staff on call 24/7

Primarily managing disaster debris

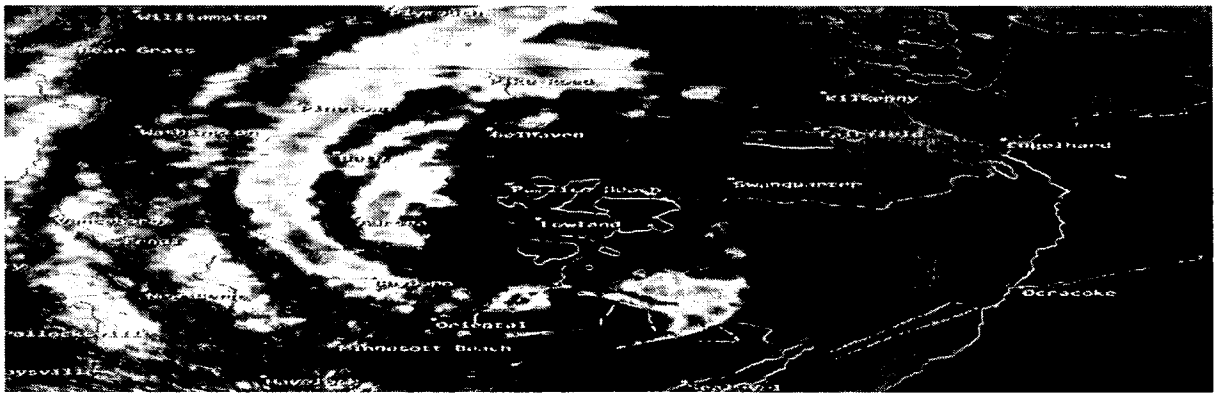
346 sites in NC

74 new sites in 2011

Disaster debris sites



Solid Waste interactive map available on website

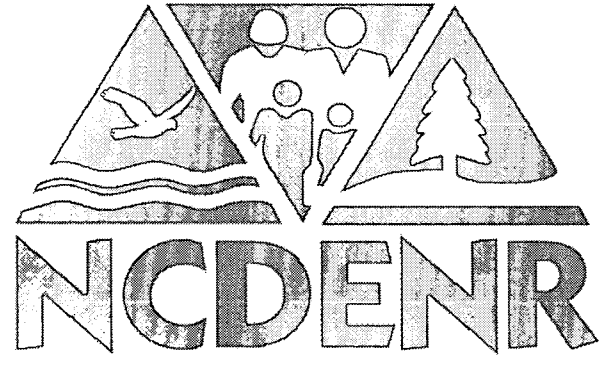


Hurricane Irene

More information available on web at:
http://portal.ncdenr.org/web/wm/sw

Or contact:

Michael E. Scott,
Section Chief
Division of Waste Management – Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646
Phone: (919) 707-8246
Email: michael.scott@ncdenr.gov



DIVISIONS OF WASTE MANAGEMENT AND ENVIRONMENTAL ASSISTANCE AND OUTREACH
SOLID WASTE AND MATERIALS MANAGEMENT EXECUTIVE SUMMARY

The divisions of Waste Management and Environmental Assistance and Outreach provide technical assistance to businesses, industries, local governments and citizens to help them reduce and properly manage waste. The divisions' assistance helps protect and improve citizens' public health and the environment.

The Solid Waste program regulates safe management of solid waste through guidance, technical assistance, regulations, permitting, environmental monitoring, compliance evaluation and enforcement. Waste types handled at North Carolina facilities include municipal solid waste, industrial waste, construction and demolition waste, land-clearing waste, scrap tires, medical waste, compost and septage. The Division of Environmental Assistance and Outreach offers environmental sustainability assistance, including recycling, waste reduction and composting, water and energy efficiency, and education on how to prevent waste and pollution.

North Carolina has 40 permitted municipal solid waste landfills that take waste at approximately $40 per ton – one of the lowest costs for waste disposal on the east coast. North Carolina communities disposed of a total of 9,467,045 tons of municipal solid waste [MSW] and construction and demolition [C&D] waste in waste management facilities located within North Carolina and out-of-state. Owners and operators of North Carolina landfills are required to monitor landfills to detect and respond to releases of contaminants to the environment.

The state per capita disposal rate has fallen below one ton per person per year for the first time since fiscal base year 1991-92. In FY 2010-11 (July 1, 2010 – June 30, 2011), the state disposed of solid waste at a lower rate relative to the last decade, falling 27 percent since fiscal year 2005-06. This is most likely due to continuing recycling efforts, and decreased construction. North Carolina communities disposed of 9,467,045 tons of waste in North Carolina and out-of-state facilities. This represents a small increase of 71,588 tons from the previous fiscal year.

Analysis of the North Carolina MSW landfills indicates a four percent increase in disposal when compared to last year's figures. The increase correlates with a two percent increase in population and a slight upturn in the economy. A linear model suggests that the state will continue to see an increase in waste disposed. As has been seen in the last three years, waste disposal was down because construction and demolition of homes was down, which directly relates to the economy. Historically, good economic growth has lead to increased waste disposal. Landfill bans (such as those for plastic bottles, aluminum and electronics) and an increase in recycling program participation may also keep waste disposal increases to a minimum.

The N.C. Department of Revenue reported Solid Waste Tax collection of $18,310,171, which equates to 9,155,085 tons of taxable solid waste going into landfills within North Carolina and through transfer stations going to landfills in neighboring states.

North Carolina-permitted solid waste management landfills and an incinerator received a total of 8,994,728 tons of solid waste for FY 2010-11. Waste originating from South Carolina and Virginia equaled 177,770 tons. North Carolina exported 618,017 tons for FY 2010-11, a decrease of 22 percent from the previous year. Exported solid waste was sent to South Carolina, Virginia, Tennessee and Georgia.

Recycling of traditional recyclable materials, such as paper, glass, aluminum and steel cans, and plastic, increased 5.4 percent from FY 2009-10 to FY 2010-11. Plastic bottle recycling in particular increased 23.4 percent last year and has increased by close to 45 percent over the last two years. Electronics materials collected by local programs has almost doubled since FY 2008-09, rising from .84 to 1.55 pounds per capita in FY 2010-11. The number of curbside recycling programs reached a record high of 283 in FY 2010-11, serving more than 1.68 million households across the state. Oil filter collection by local government recycling programs has tripled since FY 2008-09, driven in large part by the filter disposal ban. Prices for recyclable materials were extremely strong in FY 2010-11 before declining slightly at the end of the fiscal year, indicating healthy market demand for recovered commodities.

It is recommended that the department continue to evaluate the effectiveness of the state's disposal bans. The department should coordinate efforts among local governments and industry to ensure disposal capacity is available in all areas within North Carolina. It is also recommended that the department encourage the diversion of identified large solid waste streams, such as food and wood wastes, from large generators of these wastes. Continued work towards expansion of the collection of plastic bottles and other recyclables is advised in order to ensure that capacity of the growing recycling markets in North Carolina is met.

Solid Waste Management Annual Report Recycling

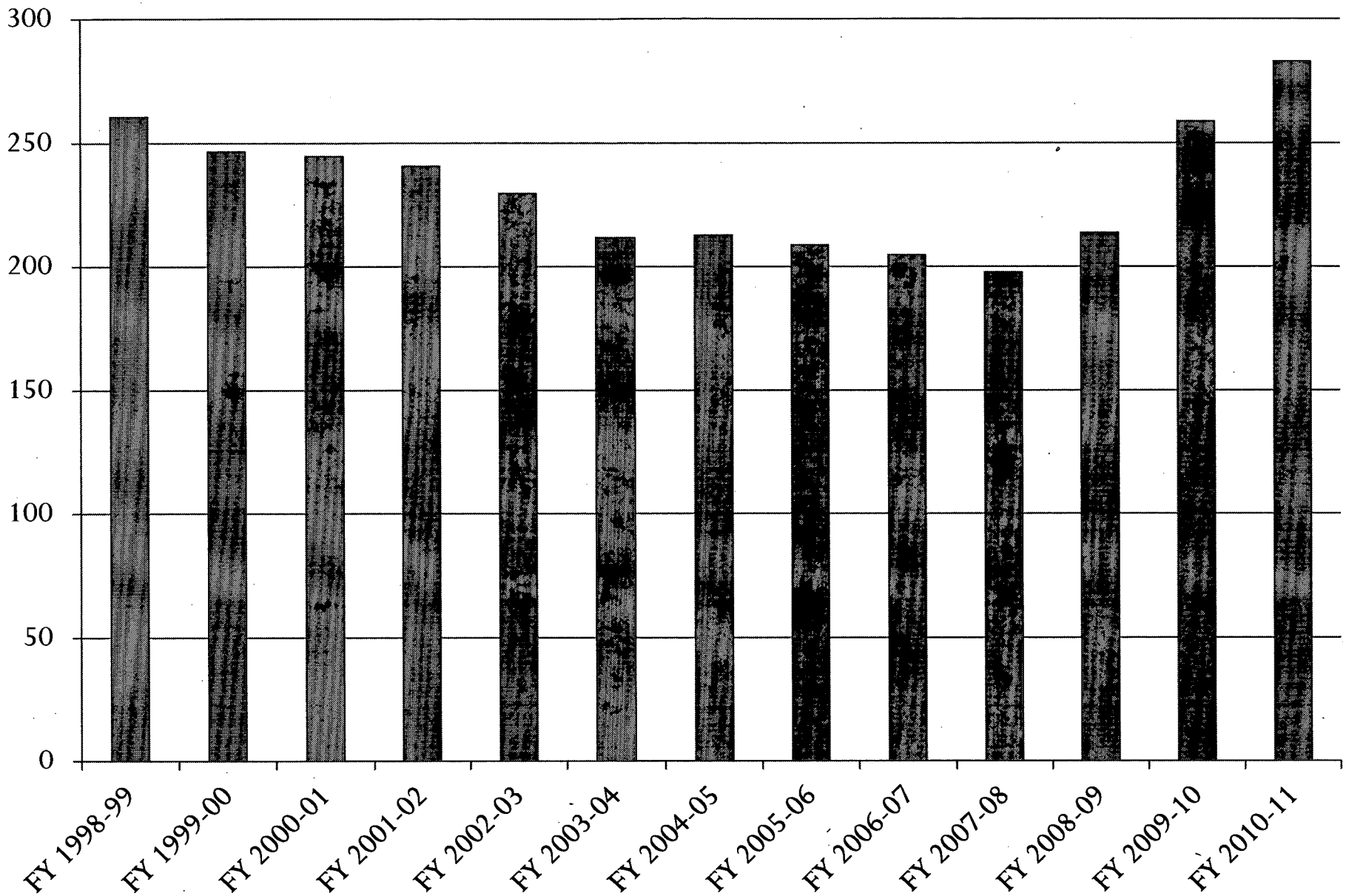
Scott Mouw

NC Division of Environmental Assistance & Outreach

Recycling Trends in North Carolina

- Positive growth in recycling programs and recycling tonnage.
- Disposal bans helping increase material recovery.
- Breakthroughs in the recycling of new materials.
- Recycling contributing to job and business growth.
- Recycled materials essential to NC manufacturers.

Curbside Recycling Programs



Curbside – Transition to Carts

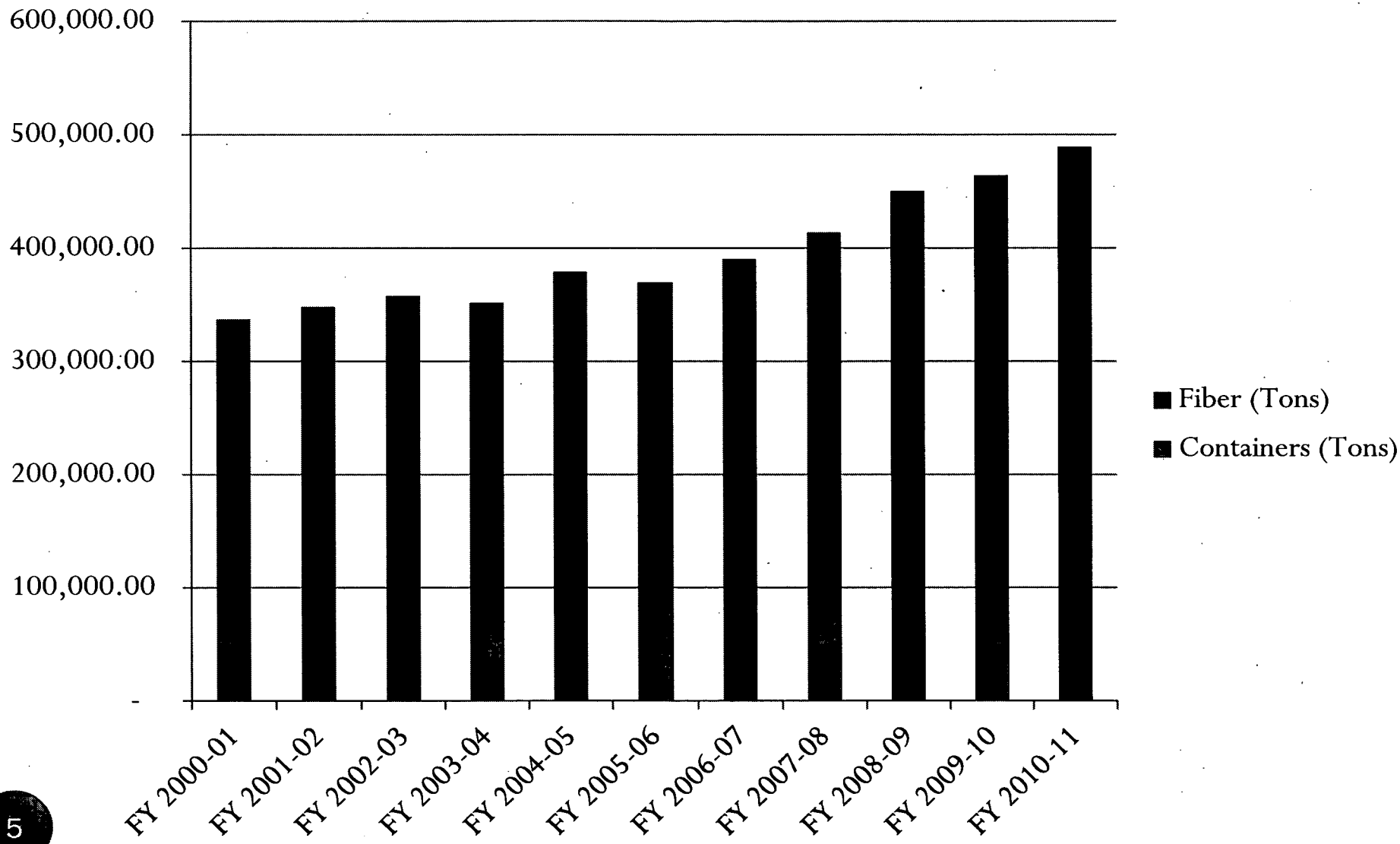


- Many major cities now using carts:

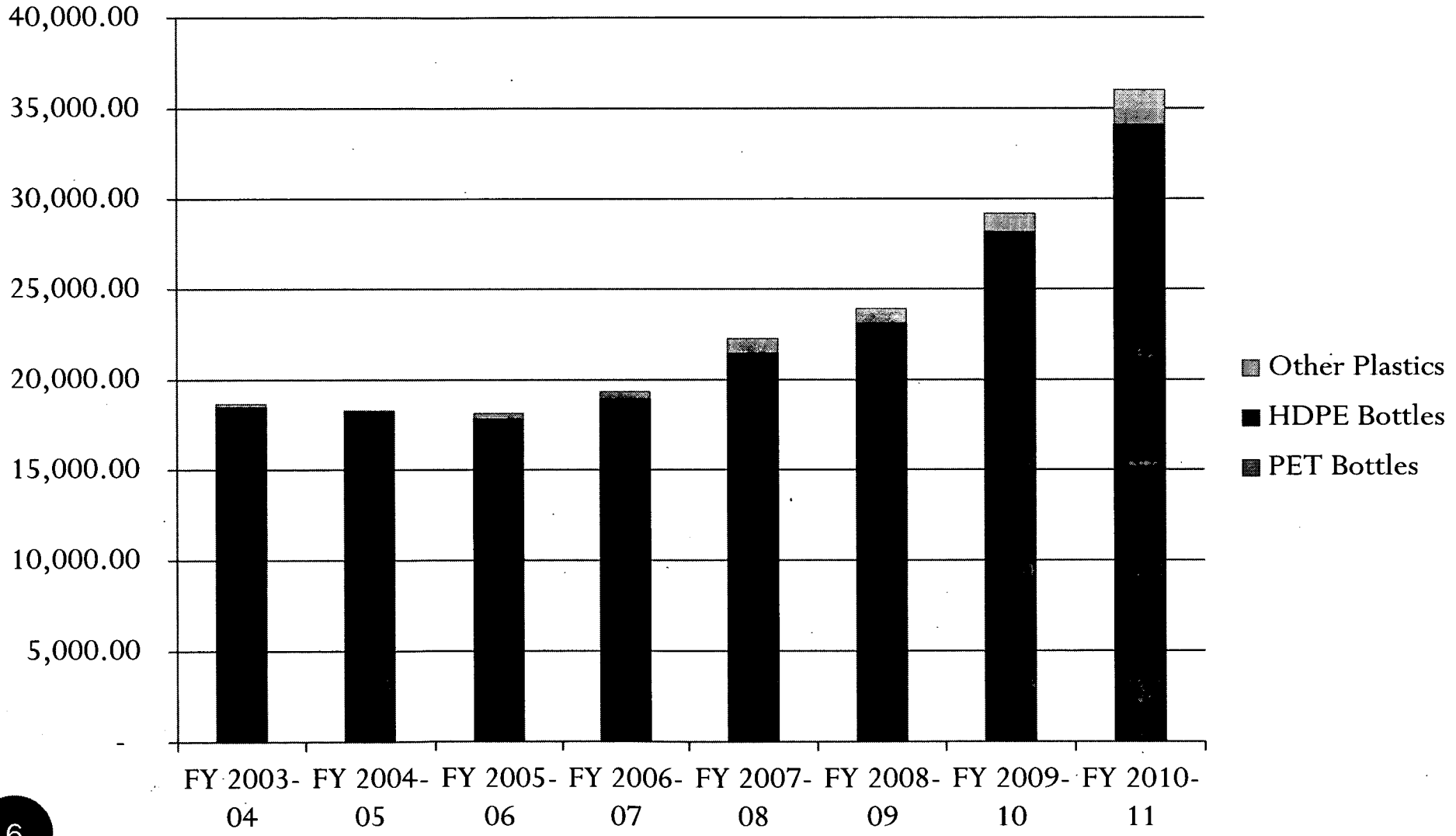
Greensboro	Charlotte
Fayetteville	Durham
High Point	Jacksonville
Raleigh	Winston-Salem

- New small and medium sized town programs starting with carts.
- Estimated total # of households who received a cart in 2011:
  - 400,000
  - 12,000,000 gallons of additional household recycling capacity
- Cart trend will continue to grow.

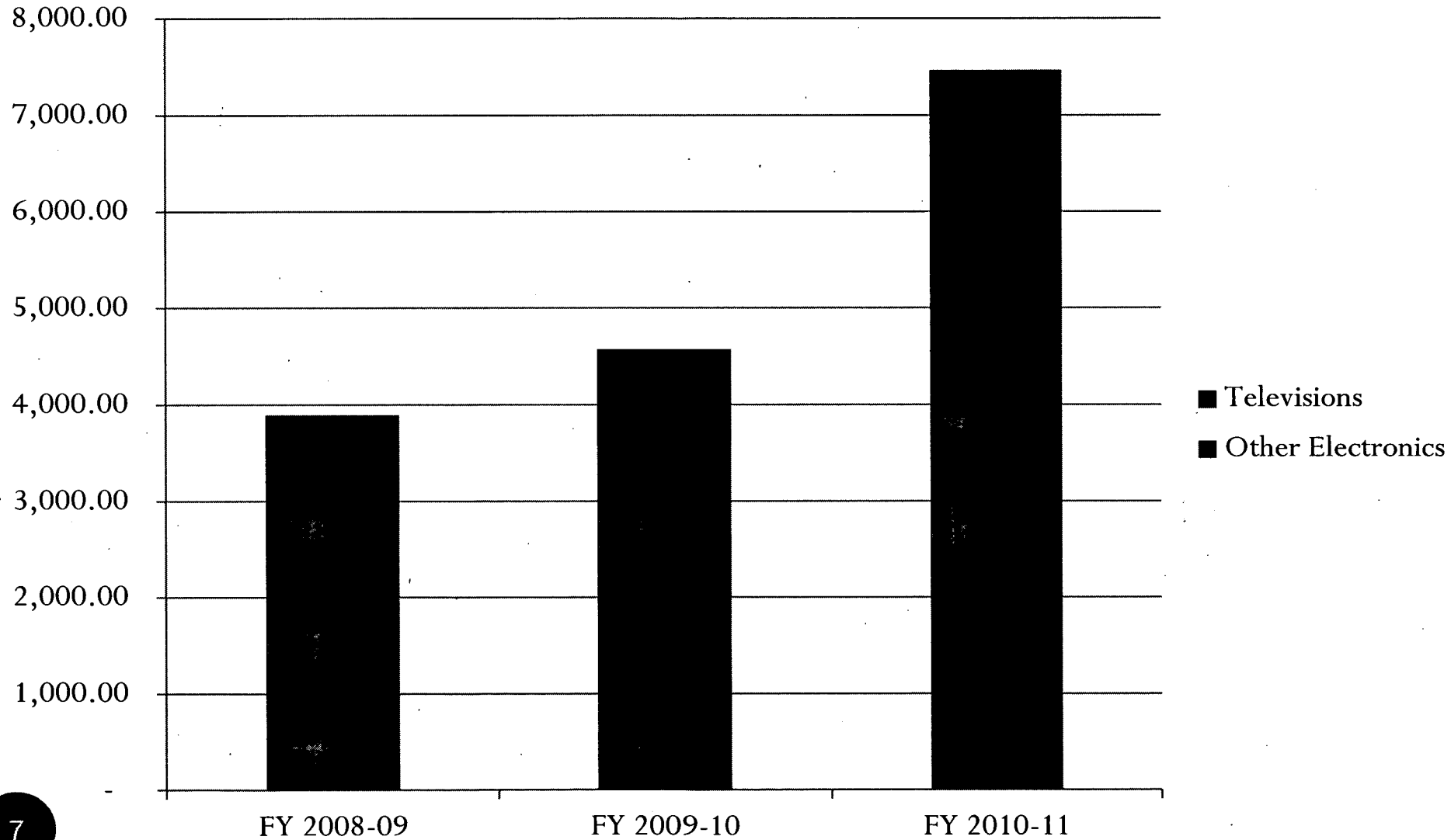
Recovery of Paper and Container Materials by NC Local Governments



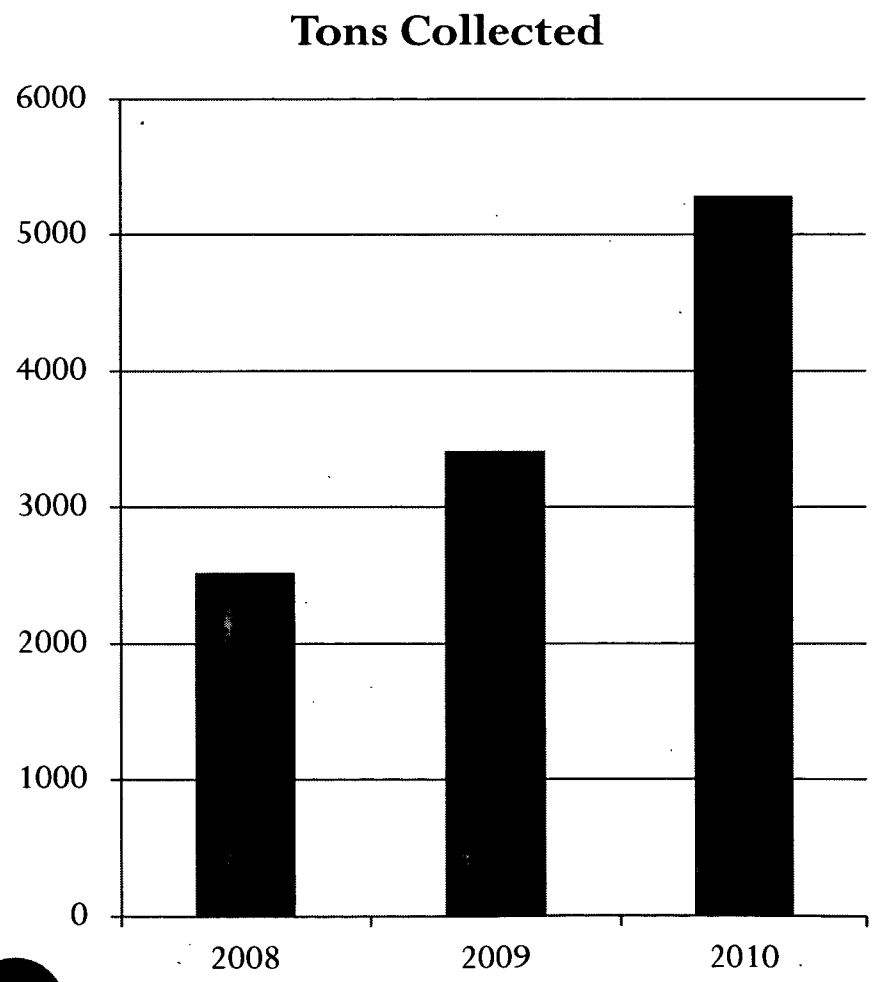
Recovery of Plastic Bottles in NC by Local Government Programs

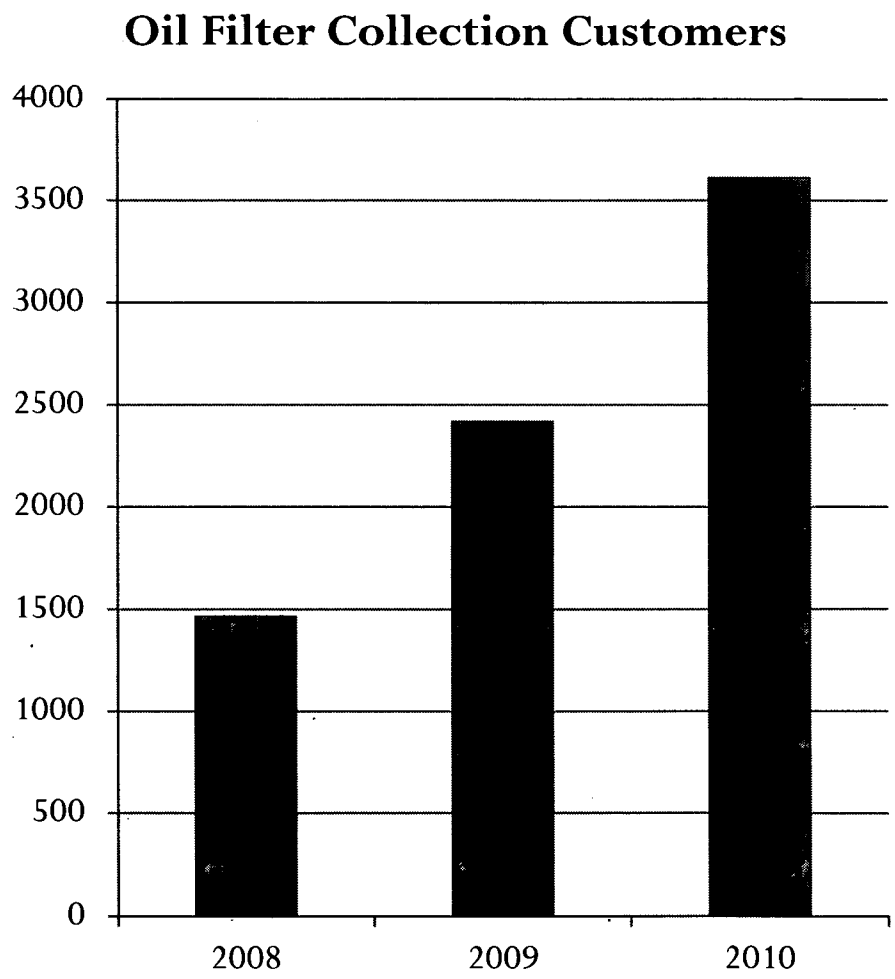


Local Government Electronics Collection (in tons)



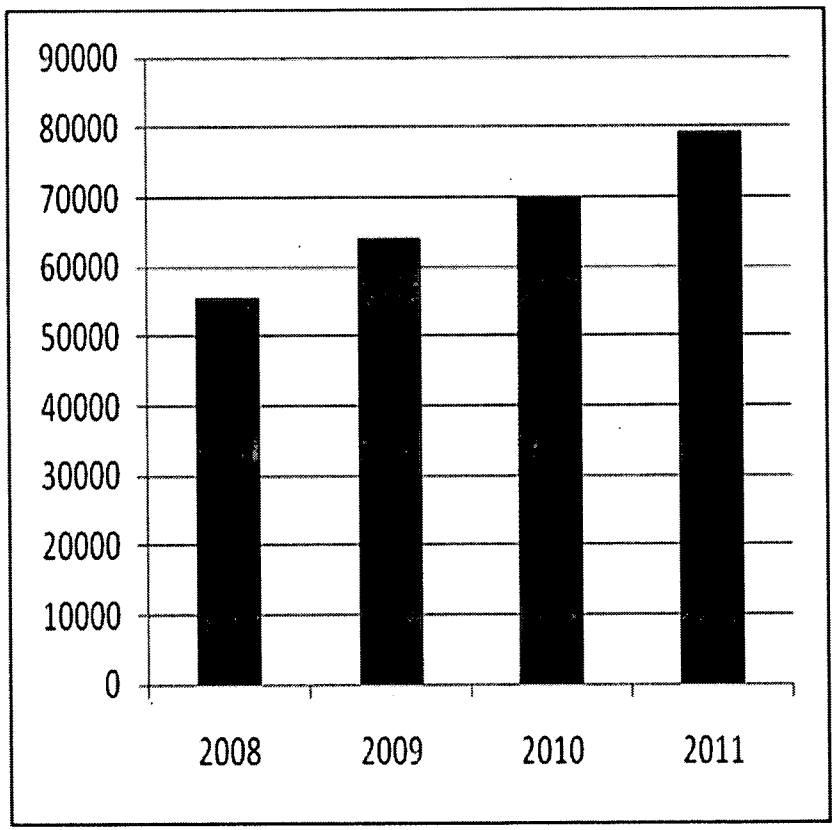
Effects of Oil Filter Disposal Ban for Filter Recycling Companies



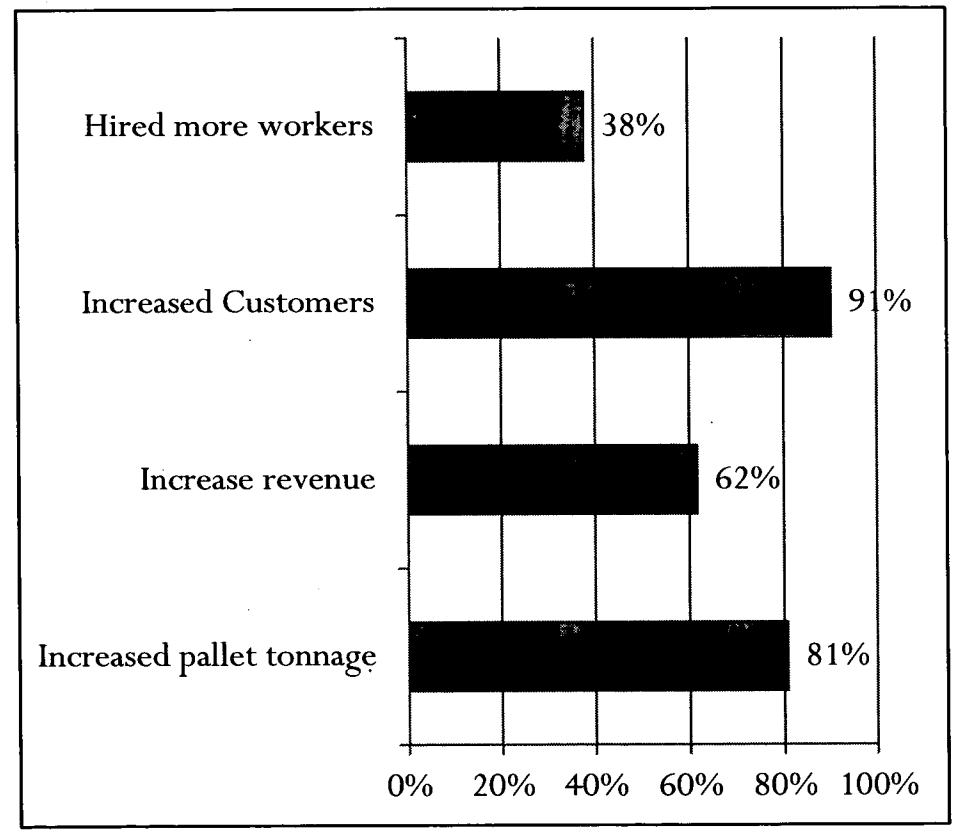


Effects of Pallet Disposal Ban: Pallet Recyclers

Private Wooden Pallet Recovery in North Carolina, 2008-2011 (in tons)

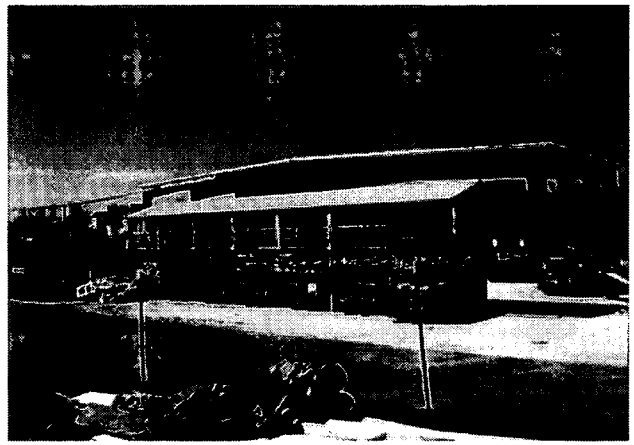


Effects on Pallet Recycling Businesses



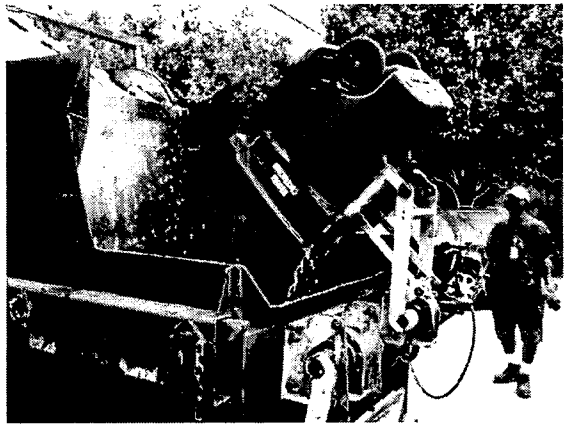
- Over half of pallet recyclers said the disposal ban helped their business grow.

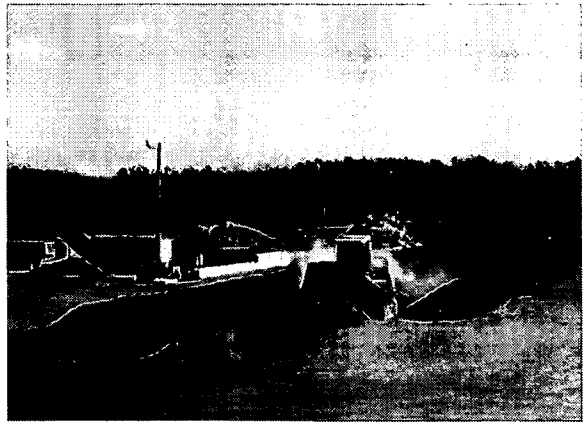
Construction & Demolition Waste and Organics Recycling



- Increasing interest and activity in C&D recycling, despite construction economy - amount of tonnage recycled at C&D landfills has doubled since 2005.
- Main challenge: relatively low market value for some C&D materials.





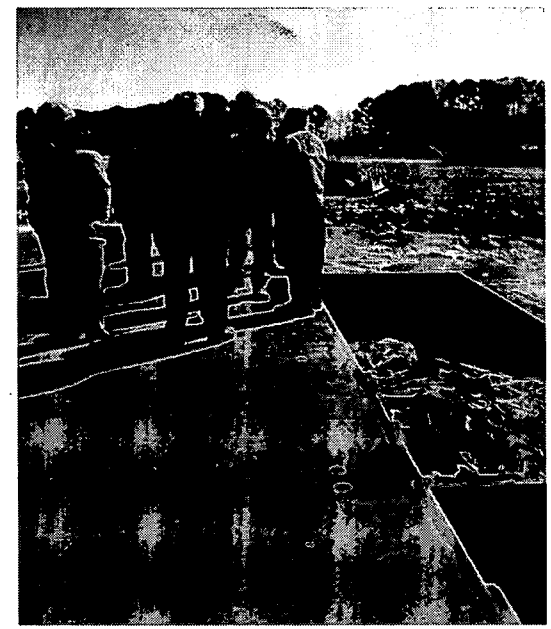


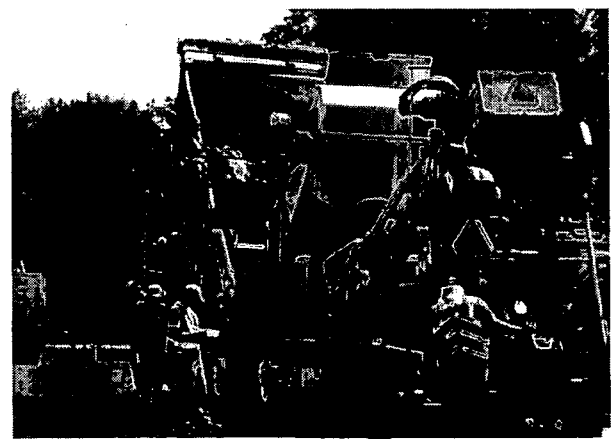
- Growth in commercial composting facilities.
- Separated food waste collection still at small scale but expanding

Shingle Recycling

- Early adopters: Greenville Paving and Pitt County
- Regulatory issues resolved.
- Oil prices helping increase interest and improve economics of shingle recycling.
- Many asphalt paving companies now scrambling to source materials.
- Approximately 264,000 tons in potential diversion; estimated currently at 40,000 tons.

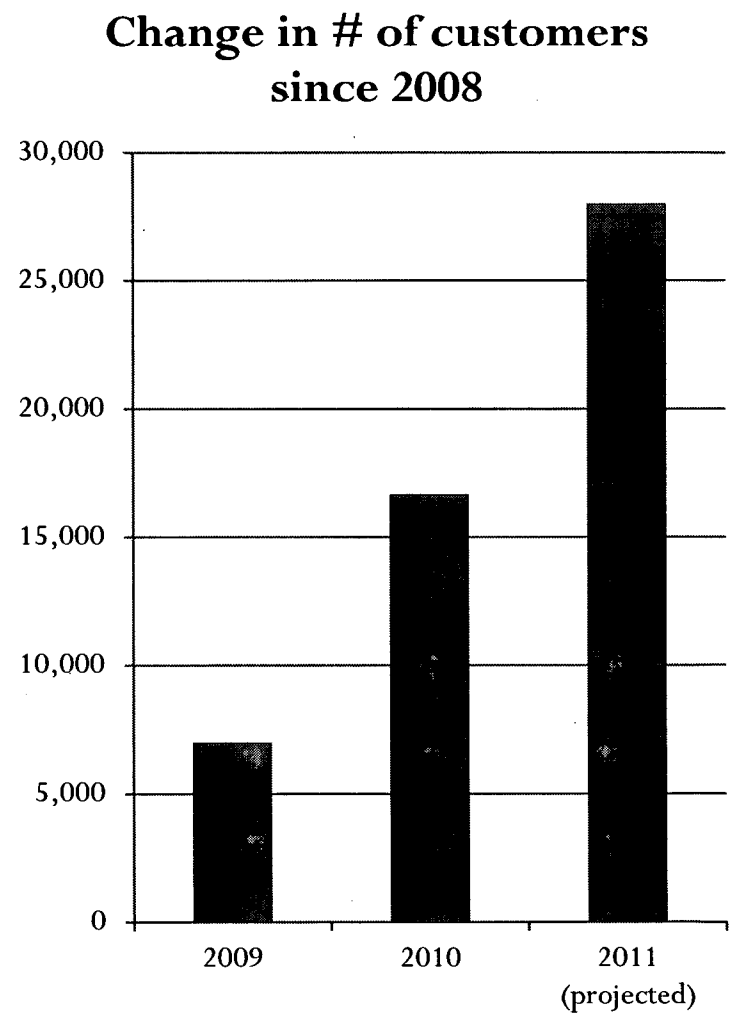




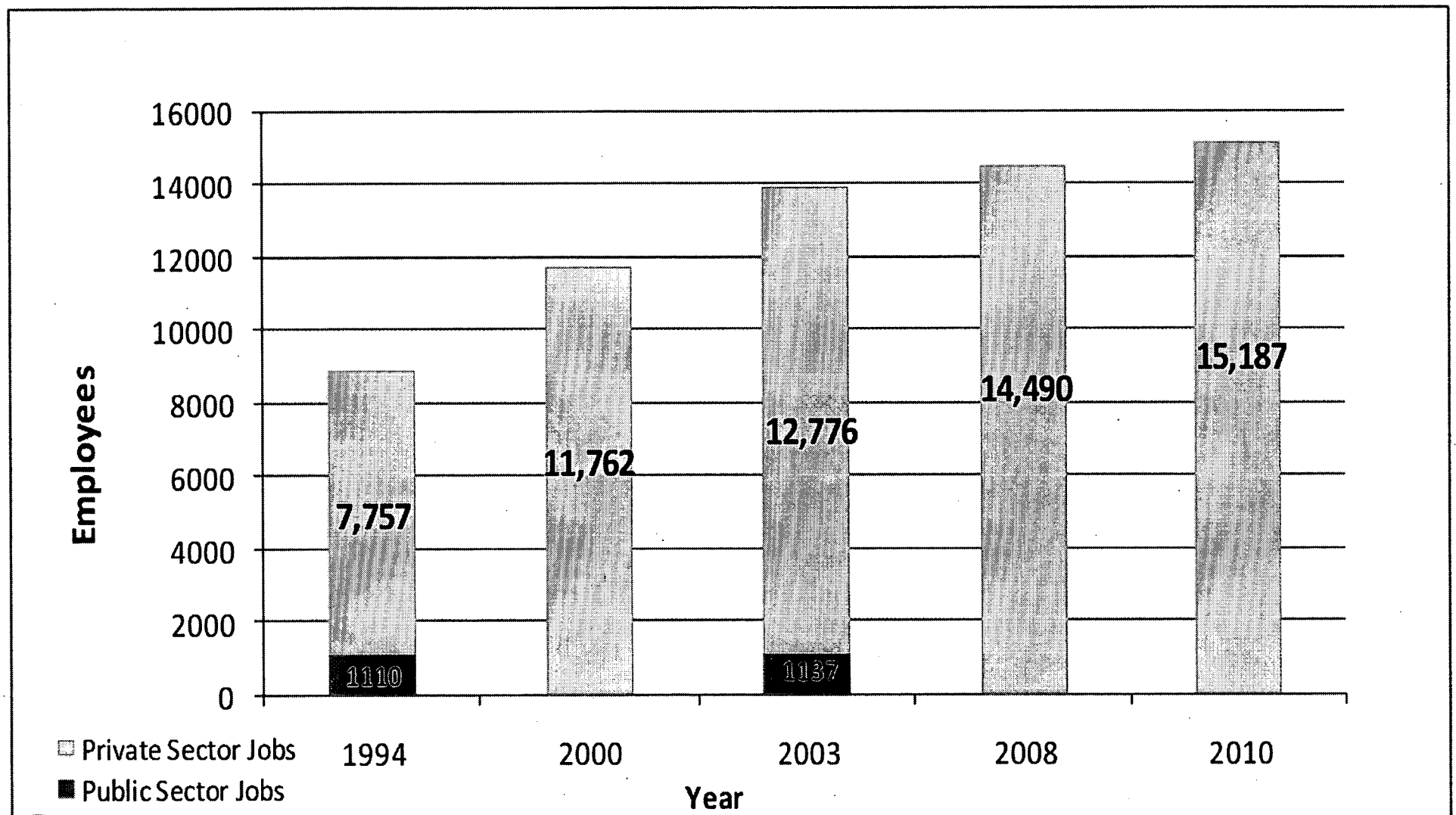


Independent Recycling Haulers

- Small haulers and new recycling start-ups playing an increasing role in material collection:
  - ABC customers
  - Other commercial customers
  - Unincorporated residences
- Examples:
  - Green Pieces, Stanly County area – 130 to 2290 customers in four years.
  - Hatteras Recycling, Dare County – 335 to 1100 customers



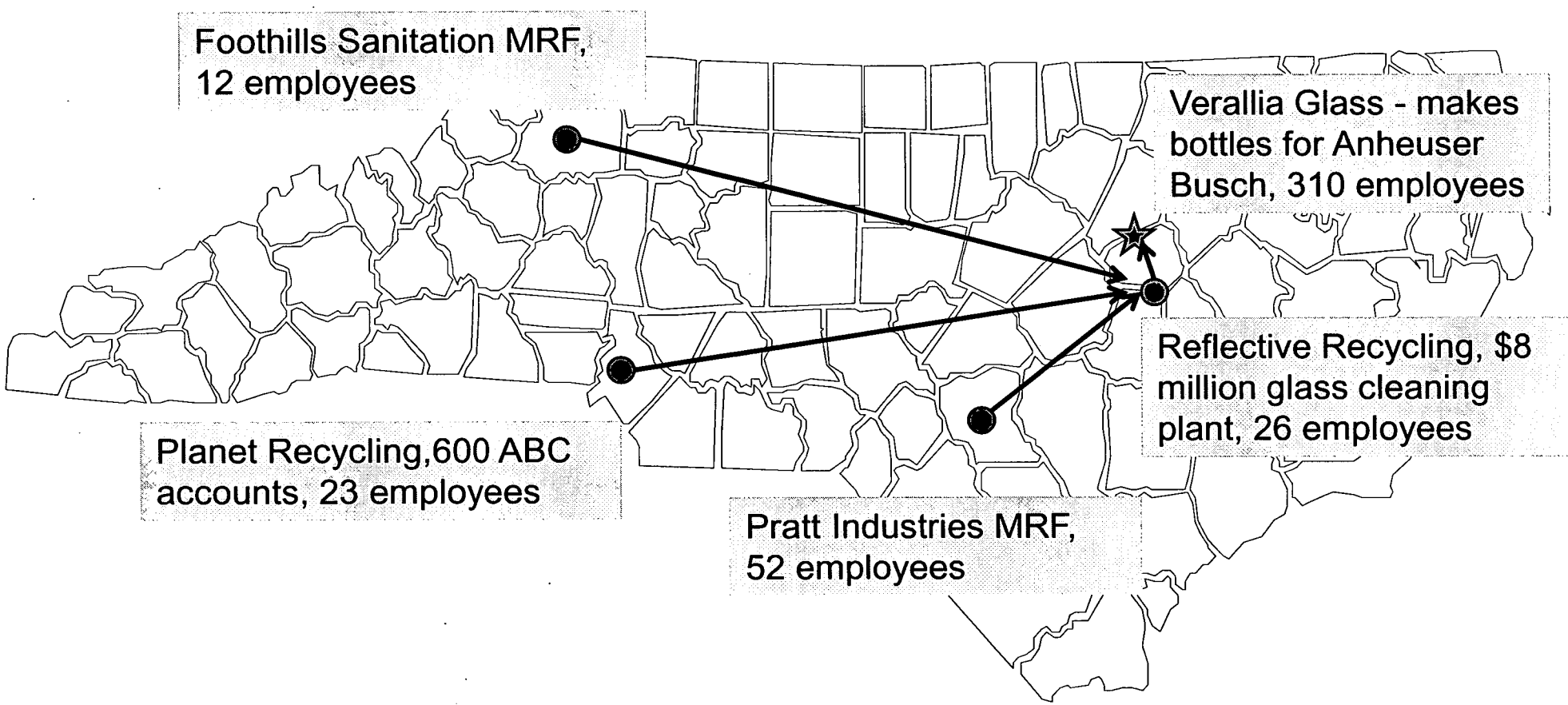
NC Recycling Employment Trends



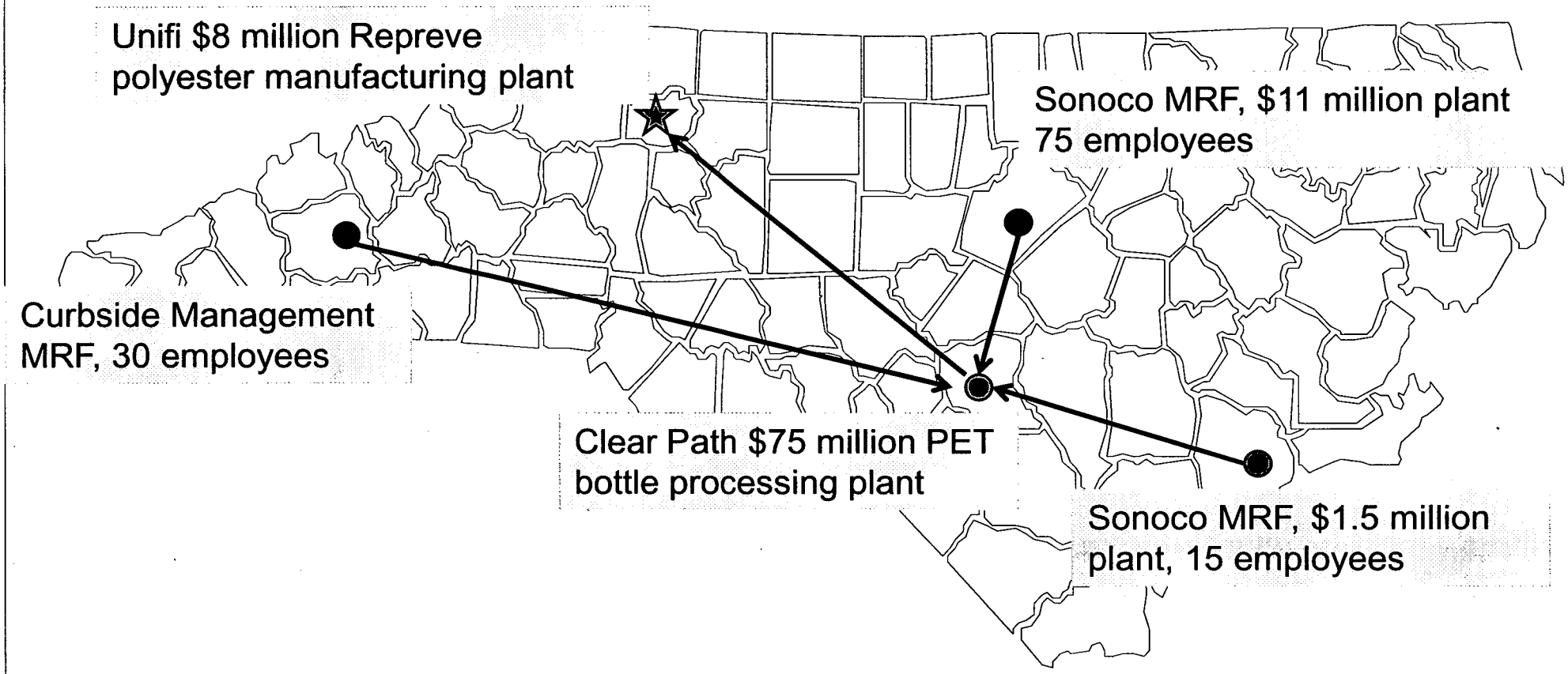
Examples of Recycling Economic Development in NC in 2011

- Electronics Recycling International: announcement of new electronics recycling facility in Badin with projected 150 jobs.
- Synergy: completion of $30 million electronics processing facility in Madison.
- McGill Environmental: $2 million upgrade of composting facility in Sanford.
- New material recovery facilities (MRFs) built by Sonoco (Charlotte), North Davidson Sanitation (Welcome), Benfield Sanitation (Mooresville), and American Recycling (Candler)
- Reflective Recycling: new $8 million glass processing facility in Wilson, NC
- Unifi: new $8 million textile manufacturing facility converting plastic bottle plastic into polyester in Yadkinville.

Examples of Recycled Glass Movement in NC



Examples of Recycled PET Movement in NC



Questions?

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NC Division of Environmental Assistance & Outreach
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scott.mouw@ncdenr.gov

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

To: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FISCAL RESEARCH
Mr. Mark Trogdon, Acting Director, Fiscal Research Division

JOINT LEGISLATIVE COMMISSION ON GOVERNMENTAL OPERATIONS
The Honorable Thom Tillis, Speaker of the House of Representatives
The Honorable Phil Berger, President Pro Tempore

FROM: Kari Barsness KKB
Director of Legislative and Intergovernmental Affairs

SUBJECT: Inactive Hazardous Waste Sites Program Report (Division of Waste Management)

DATE: November 21, 2011

Pursuant to G. S. 130A-310.10 and S. L. 2011-186, the Division of Waste Management shall submit to the Environmental Review Commission, the Fiscal Research Division and the Joint Legislative Commission on Governmental Operations a report on the Inactive Hazardous Waste Sites by October 1st of each year. Please consider the Inactive Hazardous Waste Sites Program's 2011 Annual Report attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 707-8616 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Assistant Secretary for Environment, Robin W. Smith
Dexter R. Matthews, Director, Division of Waste Management
Kristin Walker, Fiscal Research Division
Lanier McRee, Fiscal Research Division
Claire Hester, Fiscal Research Division
Mariah Matheson, Research Division

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
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One North Carolina Naturally

Report to the North Carolina General Assembly
on the
Inactive Hazardous Sites Program

October 2011

North Carolina Department of Environment and Natural Resources
Division of Waste Management
Superfund Section

http://portal.ncdenr.org/web/wm/sf/ihshome

EXECUTIVE SUMMARY

The Inactive Hazardous Sites Program in the Department of Environment and Natural Resources' (DENR) Division of Waste Management (DWM) was created by the North Carolina General Assembly to identify, investigate and cleanup properties contaminated with hazardous substances. Pursuant to G.S. 130A-310.10, the program is required to report to the General Assembly annually. All of the reporting requirements specified under N.C.G.S. 130A-310.10 are met in this report. Since the start of the program in 1987 3,044 chemical spill or disposal sites and old, unlined dumps or landfills (pre-regulatory) that are not being addressed by other environmental authorities have been catalogued. Of this number, 2,592 still require work to address public health or environmental hazards.

Of the 2,592 remaining open cases, 676 are old, unlined landfills that predate solid waste permitting rules. Half of the proceeds of a statewide solid waste disposal tax are directed by statute to the Inactive Hazardous Sites Cleanup Fund for purposes of addressing contamination at these pre-regulatory landfills.

DWM has established contracts with private firms to assess and remediate the pre-regulatory landfill sites. In fiscal year (FY) 2010-11, DWM contractors completed first-phase remedial investigations at 18 sites. DWM has completed the next phase of assessment (delineating the contamination) at 12 sites. An additional 26 first-phase investigations and 24 contaminant delineation investigations were underway in FY 2010-11. DWM also provided oversight and reimbursement for assessment activities undertaken by local governments on old landfill sites (one first phase and three contamination delineation phases). DWM sampled 119 private wells on or near old landfill sites and provided alternate water supplies to four homes that had highly-contaminated wells.

Limited funds are available to assess and remediate non-landfill sites where the owner lacks the financial resources to do it or where the person responsible for the contamination is unknown. The unobligated cash balance in the Inactive Hazardous Sites Cleanup Fund at the end of FY 2010-11 was $135,806. DWM has estimated the cost of addressing high priority orphan hazardous sites, thus far identified, at $120,595,206.

The program recovered funds for assessment and remediation through bankruptcy claims for several sites. With the assistance of the Attorney General's Office, the program recovered $3,750,000 from Chemtura for two sites; $1,831,982 from Lyondell for four sites; and $42,738 from Mark IV for three sites. These new monies go into special trust funds, since the payments can only be used on those sites in accordance with the bankruptcy settlement agreements.

The following provides a status report on the Inactive Hazardous Sites Program for the fiscal year.

Total Number of (Open) Inactive Hazardous Sites	
Chemical spill or disposal sites	1,916
(68 new sites cataloged this reporting year)	
Old unlined dumps and landfills	676
Current **Total Number (Open) Sites**	**2,592**
Sites Completed In FY 2010-11	14
Total Number Sites Requiring No Further Action	**452**
(Seven other sites reactivated based on new information)	
Active Responsible Party Cleanup Actions	
Registered Environmental Consultant (REC)-Supervised Site Cleanup Actions	126
Staff-Supervised Responsible Party Assessment/Cleanup Actions	193
Total	**319**
Pre-Regulatory Landfill Assessment Phases Completed FY2010-11	34
Pre-Regulatory Landfill Assessment Phases Ongoing	50
Homes Provided Alternate Water at Pre-regulatory Landfill Sites	4
State-funded Priority Orphan Site Assessments/Remediation or Alternate Water Provided	14

Not reported in the numbers above are other site actions conducted, including filing bankruptcy claims, emergency response activities, responding to requests for "no further action status" reviews that are not the result of approved voluntary remedial actions, prioritization of sites, responding to public inquiries and issuing Notices of Regulatory Requirements for newly-reported sites.

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I. THE INACTIVE HAZARDOUS SITES INVENTORY AND THE INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST

The Inactive Hazardous Sites Branch in DENR's Division of Waste Management implements the Inactive Hazardous Sites Response Act of 1987 (IHSRA). The IHSRA requires DENR to maintain a catalog of inactive hazardous substance or waste disposal sites. The program has cataloged 2,368 chemical spill sites and 676 old unlined landfills. Of these, 452 sites now have all work completed and are assigned "No Further Action" status. Fourteen completed all work and were assigned "No Further Action" status in FY2010-11. Table 2, on page 4, provides a list of sites assigned "No Further Action" status in FY2010-11. Table 1, on page 2, provides a list of sites added to that inventory since the last program report in October 2010. A total of 68 new sites were added this past fiscal year and seven sites had to be reopened due to new information on contamination.

N.C.G.S. 130A-310.2 requires DWM to prioritize sites catalogued in the Inactive Hazardous Sites Inventory based on the threat to public health and the environment. Sites are first cataloged in the "Evaluations Pending" category of the Inactive Hazardous Sites Inventory until DWM ranks the site based on rules found in 15A NCAC 13C .0200. Once ranked, sites are transferred to the Inactive Hazardous Waste Sites Priority List. The priority list is provided in an appendix to this report organized in order of the threat to public health and the environment. The entire inventory of both ranked and unranked sites can be provided upon request.

TABLE 1. INACTIVE HAZARDOUS SITES INVENTORY
LIST OF NEW AND REACTIVATED SITES FY 2010-11

NEW SITES:

ID Number	*Site Name*	*City*	*County*
NONCD0001599	A.E. VANDIFORD STORE	ORMANDSVILLE	GREENE
NONCD0002276	AFFORDABALE AUTO REPAIR	GASTONIA	GASTON
NONCD0001910	ALLEN BRADLEY CO	GREENSBORO	GUILFORD
NONCD0001967	AMERICAN DISTILLATION, INC	LELAND	BRUNSWICK
NONCD0002569	ARVIN MERITOR, INC	FLETCHER	HENDERSON
NONCD0002529	BASSETT FURNITURE-WEIMAN PLANT	RAMSEUR	RANDOLPH
NONCD0001079	BELGRADE POND PESTICIDE DRUMS	MAYSVILLE	ONSLOW
NONCD0002367	BETSY JOHNSON REGIONAL HOSPITAL	DUNN	HARNETT
NONCD0002515	BOYETTE PROPERTY	WILSON	WILSON
NONCD0002065	CARBON BLACK HOUSE	ASHEBORO	RANDOLPH
NONCD0001713	CARDINAL SHOPPING CENTER	WINSTON-SALEM	FORSYTH
NONCD0002480	CHAPEL HILL CLEANERS	CHAPEL HILL	ORANGE
NONCD0001690	CITY OF GOLDSBORO MAINTENANCE	GOLDSBORO	WAYNE
NONCD0002395	CONCRETE SERVICE CO/CEMEX/READY MIX	INDIAN TRAIL	UNION
NONCD0001297	CRADY COURT SITE	STANTONSBURG	WILSON
NONCD0002758	CROWN NC 650 & HICKORY SQUARE	CHARLOTTE	MECKLENBURG
NONCD0002205	DANNY ROBERTS/INTERSTATE BP	DURHAM	DURHAM
NONCD0001430	DELL MOORE PROPERTY	RALEIGH	WAKE
NONCD0002624	DOBSON EXTERMINATORS/US CELLULAR	JACKSONVILLE	ONSLOW
NONCD0002765	DUDLEY PRODUCTS	KERNERSVILLE	FORSYTH
NONCD0001100	DUPONT DUMP	NAVASSA	BRUNSWICK
NONCD0001987	FAIRWAY ONE STOP NO. 5	WINSTON-SALEM	FORSYTH
NONCD0001229	GENERAL STEEL DRUM CORP	CHARLOTTE	MECKLENBURG
NONCD0001997	HICKORY-LINCOLNTON HWY WELLS (SWINKS)	NEWTON	CATAWBA
NONCD0002602	HONEYWELL INTERNATIONAL	MAIDEN	CATAWBA
NONCD0002467	HWY 87 METHANOL SPILL		BLADEN
NONCD0001860	I85 & HWY73 CHLORINATED SOLVENTS	CONCORD	CABARRUS
NONCD0002757	IDLEWILD RD CARBON TETRACHLORIDE	MINT HILL	MECKLENBURG
NONCD0001362	JAY'S HYDRAULICS (FRMR)	PITTSBORO	CHATHAM
NONCD0002522	JIFFY MART	ROCKY MOUNT	EDGECOMBE
NONCD0002044	KAPP ST FERTILIZER SPILL	DOBSON	SURRY
NONCD0001665	KMART AUTO SERVICE FACILITY (FRMER)	CHARLOTTE	MECKLENBURG
NONCD0001285	MASON LUMBER CO (FRMR)	WASHINGTON	BEAUFORT
NONCD0001667	MCGILL'S MUFFLER SHOP	FAYETTEVILLE	CUMBERLAND
NONCD0001286	MOSS FARM RD PCE	HICKORY	CATAWBA
NONCD0002435	MY FAVORITE MARTIN TRUCK ACCIDENT	MARION	MCDOWELL
NONCD0001640	NAGS HEAD SHELL	NAGS HEAD	DARE
NONCD0002471	NAPLES ASHEVILLE HWY PCE	NAPLES	HENDERSON
NONCD0002490	NATIONAL FLEET SUPPLY	CHARLOTTE	MECKLENBURG
NONCD0001875	NCDOT MAINTENANCE STATION (FRMR)	WILMINGTON	NEW HANOVER
NONCD0001789	OAKLEY'S GROCERY	KING	STOKES
NONCD0002031	OLD MOUNTAIN & BUFFALO SHOALS RDS	STATESVILLE	IREDELL

ID Number	*Site Name*	*City*	*County*
NONCD0001333	OMNISOURCE SE/ATLANTIC SCRAP &	CHARLOTTE	MECKLENBURG
NONCD0001425	PETERBILT OF DUNN "A" PARCEL	DUNN	HARNETT
NONCD0001419	PETERBILT OF DUNN "B" PARCEL	DUNN	HARNETT
NONCD0001350	PHOENIX RECYCLING	HAVELOCK	CRAVEN
NONCD0002482	PIRICZKY/PRICE SERVICE STATION	ARAPAHOE	PAMLICO
NONCD0001354	REAGENTS, INC	CHARLOTTE	MECKLENBURG
NONCD0002087	ROXOBEL TEXACO	ROXOBEL	BERTIE
NONCD0001034	SALEM ST RESIDENTIAL DUMP	THOMASVILLE	DAVIDSON
NONCD0002778	SHELBY FARMERS MARKET	SHELBY	CLEVELAND
NONCD0002669	STEPHENS TIRE FIRE	CHADBOURN	COLUMBUS
NONCD0001386	SUPERIOR ESSEX	TARBORO	EDGECOMBE
NONCD0000035	T.L. HERRING	WILSON	WILSON
NONCD0001927	TENNECO ALBERMARLE & LAWYERS RD	CHARLOTTE	MECKLENBURG
NCR000010272	UNC-COGENERATION FACILITY	CHAPEL HILL	ORANGE
NONCD0002408	UNC-PHILLIPS HALL	CHAPEL HILL	ORANGE
NCN000410585	UNIONVILLE-INDIAN TRAIL DRUM	MONROE	UNION
NCN000410583	VILLA MHP-BATTERYDUMP	KANNAPOLIS	CABARRUS
NONCD0002761	VILLAGE CLEANERS	LAURINBURG	SCOTLAND
NCN000410661	VIRGINIA CAROLINA CHEMICAL	CHARLOTTE	MECKLENBURG
NONCD0001403	WAKEFIELD CITGO	RALEIGH	WAKE
NONCD0001215	WAYNE'S AUTO SALVAGE	DAVIDSON	CABARRUS
NONCD0002124	WELDON MILL (FRMR)	WELDON	HALIFAX
NONCD0002538	WEST HAMPTON SUBDIVISION LOT #9	CHAPEL HILL	ORANGE
NONCD0002681	WOOD TREATERS, INC	ROCKY POINT	PENDER
NONCD0001212	WOODLAND MILLS CORP	MILL SPRING	POLK
NONCD0001436	YORKSHIRE DRIVE	GREENSBORO	GUILFORD

REACTIVATED SITES:

ID Number	*Site Name*	*City*	*County*
NCD045924487	CAROLINA ALUMINUM/EASCO	WINTON	HERTFORD
NCD091219188	DALY-HERRING COMPANY/PRILLAMAN	KINSTON	LENOIR
NONCD0001014	ETHAN ALLEN FURNITURE	OLD FORT	MCDOWELL
NCD006390561	RELIANCE UNIVERSAL OF KENTUCKY	HIGH POINT	GUILFORD
NCD024852675	SCHULHOFFER JUNKYARD	WAYNESVILLE	HAYWOOD
NCD083673681	SINGER CO/KEARFOTT DIV	BLACK MOUNTAIN	BUNCOMBE
NCD041415019	VALSPAR CORPORATION	HIGH POINT	GUILFORD

TABLE 2. INACTIVE HAZARDOUS SITES INVENTORY
SITES RECEIVING NO FURTHER ACTION STATUS FY10-11

ID Number	*Site Name*	*City*	*County*
NCD083682583	BROYHILL FURNITURE	NEWTON	CATAWBA
NONCD0001524	COCA COLA WAREHOUSE	KINSTON	LENOIR
NONCD0001555	COX MOBILE HOME PARK	ASHEBORO	RANDOLPH
NONCD0002847	DISTRICT 12 HEADQUARTERS-NCFS	MOUNT HOLLY	GASTON
NCN000410250	ETHAN ALLEN FURNITURE	OLD FORT	MCDOWELL
NONCD0001776	GLEN CLARENCE CLINE PROP (SOLVENTS)	CHARLOTTE	MECKLENBURG
NONCD0001059	HARRIS TRUCKING EQUIPMENT (FORMER)	NEW BERN	CRAVEN
NONCD0001093	KIDDE FIRE FIGHTING	ANGIER	HARNETT
NONCD0001285	MASON LUMBER CO (FRMR)	WASHINGTON	BEAUFORT
NCD095119210	MCGRAW EDISON COMPANY	GREENVILLE	PITT
NCN000410468	OAK HAVEN MHP	SALISBURY	ROWAN
NONCD0002849	RANLO DUMP	RANLO	GASTON
NONCD0002539	STEEL SPECIALITY	BELMONT	GASTON
NONCD0002701	WEAVEXX CORPORATION	WAKE FOREST	WAKE

II. SITES THAT MAY OR ARE KNOWN TO REQUIRE USE OF THE INACTIVE HAZARDOUS SITES CLEANUP FUND

Purpose of the Fund

The Inactive Hazardous Sites Cleanup Fund is used to: (1) address imminent hazard sites; (2) pay for assessment and cleanup when responsible parties do not comply with orders to clean up sites; (3) pay for assessment and cleanup of sites that do not have financially-viable responsible parties (orphan sites); and (4) pay for state-contracted survey and legal assistance necessary to prepare notices of Inactive Hazardous Substance or Waste Disposal Sites where owners do not comply with orders to conduct such work. The state must attempt to recover its expenditures from responsible parties in the first, second and fourth cases.

The Inactive Hazardous Waste Sites Priority List helps determine priorities for cleanup. Responsible parties for top priority sites are encouraged to voluntarily clean up their sites. When a responsible party does not comply with a request and subsequent order to clean up a site, the state must perform the cleanup using the Inactive Hazardous Sites Cleanup Fund. The demand for state funds to conduct site cleanups depends on two factors: (1) how often responsible parties refuse to comply with orders to conduct cleanup and (2) the number of sites that lack financially-viable responsible parties.

The statute requires that the program report the list of sites known to require funds and the list of sites suspected to require funds for cleanup. Determining whether a responsible party exists (and thus, whether state funds will be needed for assessment and cleanup) is often a complex and lengthy process. It is also difficult to keep this information updated as owners and operators of the facilities change over time. To avoid the need to update the information several times, DWM does responsible party research when a site is next in priority for action.

Orphan Chemical Sites

The Inactive Hazardous Sites Cleanup Fund was used to address several sites this year. A summary of the work is provided in Table 3.

Table 3. Summary of Inactive Hazardous Sites Cleanup Fund Expenditures FY 2010-11

Site Name	City/County	Activity	10/11 Fund Expenditure
Atkinson Street Contamination	Hamlet/ Richmond	Private well contaminated from unknown source. Investigation conducted in attempt to identify source of contamination. Treatment system to be installed on home water supply in FY 2011-12 using the Bernard Allen Emergency Drinking Water Fund.	$41,268

Crowder's Mountain State Park	Gastonia/ Gaston	DENR's contractor excavated over 1000 cubic yards of soil containing hazardous waste and removed 50 drums in FY 2009-10. The Inactive Hazardous Sites Cleanup Fund did not have sufficient revenue to complete the removal because the volume was discovered to be much larger than originally estimated. The US EPA completed the soil and drum removal work by excavating over 150 drums and an additional 1000 cubic yards of contaminated soil. The surrounding water supply wells for several residents are all clean. In June 2011, DENR's contractor initiated a groundwater investigation at the site. Toluene was found in groundwater in excess of state standards. In FY 2011-12, DENR will complete the investigation and evaluate groundwater remediation methods in order to protect the nearby water supply wells.	$0
Cheesman Property	Rockwell/ Cabarrus	Residential property contaminated with lead from battery casing disposal. DENR's contractor conducted delineation phase of the contaminant assessment in FY 2010-11. Removal of contaminated soils is planned for FY 2011-12.	$10,871
Cox Mobile Home Park	Asheboro/ Randolph	Soil and groundwater suspected to be contaminated because contamination was earlier found in a well on site. DENR's contractor conducted assessment and determined soil, groundwater and drinking water source are below cleanup standards. Site assigned No Further Action Status.	$20,436
Lacy Allred Farm Subdivision	Greensboro/ Guilford	Conducted sampling of water supply well.	$1,280
Mary Chappell Residence	Hamlet/ Richmond	Private well contaminated from unknown source. Investigation conducted in attempt to identify source of contamination. Resident provided bottled water through Bernard Allen Fund.	$35,647
Pawley Drive Contamination	Charlotte/ Mecklenburg	Contaminated private well connected to city water system.	$2,187 (water line connection charge; plumber's bill pending)

Pender Plating	Burgaw/ Pender	High levels of chromium in soil and groundwater in a residential area. First phase conducted in FY 2010-11. Additional sampling planned for FY 2011-12.	$3,473
Phoenix Recycling	Havelock/ Craven	Two phases of assessment were conducted by DENR's contractor in FY 2010-11. Arsenic, chromium and manganese were above state groundwater standards on the site and localized arsenic contamination is present in soils. The site is an abandoned recycling operation near a school and some residences. Levels present in soils do not exceed levels safe for trespassers and drinking water wells in the area all tested clean. Additional limited testing of arsenic and metals in groundwater is planned for FY 2011-12 to confirm off-property migration will not occur.	$94,707
Pleasant Garden Road Contamination	Greensboro/ Guilford	Residential wells suspected to be contaminated by a former dry cleaner. Investigation of source conducted and wells tested. Dry cleaner could not be confirmed to be the source. Wells no longer exceed drinking water standards. Resample of wells planned to confirm still below standards.	Bill pending
Spectrum Dyed Yarns	Kings Mountain/ Cleveland	Residence with a contaminated drinking water source was connected to city service.	$19,063
Texfi Industries	Fayetteville/ Cumberland	Work at this site was funded through bankruptcy proceeds and the Inactive Hazardous Sites Cleanup Fund. The General Assembly appropriated $50,000 in funds from the Solid Waste Management Trust Fund for FY 2010-11 to assist in the cleanup and monitoring of contamination at the Texfi site. Additional assessment of the extent of the contamination was conducted to aid in determining possible remedial actions. Monitoring of wells on the City of Fayetteville's water plant property is conducted to ensure the interim remedy is protecting the City's water supply.	$206,557
Vinegar Hill Lead Site	Tabor City/ Columbus	Residential area contaminated with lead from battery casing disposal. DENR's contractor completed additional assessment of the extent of the contamination in FY 2010-11. Removal of contaminated soils is planned for FY 2011-12.	$8,254

Watts, Levi Property	Tabor City/ Columbus	Three residential parcels contaminated with lead from battery casing disposal. DENR's contractor conducted a removal of contaminated soil on one parcel in FY 2010-11. A second is planned for FY 2011-12. The third property owner refused assistance. A notice of contamination will be recorded on this parcel.	$24,095
Woodleaf Road Residence	Salisbury/ Rowan	Contaminated drinking water well provided with a treatment system.	$6,457

DENR has also recovered some funds to address specific sites through bankruptcy claims. The following summarizes work activities in FY 2010-11 using bankruptcy funds:

- **Burlington Industries** – Approximately $465,000 was obtained in 2007 through a claim for six Burlington Industries properties. While the amount of funds is limited, the funds were used to remove sources of contamination, thereby reducing the further spread of groundwater contamination and encouraging natural attenuation processes. A total of $8,961 remained that was not sufficient to conduct any further meaningful work at the Burlington sites. Our bankruptcy settlement agreements allow that in such a situation, the residue can be spent on other orphan Inactive Hazardous Sites.
- **Chemtura Corporation** – A total of $3,750,000 was recovered in November 2010 for cleanup of the Crompton and Knowles site in Lowell and the Leesona site in Burlington. Work is pending.
- **CMI** – $1,250,000, $750,000 and $100,000 have been recovered for three CMI sites. These funds have been used to conduct assessment at three CMI sites in Elkin. $258,352, $42,068, and $32,660 remain, respectively, for each site. Cleanup activities are ongoing.
- **Lyondell** – A total of $1,831,982 was recovered through bankruptcy in March 2011 to address four sites: two Cherokee Resources sites in Charlotte, SCM Proctor-Silex in Mt Airy, and SCM Proctor-Silex in Southern Pines. Appropriate distribution of expenditures is being evaluated across these sites based on risk posed and feasibility of remedies.
- **Mark IV** – A total of $42,738 was recovered for three Dayco Inc sites in Haywood County. Work is pending.
- **Pillowtex** – A total of $210,000 has been recovered to address the Fieldcrest Mills site in Spencer and the Cannon Mills site in Kannapolis. There is a small possibility of additional payout from this bankruptcy, which could provide some additional revenue. DENR is evaluating where best to spend funds at these two sites.
- **SCM** – $5.3 million was obtained to address the SCM site in Charlotte. The funds are held in a private trust fund. The trustee contracts the work at DENR's direction. Work is ongoing.
- **Texfi, Inc.** – DENR recovered approximately $940,000 in funds through a bankruptcy claim against Texfi, Inc., that is being used to remove sources of contamination at the Fayetteville property. A total of $173,001 remains. Work is continuing.

Pre-Regulatory Landfills
Senate Bill 1492, enacted in 2007, established a state-wide tax on solid waste disposal, half of which goes to address the hazards posed by landfills that predate federal and state rules on solid waste disposal. The provisions of the bill that relate to the assessment and abatement of contamination at these pre-regulatory landfills went into effect in July 2008. The Division of Waste Management received the first proceeds of the tax in February 2009.

DWM has cataloged a total of 676 unpermitted, unlined landfills. Initial work at each site involved confirming the location, determining the current use of the property, and identifying the use of surrounding property (for example, residential or commercial) to help prioritize the sites for action. That work has been completed. The division then established contracts for contaminant assessment and mitigation of the sites and this work has begun. The division has also provided review/and approval of assessment work being conducted by local governments and reimbursed the cost of that work from the tax proceeds.

In FY 2010-11, DWM completed first phase remedial investigations (access, updated receptor research, geophysical assessment to define perimeter of the waste) at 18 sites. DWM completed the second phase of assessment (delineation of the extent of the contamination on the site) at 12 sites. An additional 26 first phase investigations and 24 contaminant delineation investigations were underway in FY 2010-11. DWM also provided oversight for local government assessments (one first phase and three contaminant delineation phase assessments) that were completed and approved for reimbursement. The program also sampled 119 private water supply wells on or near unpermitted landfills and provided alternate water supplies to four homes that had high levels of contamination. Thirty-nine new sites were screened for program qualification. Of those, nine new sites were added to the program catalog.

The program also oversaw a study conducted by NC State University students to determine if former landfills may be candidate sites for solar power farms. The project compiled information on the likelihood of each site as a candidate using geographic information systems. The project has received the attention of potential developers.

Due to budget constraints and less tax revenue than had been originally anticipated, there has been a delay in filling the seven positions needed to implement the program. However, three more positions were filled this year, for a current total of six.

Cleanup Funds Needed
Currently 372 sites, of which 214 are higher-priority cases, have been identified that have no financially-viable responsible parties and require further action. As explained earlier in this chapter, the total number of orphan sites is not presently known.

Orphan site work can include assessment only, small-to-large soil and waste cleanup, water line installation or larger groundwater restoration projects. An average cost-per-site was determined by first calculating the average cost for orphan soil cleanup actions conducted by DENR's Inactive Hazardous Sites Branch and averaging that figure with an average site cleanup cost for several state programs published by the Association of State and Territorial Solid Waste Management Officials, adjusting for inflation. That figure comes to $563,529 per site. The total

cost for cleanup is estimated to be $209,632,788 for 372 orphan sites or $120,895,206 for higher-priority orphan sites. (See the table on page 29.)

As of July 1, 2011, the balance of the Inactive Hazardous Sites Cleanup Fund totaled $618,808. Of this, $173,001 is bankruptcy proceeds dedicated to conducting contaminant source remediation at the Texfi-Fayetteville site. Of the remaining $445,807, $257,347 is currently obligated in contracts for assessment and cleanup of the sites. On average, the amount of revenue deposited into the Fund each year is around $385,000. The fact that the "unobligated" cash balance is $135,806 and the amount of revenue generated each year for the fund is only $385,000, clearly points out that the Inactive Hazardous Sites Cleanup Fund is underfunded to address inactive site remediation across the state.

III. NATIONAL PRIORITIES LIST SITES REQUIRING A STATE COST SHARE

National Priorities List (NPL) sites are those hazardous substance or waste disposal sites that are priorities for cleanup under the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), more commonly known as Superfund. These are sites identified by the United States Environmental Protection Agency (EPA) as high priorities for environmental cleanup because of the nature of the contamination and actual or potential threat to human health and the environment. North Carolina has 36 NPL sites.

The NPL includes both sites with financially-viable responsible parties and orphan sites. Cleanup costs are financed either by responsible parties or by a federal trust fund with a state cost share. When the federal trust fund is used, CERCLA requires North Carolina to pay 10 percent of the cleanup cost plus 100 percent of the cost to operate and maintain the remediation system.

Table 4 provides a list of the North Carolina NPL sites and the following information for each site: location, investigation/cleanup status, estimated costs, and projected start dates for cleanup. Part I of Table 4, found on page 12, includes those sites where the Federal Trust Fund/North Carolina cost share is required. A summary of North Carolina's cost share obligations is provided at the end of this part. Part II of Table 4, found on page 14, includes the status of responsible party funded cleanups.

TABLE 4. NORTH CAROLINA NATIONAL PRIORITIES LIST SITES –PART 1
SITES WHERE FEDERAL TRUST FUND/NORTH CAROLINA COST SHARE IS REQUIRED

NPL Site	*City/County*	*Operable Unit*	*Cleanup Status*	*Cleanup Cost*	*Cleanup Start Date***
ABC One Hour Cleaners	Jacksonville, Onslow	OU1-Groundwater	RA	$3,760,000	In Progress
		OU2-Soil	RA	$750,000	In Progress
Aberdeen Contaminated Groundwater	Aberdeen, Moore	Groundwater	PP	$7,308,000	In Progress
Barber Orchard	Waynesville, Haywood	OU1-Soil	RA	$24,300,000	In Progress
		OU2-Groundwater	FS	Not Determined	Not Determined
Benfield Industries	Waynesville, Haywood	Entire Site		$6,729,200	
		Soil	Complete		Complete
		Groundwater	O&M		In Progress
Blue Ridge Plating	Arden, Buncombe	Entire Site		$2,275,200	
		Soil	Complete		Complete
		Groundwater	O&M		In Progress
Cape Fear Wood Preserving	Fayetteville, Cumberland	Entire Site		$24,407,574	
		Soil	Complete		Complete
		Groundwater	RA		In Progress
Carolina Transformer	Fayetteville, Cumberland	Soil/Sediment	Complete	$22,000,000	Complete
		Groundwater	O&M	$328,300	In Progress
Davis Park Road TCE	Gastonia, Gaston	Groundwater	O&M	$3,873,299	In Progress
FCX, Inc.-Statesville	Statesville, Iredell	OU1-Groundwater	O&M	$4,161,525	In Progress
		OU2-Soil	Complete	$6,000,000	Complete
FCX, Inc.-Washington	Washington, Beaufort	OU1-Groundwater	RA	$255,791	In Progress
		OU2-Soil/Surface Water/Sediment	Complete	No Cost Share	Complete
GMH Electronics	Roxboro, Person	OU1-Public Water Supply	Complete	$2,158,550	Complete
		OU2-Entire Site	RI	Not Determined	Not Determined
Kerr-McGee Chemical	Navassa, Brunswick	Soil	RI	Not Determined	Not Determined
		Groundwater	RI	Not Determined	Not Determined
North Belmont PCE	Belmont, Gaston	Groundwater	RA	$7,535,000	In Progress

TABLE 4. NORTH CAROLINA NATIONAL PRIORITIES LIST SITES –PART 1
SITES WHERE FEDERAL TRUST FUND/NORTH CAROLINA COST SHARE IS REQUIRED

NPL Site	*City/County*	*Operable Unit*	*Cleanup Status*	*Cleanup Cost*	*Cleanup Start Date***
Ore Knob	West Jefferson, Ashe	Entire Site	RI	Not Determined	Not Determined
Potter's Septic Tank Service	Maco, Brunswick	Entire Site		$8,350,000	
		Soil	Complete		Complete
		Groundwater	RA		In Progress
Ram Leather	Mint Hill, Mecklenburg	Entire Site	Interim RA	$2,244,800	In Progress
Sigmon's Septic Tank	Statesville, Iredell	Entire Site		$1,329,400	
		Soil	Complete		Complete
		Groundwater	O&M		In Progress

Cleanup Status Legend

O&M - Remedy Operation and Maintenance
OU - Operable Unit
PP – Proposed Plan
RA - Remedial Action
RI - Remedial Investigation

SUMMARY OF NORTH CAROLINA COST SHARE REQUIREMENTS (AS OF JUNE 30, 2011)

Estimated total cost of pending/ongoing federal trust fund/N.C. cost share cleanups (based on signed contracts): (Includes both the federal cost and state's 10% cost share)	$120,780,639*
N.C.'s 10 percent cost share for pending/ongoing cleanups (based on signed contracts):	$12,078,064*
Amount of cost share funds distributed in FY 2010-11	$7,000,317
Current fund balance as of June 30, 2011:	$7,832,616
Encumbered amount of the fund balance for cost share payments:	$5,077,746

*This number will increase due to remedial action cost estimates not being available for all sites. Also, other sites may be added to the National Priorities List, which will require a state cost share. Also, increases in remedial costs from the original State/US EPA contract amounts can occur.
**Date applies to either entire site or operable unit.

TABLE 4. NORTH CAROLINA NATIONAL PRIORITIES LIST SITES
PART II - RESPONSIBLE PARTY FUNDED CLEANUPS

NPL Site	*City/County*	*Operable Unit*	*Cleanup Status*
Aberdeen Pesticides	Aberdeen, Moore	OU1 & OU4 - Soils-All Sites	Complete
		OU3-Groundwater for FC, TS, F6	O&M
		OU5-Groundwater for Rt 211 & McIver	O&M
Bypass 601/Martin Scrap	Concord, Cabarrus	OU1-Soil/Sediment at Martin Scrap	O&M
		OU2-Off-Site Soil/Sediment	Complete
		OU3-Groundwater	O&M
Charles Macon Lagoon and Drum	Cordova, Richmond	Soil	Complete
		Groundwater	O&M
Celanese Corporation	Shelby, Cleveland	OU1-Groundwater	O&M
		OU2-Soil	Complete
		Surface Water	Complete
Chemtronics, Inc.	Swannanoa, Buncombe	Soil	RI/FS
		Groundwater	RI/FS
FCX, Inc.	Statesville, Iredell	OU3-Burlington Industries Site	In Progress
Geigy Chemical	Aberdeen, Moore	Soil	Complete
		Groundwater	O&M
General Electric/ Shepherd Farm	East Flat Rock, Henderson	Soil	O&M
		Groundwater	O&M
		Surface Water/Sediment	Complete
Jadco-Hughes	Belmont, Gaston	Soil/Sediment	O&M
		Groundwater	O&M
JFD Electronics/ Channel Master	Oxford, Granville	Soil	Complete
		Groundwater	O&M

TABLE 4. NORTH CAROLINA NATIONAL PRIORITIES LIST SITES
PART II - RESPONSIBLE PARTY FUNDED CLEANUPS

NPL Site	*City/County*	*Operable Unit*	*Cleanup Status*
Koppers Company, Inc.	Morrisville, Wake	Soil	Complete
		Groundwater	O&M
		Surface Water	Complete
Martin Marietta/Sodyeco	Charlotte, Mecklenburg	Soil	Complete
		Groundwater	O&M
National Starch & Chemical	Salisbury, Rowan	OU1-Groundwater in Western Part of Site	O&M
		OU2-Trench Area Soil/Surface Water	Complete
		OU3-Area 2 Groundwater/Wastewater Treatment Area/Surface Water/ Sediments in NE Tributary	O&M
		OU4-Area 2 Soil/Wastewater Treatment Lagoon Area	O&M
New Hanover County Airport	Wilmington, New Hanover	Groundwater	O&M
NCSU Lot 86	Raleigh, Wake	Soil	O&M
		Groundwater	O&M
Reasor Chemical	Castle Hayne, New Hanover	Soil	Complete
		Groundwater	O&M
USMC Camp LeJeune	Jacksonville, Onslow	Multiple Units	Various Stages
USMC Cherry Point	Cherry Point, Craven	Multiple Units	Various Stages
Ward Transformer	Raleigh, Wake	OU1-Downgradient Reaches	In Progress
		OU2-Plant Area & Groundwater	In Progress

Cleanup Status Legend
O&M - Remedy Operation and Maintenance
OU – Operable Unit
RI-Remedial Investigation
FS-Feasibility Study

IV. RESPONSIBLE PARTY VOLUNTARY SITE REMEDIAL ACTION

When the Inactive Hazardous Sites Branch requests a person responsible for contamination to take action at a priority site, most agree to voluntarily conduct a cleanup. In addition to voluntary actions at the request of the program, responsible parties and owners often initiate an approved assessment and/or remedial action on their own. Due to the number of volunteers and very limited staff resources, the General Assembly has authorized DENR to privatize the program's oversight of voluntary remediation activities at lower priority sites. DWM continues to provide oversight for assessment and remediation at sites that present more severe public health threats or other concerns.

The privatized portion of the voluntary cleanup program is called the Registered Environmental Consultant (REC) Program. Under this program, a responsible party hires a private consultant to conduct the site assessment and cleanup and to certify that those activities comply with regulations. The REC certification replaces state oversight of the assessment and cleanup. For a firm to qualify as a REC, it must meet certain qualifications. The state audits a number of the REC projects each year to ensure the integrity of the program. DWM has the authority to sanction an REC where necessary. State staff auditors are funded through fees collected from the voluntary participants.

A current list of the 126 sites where assessments and cleanups are underway in accordance with an administrative agreement with the state is provided in Table 5 on the following page. These are a mixture of REC-directed and DENR-directed actions. Table 6, found on page 21, is a list of additional DENR-directed responsible party assessment and cleanup actions not under administrative agreements.

TABLE 5. SITES UNDERGOING VOLUNTARY REMEDIAL ACTION BY RESPONSIBLE PARTIES DURING FY 2010-11

ID Number	*Sites Name*	*City*	*County*
NONCD0000040	ABBOTT LABORATORIES	LAURINBURG	SCOTLAND
NONCD0000039	ABITIBI-PRICE CORPORATION	ROARING RIVER	WILKES
NCD024462327	ACADEMY STEEL DRUM	MATTHEWS	MECKLENBURG
NCD045924339	ACME UNITED CORPORATION	FREMONT	WAYNE
NONCD0001226	ADAMS-MILLIS PLANT 2/33 - NONUST	MOUNT AIRY	SURRY
NONCD0001081	ALCOA-NARROWS POWERHOUSE		MONTGOMERY
NCD002464691	ALLIANCE CAROLINA TOOL AND MOLD	ARDEN	BUNCOMBE
NONCD0001275	AO SMITH ELECTRIC MOTOR	MEBANE	ALAMANCE
NCD047257472	APPLIED RESEARCH GROUP, INC.	CHARLOTTE	MECKLENBURG
NCD986188787	ASHEVILLE COAL GAS PLANT #1	ASHEVILLE	BUNCOMBE
NONCD0000032	ASHEVILLE COAL GAS PLANT #2	ASHEVILLE	BUNCOMBE
NCD072003635	ATHOL MANUFACTURING COMPANY	BUTNER	GRANVILLE
NONCD0001318	BARBER PARK	GREENSBORO	GUILFORD
NCD003193588	BARBOUR BOAT WORKS, INC.	NEW BERN	CRAVEN
NCD003149705	BASF WAYNDOTTE CORPORATION	CHARLOTTE	MECKLENBURG
NONCD0001335	BELMONT DYERS	BELMONT	GASTON
NCD083673590	BENDIX CORPORATION	CHARLOTTE	MECKLENBURG
NCD054412283	BLACK & DECKER PLANT (FORMER)	TARBORO	EDGECOMBE
NCD003189024	BORDEN CHEMICAL FAYETTEVILLE PLANT	FAYETTEVILLE	CUMBERLAND
NCD980502827	BROWN #1	PISGAH FOREST	TRANSYLVANIA
NONCD0002785	BROYHILL/FURNITURE BRANDS	CONOVER	CATAWBA
NONCD0000002	BURLINGTON COAL GAS PLANT	BURLINGTON	ALAMANCE
NONCD0001416	CALDWELL FREIGHT LINES	LENOIR	CALDWELL
NCD986171965	CARO-KNIT	WILMINGTON	NEW HANOVER
NCD000608117	CELANESE CORPORATION/FIBERS TECH	CHARLOTTE	MECKLENBURG
NCD986188803	CHARLOTTE COAL GAS PLANT NO. 2	CHARLOTTE	MECKLENBURG
NCD981861214	CHARLOTTE TRANSPORTATION TERMINAL	CHARLOTTE	MECKLENBURG
NONCD0001494	CHEVRON	SALISBURY	ROWAN
NONCD0000041	CIBA-GEIGY	CHARLOTTE	MECKLENBURG
NCD061801361	CIBA-GEIGY CORPORATION	GREENSBORO	GUILFORD
NONCD0001509	CLAIRE MANUFACTURING	CHARLOTTE	MECKLENBURG
NONCD0001092	CMI WWTP (PARCEL1)	ELKIN	SURRY
NONCD0002851	COCA-COLA BOTTLING FACILITY	WILMINGTON	NEW HANOVER
NONCD0001187	COFFING HOISTS	WADESBORO	ANSON
NCD982116477	CONAGRA FOODS, INC	GARNER	WAKE
NCD986197333	CONCORD COAL GAS PLANT	CONCORD	CABARRUS
NONCD0001538	CONFLANDEY INC.	WHITEVILLE	COLUMBUS
NONCD0001544	COOKSON FIBERS	ANSONVILLE	ANSON
NONCD0001097	COPES-VULCAN, INC	CHARLOTTE	MECKLENBURG
NONCD0001061	CP&L NORTHERN DIVISION COMPLEX	GARNER	WAKE
NONCD0001569	CROWN HONDA & CAMCO	GREENSBORO	GUILFORD
NONCD0001262	CROWN PONTIAC-SOLVENT	GREEENSBORO	GUILFORD
NONCD0001420	CSX HAMLET DIESEL SHOP	HAMLET	RICHMOND

NONCD0002776	CSX-ROSINDALE	CLARKTON	BLADEN
NONCD0001577	CULP, INC. (FORMERLY ARTEE INDUSTRIES)	LINCOLNTON	LINCOLN
NONCD0001181	CUMMINS ATLANTIC-DISTRIBUTORSHIP	CHARLOTTE	MECKLENBURG
NONCD0001182	CUMMINS ATLANTIC-GENERAL OFFICE BLDG	CHARLOTTE	MECKLENBURG
NCD062567623	DIAMOND SHAMROCK CORP/HENKEL PROCES	CHARLOTTE	MECKLENBURG
NCD057454670	DIAMOND SHAMROCK CORP/OCCIDENTAL	CASTLE HAYNE	NEW HANOVER
NONCD0001141	DIAZIT COMPANY	YOUNGSVILLE	FRANKLIN
NCD981861743	DUKE POWER/GREENSBORO GAS PLANT	GREENSBORO	GUILFORD
NCD000813519	DUKE UNIVERSITY	DURHAM	DURHAM
NONCD0002818	DUPONT-KENTEC	GRIFTON	LENOIR
NCD986173938	DURHAM GAS PLANT	DURHAM	DURHAM
NONCD0001661	EATON CORPORATION	LAURINBURG	SCOTLAND
NCD004520136	EATON CORPORATION	ROXBORO	PERSON
NONCD0001662	EATON CORPORATION - SANFORD	SANFORD	LEE
NONCD0002853	EATON MANUFACTURING	SELMA	JOHNSTON
NCD986197267	ELIZABETH CITY COAL GAS	ELIZABETH CITY	PASQUOTANK
NONCD0001681	EMPIRE BRUSH FACILITY	GREENVILLE	PITT
NCD003201837	ENCEE CHEMICAL SALES, INC.	BRIDGETON	CRAVEN
NONCD0001683	ENERGY CONVERSION SYSTEMS	DUNN	HARNETT
NONCD0001700	FAIRCHILD INDUSTRIAL PRODUCTS CO.	WINSTON-SALEM	FORSYTH
NCD062566047	FASCO CONTROLS CORPORATION	SHELBY	CLEVELAND
NCD986197341	FAYETTEVILLE COAL GAS/RAY AVE	FAYETTEVILLE	CUMBERLAND
NONCD0002854	FIBER DYNAMICS	HIGH POINT	GUILFORD
NONCD0000017	FLAKT PRODUCTS	WINSTON-SALEM	FORSYTH
NONCD0000029	FLEET AEROSPACE CORP./AERONCA	CHARLOTTE	MECKLENBURG
NONCD0000075	FOAMEX/REEVES BROTHERS	CORNELIUS	MECKLENBURG
NONCD0001730	FONTAINE FIFTH WHEEL (FORMER)	ROCKY MOUNT	NASH
NCD000773515	GA-PACIFIC CORP/HDWD SAW	BOWDENS	DUPLIN
NCD000773507	GA-PACIFIC CORP/HDWD SAW	ENFIELD	HALIFAX
NCD986188829	GASTONIA COAL GAS PLANT	GASTONIA	GASTON
NCD051322980	GENERAL ELECTRIC CO.	CHARLOTTE	MECKLENBURG
NCD003163730	GENERAL INSTRUMENT CORP.	FAIRVIEW	BUNCOMBE
NONCD0001764	GENUINE PARTS COMPANY 1	CHARLOTTE	MECKLENBURG
NCD986197309	GOLDSBORO COAL GAS PLANT #1	GOLDSBORO	WAYNE
NONCD0001083	GOLDSBORO COAL GAS PLANT #2	GOLDSBORO	WAYNE
NONCD0001089	GREENSBORO COAL GAS PLANT #1	GREENSBORO	GUILFORD
NCD986188886	GREENVILLE COAL GAS PLANT	GREENVILLE	PITT
NCD981922362	GREIF, INC	BLADENBORO	BLADEN
NCD986232379	GRESHAMS LAKE INDUSTRIAL PARK	RALEIGH	WAKE
NCD009305699	GTE SYLVANIA, INC.	SMITHFIELD	JOHNSTON
NCD051739209	HARRELSON RUBBER COMPANY	ASHEBORO	RANDOLPH
NONCD0001828	HAVELOCK WASTEWATER TREATMENT	NEW BERN	CRAVEN
NONCD0001084	HENDERSON COAL GAS PLANT	HENDERSON	VANCE

NCD981003957	HENSON LANDFILL	FOREST CITY	RUTHERFORD
NCD039102959	HEVI-DUTY ELECTRIC/GENERAL SIG	GOLDSBORO	WAYNE
NONCD0001085	HICKORY COAL GAS PLANT	HICKORY	CATAWBA
NCD986188837	HIGH POINT COAL GAS PLANT	HIGH POINT	GUILFORD
NCD045920279	HOLDING POND FOR WASTE/USS	NAVASSA	BRUNSWICK
NCD003198520	HONEYWELL, INC	DURHAM	DURHAM
NCD048401087	HOOKER FURNITURE	PLEASANT GARDEN	GUILFORD
NCD054283189	HOOVER MACHINE SHOP	GASTONIA	GASTON
NONCD0001869	HOOVER ROAD CONTAMINATION	DURHAM	DURHAM
NCD003215696	HUNT MANUFACTURING	STATESVILLE	IREDELL
NONCD0001159	HYDRO TUBE SOUTH	PITTSBORO	CHATHAM
NONCD0001902	INGERSOLL RAND	DAVIDSON	IREDELL
NONCD0001202	INGRAM PLYWOOD INC	THOMASVILLE	DAVIDSON
NONCD0001948	KAYSER-ROTH - ASHEBORO	ASHEBORO	RANDOLPH
NONCD0001951	KERN POLYMERIC	SALISBURY	ROWAN
NCD000653576	KERN RUBBER CO. URETHANE PLANT	SALISBURY	ROWAN
NONCD0001953	KEYSTONE POWDERED METAL COMPANY	CHERRYVILLE	GASTON
NONCD0001118	KIDDE TECHNOLOGIES	WILSON	WILSON
NCD986197366	KINSTON COAL GAS PLANT	KINSTON	LENOIR
NONCD0001173	LEBANON CHEMICAL	HERTFORD	PERQUIMANS
NCD986197358	LEXINGTON COAL GAS PLANT	LEXINGTON	DAVIDSON
NONCD0002010	LINK ROAD SITE	WINSTON-SALEM	FORSYTH
NCD003183167	LONG MANUFACTURING	TARBORO	EDGECOMBE
NCD062552989	MALLARD CREEK RD/UNION OIL CO OF CA	CHARLOTTE	MECKLENBURG
NCD055359079	MASONITE CORP. FIBERBOARD DIV.	SPRING HOPE	NASH
NONCD0002615	MEDLIN-DAVIS DRY CLEANERS-SALISBURY	RALEIGH	WAKE
NONCD0002784	MGM TRANSPORT CORP	HIGH POINT	GUILFORD
NONCD0002068	MICROMATIC/TEXTRON FACILITY	SWANNANOA	BUNCOMBE
NCD042891663	MITCHELL ENGR CO/CECO BLDG. DIV.	ROCKY MOUNT	NASH
NONCD0002085	MITSUBISHI ELECTRONICS	DURHAM	DURHAM
NONCD0002090	MOEN - SANFORD	SANFORD	LEE
NONCD0002101	MOUNT HOPE FACILITY	CHARLOTTE	MECKLENBURG
NONCD0001086	MT AIRY COAL GAS PLANT	MT AIRY	SURRY
NONCD0002194	NCSPA BLDG C-1	WILMINGTON	NEW HANOVER
NCD986197259	NEW BERN COAL GAS PLANT	NEW BERN	CRAVEN
NONCD0002201	NEWS & OBSERVER MECH BLV-SPILL	GARNER	WAKE
NONCD0002236	OLYMPIC PRODUCTS	GREENSBORO	GUILFORD
NONCD0002267	PARKER HANNIFIN CORPORATION	SNOW HILL	GREENE
NCD055162069	PELTON & CRANE PLANT (FORMER)	CHARLOTTE	MECKLENBURG
NONCD0002810	PEP BOYS #150	MATTHEWS	MECKLENBURG
NONCD0001939	PETRO EXPRESS NO. 56	KINGS MOUNTAIN	CLEVELAND
NONCD0001020	PRECISION FABRICS GROUP, INC	GREENSBORO	GUILFORD
NONCD0001143	PRESTIGE LABELS	BURGAW	PENDER

NCD040047425	PRILLAMAN CHEMICALS	FAYETTEVILLE	CUMBERLAND
NONCD0002338	PSNC OPERATIONS AND GARAGE	DURHAM	DURHAM
NONCD0002345	PUROLATOR PRODUCTS, INC.	FAYETTEVILLE	CUMBERLAND
NONCD0002350	QUALITY FOREST PRODUCTS	ENFIELD	HALIFAX
NCD062548995	QUORUM KNITTING	WEAVERVILLE	BUNCOMBE
NONCD0002361	RADIOSHACK PROPERTY	SWANNANOA	BUNCOMBE
NCD986188894	RALEIGH COAL GAS PLANT NO. 1	RALEIGH	WAKE
NCD986188902	RALEIGH COAL GAS PLANT NO. 2	RALEIGH	WAKE
NCD045915568	RALEIGH METAL PROCESSORS	RALEIGH	WAKE
NONCD0002795	RD PATE ESTATE	PIKEVILLE	WAYNE
NONCD0001201	REEVES BROTHERS-BAILEY RD DUMP	CORNELIUS	MECKLENBURG
NONCD0001087	REIDSVILLE COAL GAS PLANT	REIDSVILLE	ROCKINGHAM
NCD053009510	RELIANCE UNIVERSAL OF KENTUCKY	LENOIR	CALDWELL
NONCD0001108	RENTAL UNIFORM SERVICE	ASHEVILLE	BUNCOMBE
NONCD0001171	RENTAL UNIFORM SERVICES	CLINTON	SAMPSON
NONCD0002404	RITTER MILLWORKS SHOP	CASTLE HAYNE	NEW HANOVER
NONCD0001157	ROBERT BOSCH TOOL CORP	GREENVILLE	PITT
NONCD0001154	ROBERT BOSCH TOOL CORP	LINCOLNTON	LINCOLN
NCD986197325	ROCKY MOUNT COAL GAS PLANT NO. 1	ROCKY MOUNT	NASH
NCD986197317	ROCKY MOUNT COAL GAS PLANT NO. 2	ROCKY MOUNT	NASH
NCD041466525	ROCKY MOUNT FIBER DUMP	ROCKY MOUNT	EDGECOMBE
NCD981933096	ROCKY MOUNT, OLD AIRPORT	ROCKY MOUNT	NASH
NONCD0002431	RUS	WINSTON-SALEM	FORSYTH
NCD986197283	SALISBURY COAL GAS PLANT #1	SALISBURY	ROWAN
NONCD0001088	SALISBURY COAL GAS PLANT #2	SALISBURY	ROWAN
NONCD0002445	SANTARO HOT MIX ASPHALT PLANT	KERNERSVILLE	FORSYTH
NCD003234549	SCM PROCTOR SILEX/WEAREVER	SOUTHERN PINES	MOORE
NCD000616516	SCOVILL INC/SECURITY PRODUCTS	MONROE	UNION
NONCD0002456	SEARS 8075 SOLVENTS	CHARLOTTE	MECKLENBURG
NCN000407206	SHULIMSON BROTHERS SCRAP YARD	ASHEVILLE	BUNCOMBE
NCD083678631	SINCLAIR AND VALENTINE CO.	CHARLOTTE	MECKLENBURG
NONCD0002488	SONOCO CARTON FACILITY, FORMER	CHARLOTTE	MECKLENBURG
NONCD0001204	SOUTHERN STATES-AHOSKIE SERVICE	AHOSKIE	HERTFORD
NCD053488557	SOUTHERN WOOD PIEDMONT COMPANY	GULF	CHATHAM
NCD058517467	SOUTHERN WOOD PIEDMONT COMPANY	WILMINGTON	NEW HANOVER
NCD986197291	STATESVILLE COAL GAS PLANT	STATESVILLE	IREDELL
NCD083669952	STORY BURIAL AREAS/UNION CHEMICAL	CHARLOTTE	MECKLENBURG
NONCD0001101	STRONGHAVEN WAREHOUSE	MATTHEWS	MECKLENBURG
NONCD0002575	TAKEDA - BASF	WILMINGTON	NEW HANOVER
NCD986166700	TOISNOT SWAMP	WILSON	WILSON
NONCD0002633	TRINITY AMERICAN CORP.	GLENOLA	RANDOLPH
NONCD0002843	TRION, INC	SANFORD	LEE
NONCD0002833	UMICORE CSM NA	MAXTON	SCOTLAND

NONCD0002645	UNIFIRST	WILMINGTON	NEW HANOVER
NONCD0002646	UNIFIRST CORPORATION (FORMERLY	GOLDSBORO	WAYNE
NCD980557623	UNIVERSITY OF NC/ARPT WASTE DISP	CHAPEL HILL	ORANGE
NCD053485991	VARCO-PRUDEN BUILDINGS	KERNERSVILLE	FORSYTH
NONCD0001139	VERMONT AMERICAN	BOONE	WATAUGA
NONCD0002672	WAKE ENTERPRISES, INC	FUQUAY-VARINA	WAKE
NONCD0001403	WAKEFIELD CITGO	RALEIGH	WAKE
NONCD0001103	WALTER KIDDE PORTABLE EQUIPMENT	MEBANE	ALAMANCE
NCD986197275	WASHINGTON COAL GAS PLANT	WASHINGTON	BEAUFORT
NCD001493931	WECK, EDWARD INC.	RTP	DURHAM
NCN000407582	WEST PHARMACEUTICAL SERVCES	KINSTON	LENOIR
NCD003220969	WHITE FURNITURE CO.	MEBANE	ALAMANCE
NONCD0002717	WHITINSVILLE SPINNING RING COMPANY	GASTONIA	GASTON
NCD986188910	WILMINGTON COAL GAS PLANT	WILMINGTON	NEW HANOVER
NCN000407302	WILMINGTON GUN CLUB (FORMER)	WILMINGTON	NEW HANOVER
NCD093334209	WILSON, RALPH PLASTICS	FLETCHER	HENDERSON
NCD986188845	WINSTON-SALEM COAL GAS PLANT NO. 1	WINSTON-SALEM	FORSYTH
NCD986188852	WINSTON-SALEM COAL GAS PLANT NO. 2	WINSTON-SALEM	FORSYTH
NONCD0002799	WRIGHTSVILLE AVE	WILMINGTON	NEW HANOVER
NCD982156812	WYSONG & MILES	GREENSBORO	GUILFORD

TABLE 6. ADDITIONAL STATE-DIRECTED RESPONSIBLE PARTY ASSESSMENTS/CLEANUPS NOT UNDER VOLUNTARY ADMINISTRATIVE AGREEMENTS DURING FY 2010-11

ID Number	*Site Name*	*City*	*County*
NCD04541473	ACE CHEMICAL CORP	CHARLOTTE	MECKLENBURG
NONCD0001922	ALKALI SCREEN PRINTING	WILMINGTON	NEW HANOVER
NONCD0001967	AMERICAN DISTILLATION, INC	LELAND	BRUNSWICK
NONCD0001257	AMERICAN TRUETZSCHLER	CHARLOTTE	MECKLENBURG
NONCD0001259	AMI LIMITED	BURLINGTON	ALAMANCE
NONCD0001273	ANSELL HEALTHCARE	TARBORO	EDGECOMBE
NONCD0002779	APAC-CASTLE HAYNE	CASTLE HAYNE	NEW HANOVER
NONCD0001310	BAILEY RESIDENCE	TARBORO	EDGECOMBE
NONCD0002837	B&C GROCERY	GRAHAM	ALAMANCE
NONCD0001329	BEAMAN CORP.	LIBERTY	RANDOLPH
NONCD0001355	BLOOMSBURG MILLS PLANT	MONROE	UNION
NONCD0001413	C. BAKER WELL	CHARLOTTE	MECKLENBURG
NONCD0001713	CARDINAL SHOPPING CENTER	WINSTON-SALEM	FORSYTH
NOT YET ASSIGNED	CARLISLE STREET LEAD IMPACT	WINSTON-SALEM	FORSYTH
NONCD0002576	CASWELL CENTER FARM	KINSTON	LENOIR
NONCD0001166	CENTRAL GRAIN-MORGANS CRNR	ELIZABETH CITY	PASQUOTANK
NCD046148540	CENTRAL TRANSPORT	CHARLOTTE	MECKLENBURG
NONCD0001478	CHARLOTTE AIRCRAFT	CHARLOTTE	MECKLENBURG
NONCD0001487	CHEMATRON	CHARLOTTE	MECKLENBURG
NONCD0001490	CHEMSERVE TERMINAL	WILMINGTON	NEW HANOVER
NONCD0000016	CMC HOLDING	ELKIN	SURRY
NONCD0000065	CMI-DRUM STORAGE AREA	ELKIN	SURRY

NONCD0001543	COOKS FARM AND GARDEN	MARSHALL	MADISON
NONCD0001551	COTTON MILL SQUARE	GREENSBORO	GUILFORD
NCN000410375	COUNTRY CLUB LANE CONTAM.	ROXBORO	PERSON
NONCD0001418	CROSLAND PROPERTY	CARY	WAKE
NCD003149556	CTS OF ASHEVILLE	ASHEVILLE	BUNCOMBE
NONCD0001586	DANA TRANSPORT	CHARLOTTE	MECKLENBURG
NONCD0001598	DEHAVEN	MORRISVILLE	WAKE
NONCD0001430	DELL MOORE PROPERTY	RALEIGH	WAKE
NCD003213030	DOUGLAS BATTERY	WINSTON-SALEM	FORSYTH
NONCD0001631	DOUG WHITE AUTO MART	NEWTON	CATAWBA
NONCD0001655	EASON RESIDENCE, DOROTHY	GRAHAM	ALAMANCE
NONCD0001137	FABCO FASTENERS	STANDFIELD	STANLY
NONCD0001703	FAIRLAND LANE	LINCOLNTON	LINCOLN
NONCD0001720	FLEET SUPPLY	WINSTON-SALEM	FORSYTH
NONCD0001726	FLOWLINE CORP	WHITEVILLE	COLUMBUS
NCD986172617	FORBES RD WELLS-RAUCH IND	GASTONIA	GASTON
NCD982157067	FORTRESS WOOD PRODUCTS	TARBORO	EDGECOMBE
NONCD0001739	FULFLEX	SCOTLAND NECK	HALIFAX
NONCD0001757	GB LABELS	BURLINGTON	ALAMANCE
NCD050409150	GENERAL ELECTRIC	WILMINGTON	NEW HANOVER
NONCD0002847	GLEN CLARENCE CLINE SOLVENTS	CHARLOTTE	MECKLENBURG
NCD982124646	GREGSON FURNITURE	LIBERTY	RANDOLPH
NONCD0001064	GUILFORD MILLS	FUQUAY-VARINA	WAKE
NONCD0001997	HICKORY-LINCOLNTON HWY TCE	NEWTON	CATAWBA
NCD051745685	HOLDING POND FOR WASTE/USS	GREENSBORO	GUILFORD
NONCD0002467	HWY 87 METHANOL SPILL		BLADEN
NONCD0001232	INDUSTRIAL & AGRICULTURAL CH	RED SPRINGS	ROBESON
NCD003464369	IMC/INTERNATIONAL MINERALS	WINSTON-SALEM	FORSYTH
NONCD0001907	IT RESISTIVE	BOONE	WATAUGA
NONCD0001918	JANTZEN WELL	STATESVILLE	IREDELL
NCD980729677	KNOB CREEK FLYASH	BREVARD	TRANSYLVANIA
NONCD0002797	KOCH NORTH PARAXYLENE	WILMINGTON	NEW HANOVER
NONCD0001973	KYSOR-MICH. FLEET DIV	CHARLOTTE	MECKLENBURG
NCD981930019	LAFAYETTE ST PCE/CARMIKE	SHELBY	CLEVELAND
NONCD0002012	LIVINGSTONE COATINGS CORP	CHARLOTTE	MECKLENBURG
NCD986181451	MANNINGTON CERAMIC TILE	LEXINGTON	DAVIDSON
NONCD0001151	MATTHEWS BLDG SUPPLY-ESTUL	CHARLOTTE	MATTHEWS
NONCD0002063	METAL INDUSTRIES	MARION	MCDOWELL
NONCD0001176	MURFREESBORO VENEER	MURFREESBORO	HERTFORD
NONCD0002110	MYERS BROTHERS GIN SOLVENTS	SALISBURY	ROWAN
NONCD0002161	NCDOT SITE 2/CROWDER CONST.	CHARLOTTE	MECKLENBURG
NONCD0002135	NCDOT SITE 10	JAMESTOWN	GUILFORD
NONCD0002139	NCDOT SITE 25	GREENSBORO	GUILFORD
NONCD0002133	NCDOT SITE 8	STOKESDALE	GUILFORD
NONCD0002142	NCDOT SITE 42	ASHEBORO	RANDOLPH
NONCD0002145	NCDOT SITE 54	WINSTON-SALEM	FORSYTH
NONCD0002149	NCDOT SITE 72	HIGH POINT	GUILFORD

NONCD0002125	NC FOAM	MT AIRY	SURRY
NCD986171379	NEW HAVEN DRIVE TCE	GASTONIA	GASTON
NONCD0002256	PALOMINO CLUB	CHARLOTTE	MECKLENBURG
NONCD0002259	PANTRY #161- SOLVENTS	ELON	ALAMANCE
NCD986215499	PARKER INDUSTRIES	CONNELLY SPRINGS	BURKE
NONCD0002506	PAWLEY DRIVE CONTAMINATION	CHARLOTTE	MECKLENBURG
NCN000409881	PAYNE RD SOLVENT	BESSEMER CITY	GASTON
NONCD0002284	PENDER PLATING COMPANY	BURGAW	PENDER
NONCD0001425	PETERBILT OF DUNN "A" PARCEL	DUNN	HARNETT
NONCD0001419	PETERBILT OF DUNN "B" PARCEL	DUNN	HARNETT
NONCD0002296	PETROLEUM TANK SERVICE #2	CHARLOTTE	MECKLENBURG
NONCD0002307	PILCH, INC	TROUTMAN	IREDELL
NONCD0002310	PINE ISLAND DRIVE	CHARLOTTE	MECKLENBURG
NONCD0002319	POLYLOK, INC/WELLINGTON SEARS	TARBORO	EDGECOMBE
NONCD0002330	PRIDDY PROPERTY	LAWSONVILLE	STOKES
NONCD0002371	RANDOLPH ELECTRIC	ASHEBORO	RANDOLPH
NONCD0002373	RANGER TRANSPORT WELL	CHARLOTTE	MECKLENBURG
NCD053009510	RELIANCE UNIVERSAL	LENOIR	CALDWELL
NONCD0001116	REPUBLIC SERVICES OF NC	ROUGEMONT	PERSON
NONCD0002391	REXHAM CORPORATION	GREENSBORO	GUILFORD
NONCD0002395	RHONE-POULENC (RHODIA)	GASTONIA	GASTON
NONCD0002397	RHYNE ROAD	CHARLOTTE	MECKLENBURG
NONCD0001016	ROYSTER CLARK FERTILIZER	OAK CITY	MARTIN
NCN000407775	ROYSTER FERTILIZER	LELAND	BRUNSWICK
NONCD0002443	SANDS & COMPANY SOLVENTS	GASTONIA	GASTON
NONCD0002438	SALEM UNIFORM SERVICES	WINSTON-SALEM	FORSYTH
NONCD0001145	SALISBURY ASPHALT PLANT	SALISBURY	ROWAN
NCN000410441	SCERCY WELL	CHARLOTTE	MECKLENBURG
NCD093338119	SCM CORP/GLIDDEN COATINGS	CHARLOTTE	MECKLENBURG
NONCD0002515	SPECTRUM DYED YARNS	KINGS MOUNTAIN	CLEVELAND
NONCD0002536	STATE ROAD GROCERY		SURRY
NONCD0002538	STATESVILLE RD & COCHRANE DR	CHARLOTTE	MECKLENURG
NCD024895864	STEWART-WARNER	WINSTON-SALEM	FORSYTH
NONNCD0001165	STONY HILL ROAD	WAKE FOREST	WAKE
NONCD0000071	STROH BREWERY	WINSTON-SALEM	FORSYTH
NCD986176444	STROH/CHITTY FARM	WINSTON-SALEM	FORSYTH
NOT YET ASSIGNED	SUNSET DR PCE	CHARLOTTE	MECKLENBURG
NONCD0001386	SUPERIOR ESSEX	TARBORO	EDGECOMBE
NONCD0002563	SUPERIOR PRINTING INK CO	CHARLOTTE	MECKLENBURG
NONCD0002801	SWANNANOA DJJDP PROPERTY	SWANNANOA	BUNCOMBE
NONCD0002238	TERMINEX	WINSTON-SALEM	FORSYTH
NONCD0002588	THE STORE-SILOAM	SILOAM	SURRY
NCD002560159	THIELE-ENGDAHL	WINSTON-SALEM	FORSYTH
NONCD0002595	THOMAS CROWN WOOD PROD	MOCKSVILLE	DAVIE
NONCD0002599	TICAR CHEMICAL	ASHEVILLE	BUNCOMBE
NCD082362989	TUNGSTEN QUEEN MINE	TUNGSTEN	VANCE
NONCD0002829	TWIN CITY INDUSTRIAL CENTER	WINSTON-SALEM	FORSYTH

NCD000822957	UNION CARBIDE/EVEREADY	ASHEBORO	RANDOLPH
NCD003184249	UNION CARBIDE/EVEREADY	GREENVILLE	PITT
NCSFN0406924	VC CHEMICAL	WADESBORO	ANSON
NCN000410344	VC CHEMICAL	WINSTON-SALEM	FORSYTH
NONCD0002692	WALNUT COVE SUPPLY WELL	WALNUT COVE	STOKES
NCN000407302	WILMINGTON GUN CLUB	WILMINGTON	NEW HANOVER
NONCD0002725	WILGROVE MHP	CHARLOTTE	MECKLENBURG
NONCD0002724	WILGROVE EXPRESS	CHARLOTTE	MECKLENBURG
NONCD0002330	WINIFRED PRIDDY PROPERTY	LAWSONVILLE	STOKES
NONCD0001110	WOODSON-TENET	GOLDSTON	CHATHAM
NNONCD0002760	WORTH CHEMICAL	CHARLOTTE	MECKLENBURG

Note: There are many other sites not listed in Tables 5 and 6 where staff are conducting work on residential properties with contaminated drinking water wells or other contamination and having no responsible parties, bankruptcy claims, review of requests for "No Further Action Status," newly tracked site screenings, and responses to public inquiries on sites.

V. IMMINENT HAZARD SITES

DENR and the US EPA are committed to addressing imminent hazard sites when identified. Table 7 provides a list of sites where imminent hazards have been discovered, or where abatement activities have continued, in fiscal 2010-11. Their location, a site description, status and funding source are also provided.

TABLE 7. SUMMARY OF IMMINENT HAZARD SITES

Site	*City/ County*	*Site Description*	*Status*	*Funding Source*
American Distillation	Leland/ Brunswick	Sheen observed in surface water indicating possible spill.	The Inactive Hazardous Sites Branch is overseeing abatement of contaminated soils. The Division of Water Quality is addressing the surface water.	Responsible Party
Austin Powder	Asheville/ Buncombe	Approximately 2000 lbs of ammonium nitrate powder was released from a truck on a roadway in 7/10.	DENR supervised removal conducted by responsible party. No further action required.	Responsible Party
Atkinson Street Contamination	Hamlet/ Richmond	Private well contaminated with hazardous substances above federal drinking water limits.	DENR conducted testing to determine sources of contamination. DENR looking into alternate water for residence.	State
Bechmann Technologies	Durham/ Durham	Several residences and other property found to have drinking water wells with contaminants above federal drinking water standards. Source of contamination not known.	US EPA has connected four residences to city service. The US EPA plans no further work. The DENR plans to investigate whether responsible parties can be located.	US EPA
1104 Biddle Street	New Bern/ Craven	Unknown quantity of fertilizer was dumped when tractor trailer was cleaned out in abandoned lot.	Craven County Emergency Services responded to initial report. Site inspected by DENR staff. Sampling required to determine site conditions. DENR plans to contract assessment in near future.	State
Chapel Street Battery Dump	Kannapolis/ Rowan	Lead-contaminated soils in a residential area due to battery casing disposal.	The US EPA completed a cleanup of soil contamination in 2/11.	US EPA
Cheesman Property	Rockwell/ Cabarrus	Residential property contaminated with lead from battery casing disposal.	DENR conducted sampling to determine extent of contamination. Removal of soils is scheduled for FY11/12.	State
Crowders Mountain State Park	Gastonia/ Gaston	Large disposal of drummed wastes located next to a residential area and a state park.	DENR removed some of the drums. Due to large numbers, DENR did not have the resources to remove all of the drums and contaminated soils. The US EPA agreed to take over the drum/contaminated soil removal. All of the wastes and contaminated soils have been removed. DENR is now investigating conducting remediation of contaminated groundwater found at the site.	State/ US EPA
Dart Transport Spill	Goldsboro/ Wayne	Paint thinner spill on highway March 20, 2010.	Responsible party reported having remedied the spill. DENR received and reviewed remedial summary and data this fiscal year. No further action is required.	Responsible Party
Dove Environmental Storage Unit	Charlotte/ Mecklenburg	More than 100 abandoned drums of various chemicals.	US EPA completed removal of containers 11/10.	US EPA
Eubanks Road Contaminated Well	Chapel Hill/ Orange	Residential well contaminated with pesticides.	The US EPA provided bottled water and is arranging for a water line connection.	US EPA

Gastonia Industrial Truck	Gastonia/ Gaston	Several residential wells contaminated with trichloroethylene above drinking water standards.	The US EPA retested wells. Replaced filters on ones that exceeded drinking water standards. The US EPA is screening the site for addition to National Priorities List and will continue to monitor while under investigation.	US EPA
Genwove US/ Coldwater Veneer	Indian Trail/ Union	Contractor observed filling on-site vaults with construction debris including drums, electrical components, hydraulic fluids and other unknown fluids.	DENR oversaw owner assessment. Work complete. No further action required.	Responsible Party
Hoss Moore Tank Site	Statesville/ Iredell	Residential property with about 150 cylinders (some buried) of ethylene oxide.	The US EPA detonated/removed containers in 3/11.	US EPA
Hwy 87 Methanol Spill	Fayetteville/ Bladen	In 8/10 a tanker truck wreck caused an estimated 3000 gallons of methanol to be released.	Material and contaminated soils removed same day. Site cataloged for further investigation.	Responsible Party
Invista (aka Hercofina/ Cape Industries	Wilmington/ New Hanover	Oxidate spill on property	Material recovered. Did not contaminate soils.	Responsible Party
Kapp Street Fertilizer	Dobson/ Surry	650 gallon spill of liquid fertilizer and pesticides occurred 4/11.	DENR oversaw excavation and sampling. Final report pending.	Responsible Party
Marshallberg Boat Yard	Marshallberg/ Carteret County	Owner cleaned out warehouses and had contractor pile and burn material removed. Materials included waste solvents and paints.	DENR issued an NOV for the illegal burn. DENR directed owner how to proceed on cleanup. Owner has not volunteered to take action. Site is already cataloged as requiring assessment and potential cleanup.	None
My Favorite Martin Truck Accident	Marion/ McDowell	2000 batteries released during a truck accident occurred 2/11.	DENR oversaw removal and sampling. Final paperwork not submitted as dispute between company and insurance carrier.	Responsible Party
Mary Chappell Residence	Hamlet/ Richmond	Residential well with hazardous substance contamination above federal drinking water limits.	DENR conducted an investigation to try to identify the source of contamination. Owner qualified for Bernard Allen Fund assistance and was provided alternate water through that fund.	State
Norfolk Southern Rail Yard	High Point/ Guilford	Estimated 12-ton release of teraphthalic acid from a rail car.	Responsible party indicted cleaned up spill in FY09/10. DENR is still awaiting final cleanup report. If not received soon, will catalog site for further work later.	Responsible Party
Pawley Drive Contamination	Charlotte/ Mecklenburg	Private drinking water well contaminated with chlorinated solvents.	DENR connected residences to city service.	State
Pender Plating	Burgaw/ Pender	High levels of chromium in soil and groundwater in a residential area.	DENR initiated assessment. Work will continue into FY11/12.	State
Romie Lane Drum	Rocky Mount/ Edgecombe	200-400 drums of mixed chemicals. Five contained potassium ferrocyanide. Trailers holding the containers leaked. Owner of property bankrupt.	The US EPA began an investigation in 6/11. Work is ongoing.	US EPA
RPM Fire	Hudson/ Caldwell	Fire at a facility that manufactures wood finishing products.	DENR oversaw debris cleanup and advised owner of assessment needed and of cleanup processes.	Responsible Party
Springs Road Go Cart Track	Conover/ Catawba	Pond in residential area with creosote-like material.	Elevated levels of volatile and semi-volatile organic compounds in surface water. US EPA initiated action investigation 1/11.	US EPA

Texfi Industries	Fayetteville/ Cumberland	Chlorinated solvent groundwater contaminant plume has migrated from a former textile mill to the City of Fayetteville's water plant property. The city's finished drinking water holding tank sits in contact with contaminated groundwater. The city's drinking water intakes on the Cape Fear River are 450 feet downstream from the Texfi property line.	DENR constructed a subsurface barrier wall in 2001 to prevent further contaminant migration to the holding tank area and installed extraction wells to remove contaminated groundwater in the area of the tank. Concentrations have been reduced. DENR has previously received special appropriations to continue to operate the extraction wells and monitor groundwater on the City's property. DENR is addressing the source area through use of funds from a bankruptcy settlement. Source treatment is underway. Extensive source contamination into clay formations at the site will make source removal/treatment extremely expensive.	State
Ulah Battery	Asheboro/ Randolph	Battery dump with lead contaminated soils in a residential area.	Multiple cleanup actions conducted by ~~both DENR~~both DENR and the US EPA in the past. Additional investigation by DENR followed by a request for further federal cleanup. US EPA renewed assessment in 7/11.	State/ US EPA
Unionville-Indian Trail Drum	Monroe/Union	Agricultural/residential area. Owners abandoned drums of chemicals. Approximately 200 drums in various states had leaked contents.	The US EPA completed the removal of drums and contaminated soils in 11/10. No follow-up sampling was conducted.	US EPA
Villa Mobile Home Park	Kannapolis/ Cabarrus	Lead - contaminated soils in a residential area due to battery casing disposal.	The US EPA placed plastic sheeting over the area to prevent exposure. The plastic washed out with a storm. DENR is looking a conducting a removal of contaminated soils.	State
Vinegar Hill	Tabor City/ Columbus	Residential area contaminated with lead from battery casing disposal.	DENR conducted an assessment to determine the extent of contamination. Removal is planned for FY11/12.	State
Vopak Terminal	Wilmington/ New Hanover	In 6/11, overfill of rail car caused approximately 375 gallons of monoethylene glycol to be released.	Free liquids were vacuumed and contaminated soils were excavated. DENR oversaw assessment and cleanup. Work complete.	Responsible Party
Watts, Levi Property	Tabor City/ Columbus	Residential area contaminated with lead from battery casing disposal.	DENR has initiated removal of contaminated soils. Work will continue into next year.	State
Woodleaf Road Residence	Rowan	Residential well contaminated with hazardous substances above federal drinking water limits.	DENR provided owner with alternate water supply.	State

VI. SUMMARY OF THE INACTIVE HAZARDOUS SITES CLEANUP FUND AND NATIONAL PRIORITIES LIST COST SHARE FUND

Inactive Hazardous Sites Cleanup Fund

Revenue Not Dedicated to the Pre-Regulatory Landfills
FY 2010-11

Beginning Cash Balance	$650,722
Deposits (FY 2010-11)	
Interest	$7,529
Deposits from Scrap Tire Account	$390,434
No Further Action review fees	$4,000
Texfi appropriation	$50,000
Total Deposits	**$451,963**
Expenditures (FY 2010-11)	
Texfi Industries-Fayetteville source remediation contract	$200,984
Orphan priority site sampling/removal contract	$251,913
Alternate drinking water supplies provided	$21,250
Misc: Newspaper notice, laboratory	$2,748
Legislative withdrawals	$6,982
Total Expenditures	**$483,877**
Ending Cash Balance	**$618,808**
Obligations (Encumbered but not Paid)	
Texfi source remediation contract	$173,001
Orphan priority site sampling/removal contract obligation	$257,347
Safety-Kleen Bankruptcy	$654
Pending alternate drinking water supplies	$52,000
Total Current Obligations	**$483,002**
Current Effective Cash Balance	**$135,806**
Orphan Cleanup Cost Requirements (see Chapter II for more details)	
Funds needed for 214 priority orphan sites identified	**$120,595,206**

Additional Funds from Bankruptcy Proceedings

With the assistance of the Attorney General's Office, DWM has recovered funds for assessment and remediation of 16 sites through bankruptcy proceedings. Payments out of a bankruptcy

proceeding must go into a special trust account to be used only for the specific sites identified in the bankruptcy settlement agreement. Funds recovered through bankruptcy proceedings include the following:

Pillowtex -- $210,000 for two former Pillowtex sites.
SCM -- $5.3 million for the SCM Corp site in Charlotte.
CMI -- $1,250,000, $750,000 and $100,000 recovered for three CMI sites. $258,352, $42,068, and $32,660 remain, respectively, in each account.
Safety-Kleen -- $654 has been deposited in the Inactive Hazardous Sites Cleanup Fund.
Chemtura -- $3,750,000 for two sites
Lyondell -- $1,831,982 for four sites
Mark IV -- $42,738 for three sites.

Revenue Dedicated to the Pre-Regulatory Landfills
FY 2010-11

Beginning Cash Balance	$12,423,219
Deposits (FY 2010-11)	
Tax	$9,010,177
Interest	$163,638
Total Deposits	**$9,173,815**
Expenditures (FY 2010-11)	
Contracts	$1,399,761
Local government reimbursement	$335,641
Operating budget	$937,752
Legislative withdrawals	$149,175
Total Expenditures	**$3,052,778**
Ending Cash Balance	**$18, 544,286**
Total Current Contract and Local Government Obligations (Encumbrances not yet Paid)	**$12,506,399**
Current Effective Cash Balance	**$6,165,514**

* A portion of a solid waste disposal tax established by the legislature is dedicated to the Pre-Regulatory Landfill Program. Funds are used to contract assessment and cleanup work at uncontrolled pre-regulatory landfills and to fund state staff to implement the program.

National Priorities List Cost Share Fund
FY 2010-11

Estimated cost of federal trust fund/N.C. cost share cleanups	$120,780,639
N.C.'s 10 percent cost share for pending/ongoing cleanups	$12,078,064*
Fund disbursements for cost share payments	$7,000,317
Current balance	$7,832,616
Encumbered amount of the fund balance for cost share payments	$5,077,746
Effective Cash Balance	**$2,754,870***

* Cleanup cost estimates are not yet available for all sites. The cost share figure will increase as cost estimates become available. Also, other sites may be added to the National Priorities List that will require a state cost share. This account is also used to pay for the state's operation and maintenance obligations at these sites. Aside from interest, the fund has no continuing source of income.

APPENDIX

INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST
2011

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCN000407672	BEACON MANUFACTURING	2425 US HWY 70	SWANNANOA	BUNCOMBE	58.93	surface water	organics
						soil	organics
						soil	metals
						groundwater	metals
						groundwater	organics
NONCD0001179	WILMINGTON IRON WORKS (FORMER)	S WATER, S FRONT, & ORANGE	WILMINGTON	NEW HANOVER	57.88	known/suspected	
NONCD0002734	WILMINGTON FERTILIZER COMPANY	1702 NORTH 6TH STREET	WILMINGTON	NEW HANOVER	57.49	groundwater	inorganics
NONCD0002736	WILMINGTON SHIPYARD (FORMER)	1500 POINT HARBOR RD.	WILMINGTON	NEW HANOVER	57.49	groundwater	metals
						soil	organics
NCD003184710	CAROLINA CREOSOTING CORPORATION	EASTBROOK ROAD	LELAND	BRUNSWICK	57.17	soil	organics
						groundwater	organics
NCD000605303	FEDERAL PAPER BOARD CO., INC.	865 JOHN L RIEGEL RD	RIEGELWOOD	COLUMBUS	56.08	groundwater	metals
						groundwater	organics
NONCD0001250	ALMONT SHIPPING	423 NUTT STREET	WILMINGTON	NEW HANOVER	56.01	groundwater	metals
						groundwater	inorganics
						groundwater	organics
						soil	metals
						soil	organics
NCD050409150	GENERAL ELECTRIC CO/WILMINGTON	3901 CASTLE HAYNE RD	WILMINGTON	NEW HANOVER	55.76	groundwater	organics
NCD981864614	ULAH BATTERY/BATTERY PILES	SR 1219/DINAH RD	ASHEBORO	RANDOLPH	55.64	soil	acids
						soil	metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD074511361	AQUAIR CORPORATION	133000 SAM NEELY RD	CHARLOTTE	MECKLENBURG	55.35		
						soil	organics
						groundwater	organics
						groundwater	metals
						soil	metals
NONCD0001098	NATIONAL TEXTILES, LLP	REEP DRIVE	MORGANTON	BURKE	54.94		
						surface water	organics
						groundwater	organics
						soil	organics
NONCD0001646	DUPONT CEDAR CREEK SITE	3216 CEDAR CREEK RD	FAYETTEVILLE	CUMBERLAND	53.70		
						surface water	organics
						groundwater	organics
NCD051745685	HOLDING POND FOR WASTE/USS	500 BROOME RD	GREENSBORO	GUILFORD	53.06		
						soil	organics
						soil	metals
						groundwater	organics
						surface water	metals
						surface water	organics
						soil	pesticides
NCD003229358	SCM PROCTOR-SILEX/WEAREVER	HAY ST	MOUNT AIRY	SURRY	53.02		
						sediment	metals
						sediment	organics
						soil	metals
						groundwater	metals
						surface water	metals
NCD000830646	CAROLINA P&L CO. SUTTON STEAM	HWY 421	WILMINGTON	NEW HANOVER	52.85		
						sediment	metals
						groundwater	metals
						soil	metals
NCN000407584	SOUTHERN METALS RECYCLING, INC	1002 SOUTH FRONT STREET	WILMINGTON	NEW HANOVER	52.56		
						groundwater	metals
						soil	metals
NCD980729677	KNOB CREEK FLYASH DISPOSAL	SR 1540	BREVARD	TRANSYLVANIA	52.53		
						soil	metals

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD986166692	HARWELL ROAD SEPTIC PIT	HARWELL ROAD	GASTONIA	GASTON	52.37	
					groundwater	organics
NCD003167780	SPRAGUE ELECTRIC COMPANY	HWY 194	LANSING	ASHE	52.33	
					groundwater	metals
					groundwater	organics
					soil	metals
NONCD0002857	ABERDEEN FLORIST & GARDEN CENTER	500 S SANDHILLS BLVD	ABERDEEN	MOORE	52.02	
					groundwater	organics
NCN000407775	ROYSTER FERTILIZER	1690 NE ROYSTER RD	LELAND	BRUNSWICK	52.02	
					groundwater	metals
					groundwater	organics
					soil	metals
					soil	organics
					surface water	metals
NCD088563242	MONSANTO COMPANY/ROHM & HAAS	CEDAR CREEK RD	FAYETTEVILLE	CUMBERLAND	51.78	
					sediment	metals
					groundwater	organics
NCN000407333	TRIAD USED AUTO SALES	1520 ALAMANCE CHURCH RD	GREENSBORO	GUILFORD	51.53	
					groundwater	organics
					groundwater	metals
					soil	organics
					soil	metals
NONCD0001025	TOOMEY PROPERTY	1020 HICKORY GROVE ROAD	SPRINGWOOD	GASTON	51.23	
					groundwater	organics
					soil	organics
NONCD0001554	COX DODGE (FORMER)	1501 LIPSCOMB ROAD	WILSON	WILSON	51.05	
					groundwater	organics
					surface water	organics
NCD982117590	CUSTOM PROCESSING AND	1110 SURRETT DRIVE	HIGH POINT	GUILFORD	51.04	
					groundwater	metals
					soil	organics
					groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NONCD0000016	CMC LANDFILL	EAST MAIN STREET	ELKIN	SURRY	51.02		
						soil	organics
						groundwater	organics
NCD986178226	TEXFI INDUSTRIES, INC	601 HOFFER DRIVE	FAYETTEVILLE	CUMBERLAND	50.55		
						groundwater	organics
						soil	organics
NCD093338119	SCM CORP. GLIDDEN COATINGS & RESINS	3926 GLENWOOD DRIVE	CHARLOTTE	MECKLENBURG	50.29		
						groundwater	organics
NCD986172518	OLD MOUNT HOLLY ROAD PCE SITE	OLD MT HOLLY RD & FREEDOM DR	CHARLOTTE	MECKLENBURG	50.26		
						groundwater	organics
NONCD0002835	PRIME EQUIPMENT CO	1020 N FRONT ST	WILMINGTON	NEW HANOVER	50.19		
						soil	organics
						groundwater	organics
NCN000407480	HORTON IRON & METAL	2216 US HWY 421 N	WILMINGTON	NEW HANOVER	49.83		
						sediment	metals
						surface water	pesticides
						surface water	metals
						soil	metals
						sediment	pesticides
						groundwater	metals
						groundwater	pesticides
NCD003231545	SHERWOOD TREATING CO., INC.	1660 SILAS CREEK PKWAY	WINSTON-SALEM	FORSYTH	49.78		
						soil	metals
						groundwater	metals
NCD047371794	COASTAL LUMBER CO	934 N CRAVEN ST	NEW BERN	CRAVEN	49.73		
						groundwater	inorganics
						soil	inorganics
NONCD0002564	ALLEN'S FARM SUPPLY	511 N 3RD ST	WILMINGTON	NEW HANOVER	49.72		
						groundwater	organics
						groundwater	metals
NONCD0000004	STURGEON CITY PROPERTY	4 COURT STREET	JACKSONVILLE	ONSLOW	49.67		
						sediment	metals
						groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD038551263	TRI-COUNTY COMMUNITY COLLEGE	OFF US 64 E SOUTH OF NC 1	MURPHY	CHEROKEE	49.66	
					soil	organics
					groundwater	organics
NONCD0002852	CLAYTON FARMS	1833 LOOP RD	CLAYTON	JOHNSTON	49.63	
					groundwater	pesticides/herbicides
					soil	pesticides/herbicides
NCD986176444	STROH/CHITTY FARM	OLD MILWAUKEE LANE	WINSTON-SALEM	FORSYTH	49.56	
					soil	organics
					groundwater	organics
NCD000813592	GA-PACIFIC CORP/HDWD SAW	PLYWOOD DR	PLYMOUTH	WASHINGTON	49.53	
					soil	organics
					groundwater	organics
					sediment	organics
					groundwater	pesticides
					groundwater	metals
					sediment	metals
					soil	pesticides
					soil	metals
NONCD0001052	THOMASVILLE FURNITURE	151 SMETHPORT DRIVE	WEST JEFFERSON	ASHE	49.51	
					groundwater	organics
					soil	inorganics
					soil	metals
NONCD0002822	GRAY & CREECH (FRMR)	8024 GLENWOOD AVE	RALEIGH	WAKE	49.37	
					groundwater	organics
NCD000772046	MOBIL OIL CORP/KOCH REFINING	3334 RIVER RD	WILMINGTON	NEW HANOVER	49.07	
					soil	metals
					groundwater	metals
					groundwater	organics
NC0001279710	WOODY WILSON BATTERY/ASHLEY	HWY 211	ASHLEY HEIGHTS	HOKE	49.02	
					soil	metals
					soil	organics
NCD986171379	NEW HAVEN DRIVE TCE	NEW HAVEN DRIVE	GASTONIA	GASTON	48.98	
					groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD000770487	JOHNSON CONTROLS GLOBE BATTERY	OLD GREENSBORO ROAD	WINSTON-SALEM	FORSYTH	48.85	
						soil organics
						surface water metals
						sediment metals
NCD046148540	CENTRAL TRANSPORT COMPANY	600 MELYNDA ROAD	CHARLOTTE	MECKLENBURG	48.84	
						groundwater metals
						groundwater organics
						groundwater inorganics
						sediment organics
						sediment metals
NCSFN0407074	NC MARITIME MUSEUM	310 FRONT ST	BEAUFORT	CARTERET	48.84	
						sediment metals
						sediment pesticides
						sediment organics
NONCD0002381	REDDICK FUMIGANTS, INC.	3002 WEST MAIN STREET	WILLIAMSTON	MARTIN	48.83	
						groundwater organics
NCD986175636	ASHE PATTERN SHOP (FORMER)	4411 BEATY ROAD	GASTONIA	GASTON	48.82	
						groundwater organics
NCD986180909	SHELBY DYEING & FINISHING	2270 SAM LATTIMORE ROAD	SHELBY	CLEVELAND	48.82	
						soil metals
						soil organics
						groundwater organics
						groundwater metals
NCD980729412	CAROLINA TANK CLEANING COMPANY	HWY 68-4 MI N OF I-40	GREENSBORO	GUILFORD	48.53	
						soil metals
						soil organics
NONCD0000085	JONES & PRESNELL STUDIO	433 LAWTON ROAD	CHARLOTTE	MECKLENBURG	48.48	
						groundwater organics
NCD986175628	LEE'S MOTOR WORKS	BEATY ROAD	GASTONIA	GASTON	48.48	
						surface water organics
						soil organics
						groundwater organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD000623223	MARTIN MANUFACTURING PROPERTIES	E MAIN ST US 17	WILLIAMSTON	MARTIN	48.40		
						groundwater	organics
						groundwater	metals
NCD986186518	OLD ATC REFINERY	801 SURRY STREET	WILMINGTON	NEW HANOVER	48.40		
						soil	organics
						sediment	metals
						groundwater	metals
						soil	metals
NCD042269134	SOUTHERN SCREW/FARLEY METALS	1225 BARKLEY RD	STATESVILLE	IREDELL	48.40		
						soil	metals
						soil	bases
						groundwater	metals
						groundwater	cyanide
						groundwater	organics
NCD981474158	SWEETEN CREEK DRUM SITE	115 SWEETEN CREEK ROAD	ASHEVILLE	BUNCOMBE	48.40		
						soil	metals
NCD041230418	AMP INCORPORATED	3900 REIDSVILLE ROAD	WINSTON-SALEM	FORSYTH	48.35		
						soil	metals
						soil	organics
						sediment	metals
						sediment	cyanide
						soil	cyanide
						surface water	metals
NCD986188027	CHAMPION LANDFILL #3	SR 1550 I40	CANTON	HAYWOOD	48.25		
						soil	metals
NONCD0001185	CSX-NUTT ST	515 NUTT ST	WILMINGTON	NEW HANOVER	48.21		
						groundwater	metals
						groundwater	organics
NCD986185411	OLD WESTERN NC FAIRGROUNDS	BTWN US 176 & SOUTHER RR	EAST FLAT ROCK	HENDERSON	48.18		
						soil	organics
						groundwater	organics
						soil	pesticides
						groundwater	metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD980600449	SED, INC. RADAR ROAD	500 RADAR ROAD	GREENSBORO	GUILFORD	48.18	soil organics
NCD003163888	HENREDON FURNITURE	HENREDON RD	MORGANTON	BURKE	48.17	groundwater organics soil organics
NONCD0002368	EASTERN CAR CARE (FRMR)	703 E MAIN ST	MURFREESBORO	HERTFORD	48.10	groundwater organics
NCD041414780	FIELDCREST MILLS INC./NC FINISHING	US 29/70 N	SPENCER	ROWAN	48.07	groundwater metals groundwater organics soil organics soil metals
NCD091572073	NATIONAL STARCH & CHEMICAL	HWY 74/76 WEST	LELAND	BRUNSWICK	48.04	known/suspected
NCD045924032	WEST POINT PEPPERELL LUMBERTON	CHESTNUT ST EXTN	LUMBERTON	ROBESON	48.02	groundwater organics soil organics
NCD045924065	AMF/HATTERAS YACHTS	110 N GLENBURNE ROAD	NEW BERN	CRAVEN	48.00	groundwater organics
NCD065288847	CF NITROGEN, INCORPORATED	HWY 45	WINTON	HERTFORD	47.99	soil metals groundwater metals
NONCD0001843	HERCULES	9 DAVIS DRIVE	DURHAM	DURHAM	47.93	surface water organics groundwater organics
NCD024477556	WINSTON CONTAINER COMPANY	4732 MORRIS FIELD RD	CHARLOTTE	MECKLENBURG	47.89	soil organics
NONCD0001094	ALLISON MANUFACTURING CO	930 OLD CHARLOTTE ROAD	ALBEMARLE	STANLY	47.87	soil organics groundwater organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NONCD0000023	CAROLINA P&L CO. FAYETTEVILLE	CUMBERLAND RD & OWEN DR	FAYETTEVILLE	CUMBERLAND	47.78	surface water	organics
						soil	organics
						groundwater	organics
NONCD0001058	ELECTRONICS COMPONENT	200 ELECTRONICS PARKWAY	BURGAW	PENDER	47.78	groundwater	organics
NONCD0001779	GLENN MANUFACTURING/DECORATIVE	HWY 52 & RATLIFF GIN ROAD	MORVEN	ANSON	47.76	soil	organics
						groundwater	organics
NCD003448610	GALVAN INDUSTRIES, INC.	HWY 49	HARRISBURG	CABARRUS	47.62	soil	metals
						groundwater	metals
NONCD0002420	APAC MAINTENANCE SHOP (FRMR)	240 CENTER ST	JACKSONVILLE	ONSLOW	47.59	soil	metals
						groundwater	metals
NCN000409881	PAYNE RD SOLVENTS	105 PAYNE RD	BESSEMER CITY	GASTON	47.59	groundwater	organics
						soil	organics
NONCD0001200	COASTLINE INN PROPERTY	503 NUTT ST	WILMINGTON	NEW HANOVER	47.44	groundwater	organics
						groundwater	metals
NCD990883001	MONARCH FURNITURE CORPORATION	300 SCIENTIFIC ST	JAMESTOWN	GUILFORD	47.40	soil	metals
						groundwater	metals
NONCD0001550	COTTMAN TRANSMISSION	145-147 S. COLLEGE ROAD	WILMINGTON	NEW HANOVER	47.30	soil	organics
						groundwater	organics
NCD986180917	SPANN PROPERTY	US HIGHWAY 25	HENDERSONVILLE	HENDERSON	47.26	known/suspected	
NONCD0001029	R & D LAMINATORS INC	HOLLOMAN ROAD (SR 1187)	AHOSKIE	HERTFORD	47.21	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD024895864	STEWART-WARNER CORP/BASSICK-	2941 INDIANA AVE	WINSTON-SALEM	FORSYTH	47.19	soil	organics
NCD037160439	TOASTMASTER, INCORPORATED	OLD LAUREL HILL CHURCH RD	LAURINBURG	SCOTLAND	47.08	soil	organics
						soil	cyanide
						groundwater	organics
						groundwater	metals
						groundwater	cyanide
						soil	metals
NONCD0001952	KERR FACILITY - AHOSKIE	228JOHNNY MITCHELL RD.	AHOSKIE	HERTFORD	46.99	groundwater	organics
NCD986176030	RHODERIA DRIVE WELLS	LAKEWOOD & RHODERA DRIVE	STALLINGS	UNION	46.98	groundwater	organics
						soil	metals
NCD044444735	CROMPTON & KNOWLES CORP.	SPENCER MT RD	LOWELL	GASTON	46.97	soil	metals
						soil	organics
NCD986231967	TOM SADLER ROAD WELLS	TOM SADLER RD	CHARLOTTE	MECKLENBURG	46.92	soil	metals
						groundwater	organics
						groundwater	metals
NCD003183571	WINTERVILLE MACHINE WORKS, INC.	209 S MILL ST	WINTERVILLE	PITT	46.90	soil	metals
NCN000407188	US 1-15/501 ABERDEEN	517 S SANDHILLS BLVD	ABERDEEN	MOORE	46.88	surface water	organics
						soil	organics
						groundwater	organics
						soil	metals
						sediment	metals
						sediment	organics
NONCD0000081	TRITON, INC	1610 SOUTH WARD BLVD	WILSON	WILSON	46.84	groundwater	metals
						groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NONCD0001739	FULFLEX	500 E. 7TH STREET	SCOTLAND NECK	HALIFAX	46.73	
					groundwater	organics
NCD003233673	HOOVER REPAIR SHOP	461 N SOUTH STREET SR1669	MT AIRY	SURRY	46.69	
					soil	metals
					groundwater	cyanide
					groundwater	metals
					soil	cyanide
NCD980518211	IRT/IBM CORPORATION	4101 S I-85	CHARLOTTE	MECKLENBURG	46.67	
					groundwater	metals
NONCD0002874	MOHAWK-KARASTAN	2007 DICKINSON AVE	GREENVILLE	PITT	46.67	
					soil	organics
					groundwater	metals
					soil	metals
NONCD0002779	APAC-CASTLE HAYNE ASPHALT PLANT	4909 N COLLEGE RD	CASTLE HAYNE	NEW HANOVER	46.65	
					groundwater	organics
					soil	organics
NCD980842470	KAISER FERTILIZER PLANT	INTSEC HWY 87 & SR 1870	RIEGELWOOD	COLUMBUS	46.65	
					groundwater	inorganics
					groundwater	organics
					groundwater	metals
NONCD0001156	CLEAN-CLEAN DRY CLEANERS	2408 SUNSET AVE	ROCKY MOUNT	NASH	46.63	
					soil	organics
					groundwater	organics
NCD003197704	SALT WOOD PRODUCTS, INC.	SR 1005	COVE CITY	CRAVEN	46.59	
					groundwater	organics
					soil	metals
					soil	organics
					groundwater	metals
NONCD0002861	UNION RIDGE ROAD SITE	132 UNION RIDGE RD	BURLINGTON	ALAMANCE	46.59	
					groundwater	organics
NONCD0001155	D&G PROPERTIES-SLAUGHTERHOUSE	ROYSTER RD	NAVASSA	BRUNSWICK	46.57	
					groundwater	metals
					soil	metals

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD072012354	SINGER CO/FURNITURE DIV WASHINGTON	STATE ROAD 1175	CHOCOWINITY	BEAUFORT	46.57		
						groundwater	pesticides
						groundwater	metals
						sediment	organics
						soil	organics
						groundwater	organics
NONCD0001690	CITY OF GOLDSBORO MAINTENANCE	1601 N CLINGMAN ST	GOLDSBORO	WAYNE	46.56		
						groundwater	organics
NONCD0001886	HYDE COUNTY COURTHOUSE	30 OYSTER CREEK RD	SWAN QUARTER	HYDE	46.56		
						soil	pesticides/herbicides
						groundwater	pesticides/herbicides
NCD041519364	TEXASGULF CHEMICALS COMPANY	HWY 306 NORTH	AURORA	BEAUFORT	46.56		
						groundwater	organics
						groundwater	pesticides
						soil	organics
						surface water	metals
						sediment	organics
						sediment	metals
						soil	pesticides
NCD003184249	UNION CARBIDE CORP/EVEREADY	264 BYPASS-EVANS ST EXTN	GREENVILLE	PITT	46.52		
						groundwater	organics
						groundwater	metals
NC5210022906	USA RESERVE XVIII AIRBORNE CORPS	405 FISHER ST	MOREHEAD CITY	CARTERET	46.51		
						known/suspected	
NONCD0001049	LEXINGTON FURNITURE IND. PLNT #7	178 LFI COMPLEX LANE	LEXINGTON	DAVIDSON	46.43		
						groundwater	metals
						groundwater	organics
NCD980844336	UNION CARBIDE BATTERY	5400 HOVIS ROAD	CHARLOTTE	MECKLENBURG	46.30		
						surface water	organics
						soil	metals
NONCD0001186	CARR MILL MALL	200 N GREENSBORO ST	CARRBORO	ORANGE	46.28		
						groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NONCD0001778	GLEN RAVEN MILLS (FORMER)	142 GLEN RAVEN ROAD	GLEN RAVEN	ALAMANCE	46.24	groundwater	metals
						groundwater	organics
NCN000409811	ELECTRIC MOTOR & TRANSFORMER	1900 S SANDERS ST	RALEIGH	WAKE	46.21	groundwater	organics
						soil	organics
NCD980557839	IDEAL BASIC INDS/PLANT MARL	HOLLY SHELTER ROAD	CASTLE HAYNE	NEW HANOVER	46.21	groundwater	organics
						soil	metals
NONCD0001128	RESOLUTION PACKAGING	468 CAROLINA AVE	MARION	MCDOWELL	46.21	groundwater	metals
NONCD0001023	HEAVY EQUIPMENT SCHOOL	HEAVY EQUIPMENT ROAD	CHARLOTTE	MECKLENBURG	46.20	groundwater	organics
NCSFN0406906	OLD STAKE ROAD	OLD STAKE ROAD	CHADBOURNE	COLUMBUS	46.17	groundwater	metals
						soil	metals
NCD003149663	RADIATOR SPECIALTY COMPANY	1900 WILKINSON BLVD	CHARLOTTE	MECKLENBURG	46.16	sediment	metals
						soil	organics
						soil	metals
						groundwater	organics
						sediment	organics
NCD049772023	H & S PROCESSORS, INC.	NC HIGHWAY 150 WEST	LINCOLNTON	LINCOLN	46.11	groundwater	organics
NCD003216462	UNION CARBIDE CORP/EVEREADY	800 ALBEMARLE RD	ASHEBORO	RANDOLPH	45.97	groundwater	organics
						soil	organics
NONCD0002555	WHITEVILLE BUMPER & GLASS (FORMER)	824 WEST JEFFERSON STREET	WHITEVILLE	COLUMBUS	45.86	soil	organics
						soil	metals
						groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NONCD0001112	OLD JOHN'S RIVER ROAD DUMP	MILE MARKER 296.1, BR PKWY	BLOWING ROCK	WATAUGA	45.81	
					soil	organics
					soil	metals
NCD003213030	DOUGLAS BATTERY MANUFACTURING	500 BATTERY DR	WINSTON-SALEM	FORSYTH	45.69	
					groundwater	metals
NCD144192606	PARKER-ZENITH	TAYLOR STREET	ABERDEEN	MOORE	45.67	
					groundwater	organics
NONCD0001074	OLD FORD BLDG	FIFTH ST	TABOR CITY	COLUMBUS	45.62	
					groundwater	metals
					soil	metals
					soil	organics
NCD981015746	CAROLINA ALUMINUM/HERBERT	SR 1125	ROPER	WASHINGTON	45.33	
					soil	organics
NCD003167988	MARANTZ PIANO CO INC/ANEVKA, INC	HWY 64/70 E	MORGANTON	BURKE	45.30	
					groundwater	metals
					groundwater	organics
					soil	metals
					soil	organics
NCD024600579	SUPERIOR PRODUCTS COMPANY	HWY 70A	GREENSBORO	GUILFORD	45.25	
					soil	metals
NCN000409779	WAYNE AGRICULTURAL WORKS	700 S JOHN ST	GOLDSBORO	WAYNE	45.25	
					groundwater	metals
					groundwater	organics
NONCD0001485	CHATHAM MILLS, INC.	480 HILLSBORO STREET	PITTSBORO	CHATHAM	45.21	
					groundwater	organics
NONCD0001174	ARROW LAUNDRY	4735 MONROE RD	CHARLOTTE	MECKLENBURG	45.15	
					groundwater	organics
					soil	organics
NONCD0002277	PAZIUK WAREHOUSE	710 SUNNYVALE DRIVE	WILMINGTON	NEW HANOVER	45.15	
					soil	organics
					groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD981473150	CHERRY MT STREET DRUM	602 CHERRY MOUNTAIN	FOREST CITY	RUTHERFORD	45.07	soil	metals
NCN000407830	CLOROX CHEMICAL	800 GESCO ST	CHARLOTTE	MECKLENBURG	45.07	soil	pesticides
						surface water	metals
						surface water	organics
						surface water	pesticides
						sediment	metals
						soil	metals
						soil	organics
						sediment	pesticides
						sediment	organics
NONCD0001022	GIBBS ELECTROPLATING - OLD LOCATION	2229 N DAVIDSON	CHARLOTTE	MECKLENBURG	45.07	soil	metals
						soil	organics
						groundwater	metals
						groundwater	organics
NCD980728745	OSHIELDS FLY ASH	SR 1510	BREVARD	TRANSYLVANIA	44.80	known/suspected	
NCD003528825	FIELDCREST MILLS INC.	WALPAT RD	SMITHFIELD	JOHNSTON	44.79	groundwater	organics
NCD066327313	FINETEX, INC.	I85 HACKETT ST EXIT	SPENCER	ROWAN	44.77	groundwater	organics
						soil	organics
NONCD0001011	JUNG CORPORATION	718 INDUSTRIAL PARK AVE	ASHEBORO	RANDOLPH	44.77	groundwater	organics
NONCD0001169	LIBERTY FABRICS (FORMER)	US 64	JAMESVILLE	MARTIN	44.72	groundwater	organics
NCD986228054	KANNAPOLIS PCE SPILL	ENOCHVILLE ROAD	KANNAPOLIS	CABARRUS	44.71	groundwater	organics
NCD981863228	SCHERER, R.P.	2021 E. ROOSEVELT BLVD.	MONROE	UNION	44.71	groundwater	organics
						soil	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD002560159	THIELE-ENGDAHL, INCORPORATED	1100 FAIRCHILD RD	WINSTON-SALEM	FORSYTH	44.71	
					soil	metals
					soil	organics
NCD990734055	HERCOFINA/CAPE INDUSTRIES	HWY 421 N	WILMINGTON	NEW HANOVER	44.62	
					groundwater	organics
					soil	organics
					groundwater	metals
					soil	metals
NONCD0002792	MARSHALLBERG BOAT YARD	1290 & 1295 MARSHALLBERG RD	MARSHALLBERG	CARTERET	44.57	
					groundwater	organics
					soil	metals
NCD093334969	S & S METALS RECYCLING COMPANY	SHORTCUT ROAD/SR 2455	GOLD HILL	CABARRUS	44.49	
					soil	metals
					surface water	metals
NONCD0000060	WATTS REGULATOR-GENERAL AIDES	WITHROW ROAD	FOREST CITY	RUTHERFORD	44.49	
					soil	metals
NCD982080152	PEE DEE TIMBER CO	230 W BIZZELL ST	LAURINGBURG	SCOTLAND	44.48	
					surface water	metals
					soil	metals
NONCD0001116	REPUBLIC SERVICES OF NC	312 JACK SHERMAN RD	ROUGEMONT	PERSON	44.48	
					groundwater	organics
NCD042091215	RJR TECH COMPANY	841 AVOCA FARM RD	MERRY HILL	BERTIE	44.48	
					soil	organics
NONCD0000802	LES MYERS PARK	LAWNDALE AVENUE EXT.	CONCORD	CABARRUS	44.42	
					soil	metals
NONCD0002228	OAK ISLAND POLICE DEPT.	4621 E. OAK ISLAND DRIVE	OAK ISLAND	BRUNSWICK	44.36	
					groundwater	pesticides/herbicides
					groundwater	organics
					soil	organics
					soil	pesticides/herbicides
NCD981928088	TEXFI INDUSTRIES, INC/NEW BERN	SR 1317/BOSCH STREET	NEW BERN	CRAVEN	44.30	
					groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NC0000195743	JIMMY GREEN METALS	BARN HILL CHURCH ROAD	NASHVILLE	NASH	44.29	
					soil	metals
NCD084167444	STANADYNE, INC/DIESEL SYSTEMS	405 WHITE ST	JACKSONVILLE	ONSLOW	44.22	
					soil	organics
					soil	metals
NCD980557631	LIVEWIRE ELEC CO/CALIFORNIA SPRAY	1004 SOUTH GEORGE STREET	GOLDSBORO	WAYNE	44.16	
					soil	pesticides/herbicides
					groundwater	pesticides/herbicides
NCD006390561	AKZO NOBLE COATINGS, INC.	1431 PROGRESS ST	HIGH POINT	GUILFORD	44.13	
NONCD0002838	WACCAMAW TRANSPORT (FORMER)	1106 S 2ND ST	WILMINGTON	NEW HANOVER	44.12	
					soil	organics
					groundwater	organics
					groundwater	metals
NONCD0001178	PACKER PROPERTY	US 701 & JEWEL ST	WHITEVILLE	COLUMBUS	43.99	
					groundwater	organics
NONCD0001432	THE CAPE GOLF COURSE	535 THE CAPE BLVD	WILMINGTON	NEW HANOVER	43.99	
					groundwater	organics
					groundwater	metals
NONCD0001054	WILLIAMS AUTO CENTER	401 D STREET	BRIDGETON	CRAVEN	43.93	
					soil	metals
					groundwater	metals
					soil	organics
NONCD0000038	AYCOCK PROPERTY	SR 1162 & 1103	WILSON	WILSON	43.92	
					groundwater	organics
NONCD0002711	WESTPOINT STEVENS	AIRPORT ROAD	WAGRAM	SCOTLAND	43.92	
					groundwater	organics
NCD003164464	UNIROYAL INC/UNIROYAL CHEMICAL	214 W RUBY AVE	GASTONIA	GASTON	43.79	
					soil	organics
NONCD0002543	STEVCOKNIT FABRICS COMPANY	601 WILMINGTON ROAD	WALLACE	DUPLIN	43.75	
					soil	organics
					groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NONCD0002777	APAC-GOLDSBORO ASPHALT PLANT	2421 ARRINGTON BRIDGE RD	GOLDSBORO	WAYNE	43.72	groundwater	organics
						soil	organics
NONCD0001922	ALKALI SCREEN PRINTING	6420 AMSTERDAM WAY	WILMINGTON	NEW HANOVER	43.48	known/suspected	
NCD003149556	CTS OF ASHEVILLE, INC.	MILLS GAP RD	SKYLAND	BUNCOMBE	43.44	surface water	organics
						surface water	metals
						soil	organics
						soil	metals
NONCD0001045	FREIGHTLINER	1800 N MAIN ST	MT HOLLY	GASTON	43.38	groundwater	metals
						soil	metals
NCD053487765	STRATFORD METAL FINISHINGS, INC.	807 S MARSHALL ST	WINSTON-SALEM	FORSYTH	43.38	soil	metals
NONCD0000043	GREAT LAKES CARBON CORPORATION	307 JAMESTOWN ROAD	MORGANTON	BURKE	43.36	groundwater	metals
						groundwater	organics
NONCD0001273	ANSELL HEALTHCARE	2906 ANACONDA ROAD	TARBORO	EDGECOMBE	43.34	soil	organics
						groundwater	organics
NCD062571658	HONEYWELL MICRO SWITCH DIV.	1 HICKORY DRIVE	MARS HILL	MADISON	43.33	soil	organics
						soil	metals
NCD082363102	HELENA CHEMICAL COMPANY	HARRY MALLEY RD	LAURINBURG	SCOTLAND	43.32	soil	metals
						groundwater	pesticides
NONCD0001046	B&H RECYCLERS	7526 US 74 W	POLKTON	ANSON	43.31	soil	organics
						groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD060306727	RICHARDS WC COMPANY, INC.	101 EAST MAPLE STREET	ABERDEEN	MOORE	43.31	soil	metals
						soil	organics
NONCD0002531	STANLEY FASTENING	2903 LEE AVE	SANFORD	LEE	43.31	groundwater	organics
NCD986211274	STONEY FORK CREEK DRUM DUMP SITE	MT. ZION ROAD	DEEP GAP	WILKES	43.31	known/suspected	
NONCD0001168	RIVER CITY CONSTRUCTION CO	3534 CHERRY RUN RD	WASHINGTON	BEAUFORT	43.30	groundwater	metals
						groundwater	organics
						soil	organics
						soil	metals
NCD986232676	ROCK-TENN MARION FOLDING	33 BURGIN ST	MARION	MCDOWELL	43.30	groundwater	metals
NONCD0001491	COUSINS PERSONAL MINI-STORAGE	723 HWY 117 N BYPASS	GOLDSBORO	WAYNE	43.19	groundwater	metals
						soil	metals
NONCD0001564	CRIBBS HOBBY	6225 CAROLINA BEACH RD.	WILMINGTON	NEW HANOVER	43.19	groundwater	organics
NONCD0001138	DEUTSCH RELAYS	2021 GARDNER DR	WILIMINGTON	NEW HANOVER	43.19	groundwater	organics
NONCD0001095	MOSES CONE MEMORIAL PARK	BLUE RIDGE PKWY	BLOWING ROCK	WATAUGA	43.19	soil	metals
NCD981022072	BETTIS PROPERTY	1/2 MI. E OF BETTIS RD &	EARL	CLEVELAND	43.16	known/suspected	
NCSFN0406953	G&B/FARMER PROPERTY	DOUG HILL FARM RD (SR 1100)	SCOTLAND NECK	HALIFAX	43.04	soil	metals
						soil	organics
NONCD0000027	MEADOWVIEW ROAD	MEADOWVIEW ROAD	GREENSBORO	GUILFORD	43.04	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD986172617	FORBES ROAD WELLS/RAUCH IND	2408 FORBES ROAD	GASTONIA	GASTON	43.02		
						groundwater	organics
						surface water	organics
						soil	organics
NONCD0001102	ENQUIRER JOURNAL	500 W JEFFERSON ST	MONROE	UNION	42.99		
						groundwater	organics
NONCD0001346	BETTER LOOK GARMENT CARE	622 SE GREENVILLE BLVD	GREENVILLE	PITT	42.94		
						groundwater	organics
						soil	organics
NONCD0001677	ELECTRIC MOTOR SERVICE	US HYW 13 SOUTH	AHOSKIE	HERTFORD	42.94		
						groundwater	organics
NONCD0002553	STONEVILLE FURNITURE COMPANY	525 SOUTH HENRY STREET	STONEVILLE	ROCKINGHAM	42.93		
						groundwater	organics
						soil	organics
NONCD0002798	TOWN AND COUNTRY CLEANERS	617 WASHINGTON ST	WILLIAMSTON	MARTIN	42.91		
						soil	organics
						groundwater	organics
NCD003230836	DUKE REFINING CORPORATION	2020 JARRELL STREET	HIGH POINT	GUILFORD	42.87		
						soil	organics
						sediment	organics
						groundwater	organics
NONCD0002542	STEVENS CLEANERS	IONA AND MAIN STREET	FAIRMONT	ROBESON	42.87		
NONCD0001113	SOUTHERN STATES (FORMER)	125 LINE AVE	GREENVILLE	PITT	42.81		
						groundwater	pesticides
						soil	organics
NONCD0000025	RANGE ROAD BURN SITE	RANGE ROAD	BUTNER	GRANVILLE	42.80		
						soil	metals
						soil	organics
NONCD0001090	OLD MILL BLDG	301 FOURTH AVE EAST	HENDERSONVILLE	HENDERSON	42.75		
						groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCN000407197	LEARY BROTHERS STORAGE (FORMER)	VIRGINIA & BROAD STREET	EDENTON	CHOWAN	42.74	groundwater	organics
						groundwater	metals
						soil	organics
						soil	metals
NONCD0001016	ROYSTER-CLARK FERTILIZER PLANT	1598 HINES RD	OAK CITY	MARTIN	42.74	soil	organics
						groundwater	inorganics
						groundwater	pesticides
NCD000615872	AMP INCORPORATED	1260 SHANNON-BRADLEY RD	GASTONIA	GASTON	42.72	soil	metals
						groundwater	metals
						soil	organics
NCD981014517	DYNATECH	TOOMEY AVE	CHARLOTTE	MECKLENBURG	42.60	groundwater	metals
						sediment	metals
NONCD0001105	WETSIG YACHTS	4022 MARKET STREET	WILMINGTON	NEW HANOVER	42.60	groundwater	metals
						soil	metals
NCD130708126	CONSOLIDATED WAREHOUSE	8300 MOORES CHAPEL RD	CHARLOTTE	MECKLENBURG	42.58	soil	organics
						surface water	organics
						groundwater	organics
NCD003198967	GENERAL ELECTRIC CO/CAROLINA	900 N GEORGE ST	GOLDSBORO	WAYNE	42.53	groundwater	metals
NCD051853547	AUSTIN FOODS	500 BLOCK E CHATHAM ST	CARY	WAKE	42.43	groundwater	organics
						soil	pesticides
						soil	organics
						groundwater	pesticides
NONCD0001330	BECKER BUILDERS SUPPLY COMPANY	4614 MARKET STREET	WILMINGTON	NEW HANOVER	42.43	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NONCD0001193	COASTAL DRY CLEANERS	1170 HENDERSON DR	JACKSONVILLE	ONSLOW	42.43		
						soil	organics
						groundwater	organics
NONCD0001430	DELL MOORE PROPERTY	5815 HILLSBOROUGH ST	RALEIGH	WAKE	42.43		
						soil	organics
						groundwater	organics
NCN000409865	FORSHAW CHEMICALS	650 STATE ST	CHARLOTTE	MECKLENBURG	42.43		
						surface water	pesticides
						soil	pesticides
						surface water	metals
						soil	metals
						surface water	organics
						soil	organics
NONCD0001117	HILLSIDE SHOPPING CENTER	1077 FAYETTEVILLE ST	ASHEBORO	RANDOLPH	42.43		
						groundwater	organics
NONCD0001475	USGS LORAN STATION CAROLINA	9001 RIVER RD	WILMINGTON	NEW HANOVER	42.32		
						known/suspected	
NCSFN0407140	CARDINAL CONTAINER SERVICES	138 WALSER ROAD	LEXINGTON	DAVIDSON	42.30		
						groundwater	organics
						groundwater	metals
NCN000409854	ROMATIC MANUFACTURING	402 E ROSE ST	SANFORD	LEE	42.27		
						sediment	metals
						sediment	organics
NONCD0002124	WELDON MILL (FRMR)	E 11TH ST & SYCAMORE ST	WELDON	HALIFAX	42.15		
						known/suspected	
NC0002374445	GASTONIA INDUSTRIAL TRUCK	HEMPHILL ROAD	GASTONIA	GASTON	42.08		
						groundwater	organics
NCD043711977	CHEMICAL LEAMAN TANK LINES, INC.	6600 WEST MARKET STREET	GREENSBORO	GUILFORD	42.05		
						groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NONCD0001072	J & C DYEING	1000 WEST GROVER STREET	SHELBY	CLEVELAND	41.98	groundwater	organics
						groundwater	metals
						soil	metals
NCD002571438	ABC ENGRAVERS	724 NORTH I-85	CHARLOTTE	MECKLENBURG	41.91	soil	metals
						groundwater	organics
						groundwater	metals
NONCD0002880	PATCHES BODY SHOP	1903 E GREEN ST	HIGH POINT	GUILFORD	41.91	groundwater	organics
NCD981932023	TARBORO-EDGECOMBE AIRPORT	HWY 44	TARBORO	EDGECOMBE	41.81	soil	organics
NCN000407243	WOODY'S SALVAGE YARD	4139 CLINTON RD	VANDER	CUMBERLAND	41.80	known/suspected	
NCD003155587	SCOTT AVIATION OF MONROE/TOOL SERV	309 W. CROWELL ST	MONROE	UNION	41.73	soil	metals
						groundwater	organics
NCD981031578	RAINBOW DRIVE BATTERY	SR 1646	KANNAPOLIS	CABARRUS	41.66	soil	metals
NONCD0001248	UNITED SALVAGE	BUTTERCUP LANE	ROANOKE RAPIDS	HALIFAX	41.62	soil	metals
NCD981030893	MUSIC CLUB PESTICIDE SITE	SE QUADRANT OF INT US 17	WILLIAMSTON	MARTIN	41.61	soil	pesticides
NCD991278730	SQUIBB E R & SONS	FLOWERS RD	KENLY	JOHNSTON	41.61	groundwater	organics
NCD000830620	CAROLINA P&L CO. WEATHERSPOON	74 EAST	LUMBERTON	ROBESON	41.55	known/suspected	
NONCD0002790	RIVERS JUNKYARD	5501 DOGWOOD ST	WINNABOW	BRUNSWICK	41.52	known/suspected	
NONCD0000073	H. M. WADE FURNITURE	SOUTH GRAHAM STREET	CHARLOTTE	MECKLENBURG	41.50	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NONCD0001125	RALEIGH TTA-DILLON PARCEL A	102 S WEST ST	RALEIGH	WAKE	41.50	
					soil	inorganics
					soil	metals
					soil	organics
					groundwater	organics
NONCD0001126	RALEIGH TTA-DILLON PARCEL B	S WEST ST	RALEIGH	WAKE	41.50	
					groundwater	organics
					soil	organics
NCD982124646	GREGSON FUNITURE INDUSTRIES	206 E FRAIZER AVENUE	LIBERTY	RANDOLPH	41.48	
					surface water	metals
					soil	metals
					soil	organics
					groundwater	metals
NCD003195161	CORNING GLASS WORKS	3900 ELECTRONICS DRIVE	RALEIGH	WAKE	41.47	
					known/suspected	
NC0002178580	VC CHEMICAL-ALMONT WORKS	2400 US 421 NORTH	WILMINGTON	NEW HANOVER	41.47	
					soil	metals
NCD980557854	FMC/NIAGARA PESTICIDES	OLD ST HWY 11 NORTH	AYDEN	PITT	41.44	
					soil	pesticides
					soil	organics
NONCD0001127	RALEIGH TTA-DILLON PARCEL C	510 & 602 W MARTIN ST	RALEIGH	WAKE	41.40	
					soil	organics
					groundwater	organics
NCD055165609	PANTASOTE INC. FILM/COMPOUND DIV.	1508 S CENTER ST	HICKORY	CATAWBA	41.38	
					groundwater	metals
					groundwater	organics
					soil	metals
NONCD0001176	MURFREESBORO VENEER	307 N 2ND ST	MURFREESBORO	HERTFORD	41.37	
					groundwater	organics
NONCD0001347	ZAR PROPERTY	2371 LENNOXVILLE RD	BEAUFORT	CARTERET	41.24	
					soil	metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD991278755	MARTIN'S BATTERY SALVAGE, INC.	ASHLAND RD	KANNAPOLIS	CABARRUS	41.22	
					soil	metals
NONCD0000047	MEADS AIRFIELD PESTICIDES	SR 1100	WEEKSVILLE	PASQUOTANK	41.22	
					soil	pesticides
NCD986171445	BENFIELD CHEMICALS	OLD CANTON CLYDE HWY	CANTON	HAYWOOD	41.20	
					soil	pesticides
					soil	organics
					soil	metals
NONCD0001099	C & L SURPLUS	1868 HWY 64 W	HAYESVILLE	CLAY	41.20	
					sediment	metals
NCD980848782	MADISON COUNTY CYANIDE SITE	RT 2/HWY 63		MADISON	41.20	
					known/suspected	
NCD062664883	REINCO CHEMICAL COMPANY	EAST 11 ST	ROANOKE RAPIDS	HALIFAX	41.20	
					soil	organics
					groundwater	organics
NCD024817827	HENREDON FURNITURE	ALTAPASS ROAD	SPRUCE PINE	MITCHELL	41.19	
					soil	metals
					soil	organics
NONCD0002284	PENDER PLATING COMPANY	107 EAST HAYES ST.	BURGAW	PENDER	41.19	
					soil	metals
NONCD0001209	APAC-NEW BERN ASPHALT PLANT	510 S GLENBURNIE RD	NEW BERN	CRAVEN	41.11	
					groundwater	organics
					soil	organics
NONCD0002319	POLYLOK, INC./WELLINGTON SEARS	3006 ANACONDA RD.	TARBORO	EDGECOMBE	41.09	
					soil	organics
					groundwater	organics
NONCD0001295	HOLT STREET DUMP	HOLT ST	MEBANE	ALAMANCE	41.08	
					groundwater	metals
					soil	organics
					groundwater	organics
					soil	metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD001704980	WILMINGTON BRANCH/BORDEN/SMITH	NAVASSA ROAD	NAVASSA	BRUNSWICK	40.81	soil	organics
						groundwater	organics
NONCD0001107	CONE MILLS - FLORENCE PLANT	FLORENCE & DEPOT RDS	FOREST CITY	RUTHERFORD	40.75	groundwater	organics
						soil	organics
NONCD0001077	CATAWISSA LUMBER CO	301 LOCUST ST	WEST JEFFERSON	ASHE	40.72	groundwater	organics
NONCD0002815	CAROLINA CHEMICAL CORP (FORMER)	6600 WARD BLVD	WILSON	WILSON	40.71	groundwater	pesticides/herbicides
						groundwater	organics
						soil	metals
						soil	pesticides/herbicides
NCD075570820	PLYMOUTH WOOD TREATING COMPANY	N HWY 45	PLYMOUTH	WASHINGTON	40.68	groundwater	metals
NCD982119463	DAYCO LANDFILL CRYME COVE ROAD	SR 1134	WAYNESVILLE	HAYWOOD	40.52	soil	organics
NCD981927908	KIDD LANE BATTERY DISPOSAL	3607 KIDD LANE	CHARLOTTE	MECKLENBURG	40.49	soil	metals
NCD003235066	NEW AGE FURNITURE CO/MILLER TOOL	PROSPECT STREET	LEXINGTON	DAVIDSON	40.42	known/suspected	
NCD082362989	TUNGSTEN QUEEN MINE/ATLAS MINE	SR 1348	TOWNSVILLE	VANCE	40.34	soil	metals
NONCD0001297	CRADY COURT SITE	7769 CRADY CT	STANTONSBURG	WILSON	40.20	groundwater	metals
						groundwater	organics
NONCD0000031	INDEPENDENCE MALL OUTPARCEL	OLEANDER & FORDHAM RDS	WILMINGTON	NEW HANOVER	40.19	groundwater	organics
NONCD0002378	REA CONSTRUCTION-ROCKY MOUNT	SR 1401	ROCKY MOUNT	EDGECOMBE	40.19	groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD980838379	ROWE CORP PROPERTY/BOULIGNY SITE	433 W MOREHEAD ST	CHARLOTTE	MECKLENBURG	40.18	groundwater metals soil metals
NCD986172492	CRESTLINE CONTAMINATED WELLS	ROUTE 211	ABERDEEN	MOORE	40.12	groundwater metals groundwater organics
NONCD0001124	RALEIGH TTA-WILSON PARCEL	200 S WEST ST	RALEIGH	WAKE	40.07	groundwater organics
NCD003158094	GLEN RAVEN MILLS	EAST MAIN STREET	BURNSVILLE	YANCEY	40.02	soil metals
NCD986166379	PILOT MOUNTAIN TIRE FIRE	DAVENPORT ROAD	PILOT MOUNTAIN	SURRY	39.94	known/suspected
NCSFN0406911	CAROLINA ASSOCIATED MILL	766 HWY 10 W	NEWTON	CATAWBA	39.88	soil metals
NCN000407700	SPRINGS ROAD GO CART TRACK	4254 SPRINGS RD	CONOVER	CATAWBA	39.86	sediment organics surface water organics
NONCD0000012	WHITE'S GRAVEL PIT	1515 HWY 49 SOUTH	CONCORD	CABARRUS	39.83	soil metals
NCD986223170	MCBESS INDUSTRIES	OLD HWY 321	HIGH SHOALS	GASTON	39.75	soil organics sediment metals
NONCD0001188	SHELBY BODY SHOP	1904 E DIXON BLVD	SHELBY	CLEVELAND	39.74	groundwater organics
NCD980839757	INDIAN GRAVE GAP DRUM DISPOSAL	APPROX 2 MLS N OF SR 1513	LENOIR	CALDWELL	39.69	surface water metals
NCD986172500	MCLEAN BROTHERS FARM	SR 1415	WAGRAM	SCOTLAND	39.67	soil organics soil pesticides
NCD048958615	KELLY-SPRINGFIELD TIRE CO/GOODYEAR	NAVASSA RD	FAYETTEVILLE	CUMBERLAND	39.64	soil organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NONCD0000011	TERRELL MACHINE SHOP	3000-3030 SOUTH BLVD	CHARLOTTE	MECKLENBURG	39.62		
						groundwater	organics
						soil	organics
NONCD0001483	POPE PROPERTY	800 S WILSON AVE	DUNN	HARNETT	39.58		
						groundwater	inorganics
						groundwater	organics
NONCD0001041	MITCHELL & BECKER	1928 SOUTH BOULEVARD	CHARLOTTE	MECKLENBURG	39.56		
						groundwater	metals
						soil	metals
						groundwater	organics
NC0001402213	ELLIS JUNK YARD	NEEDMORE DRIVE	HAYESVILLE	CLAY	39.52		
						soil	metals
						soil	organics
NONCD0001697	EXXON CORPORATION	3340 RIVER ROAD	WILMINGTON	NEW HANOVER	39.43		
						groundwater	organics
NCD024766719	WRIGHT CHEMICAL CORP.	333 NEILS EDDY RD	RIEGELWOOD	COLUMBUS	39.37		
						soil	organics
						groundwater	metals
						groundwater	organics
						soil	metals
NCD079066833	LENOIR REFINING COMPANY	263 PENNTON AVE NW	LENOIR	CALDWELL	39.26		
						soil	organics
NCD003216397	HIGHLAND INDUSTRIES/BURLINGTON	215 DRUMMOND ST/SR 2089	KERNERSVILLE	FORSYTH	39.25		
						groundwater	organics
						soil	organics
NCD003154960	FLEMING LABORATORIES	2205 THRIFT ROAD	CHARLOTTE	MECKLENBURG	39.24		
						groundwater	organics
						soil	organics
NCD981863277	PERRY BUILDERS - RALEIGH RD	2846 RALEIGH RD	HENDERSON	VANCE	39.05		
						surface water	metals

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD033978396	ATEC INDUSTRIES	PERKINS DRIVE	ROXBORO	PERSON	38.92	
					soil	metals
					groundwater	organics
					groundwater	metals
					soil	organics
NCD982115040	PERRY BUILDERS - MOBILE TRACT	NICHOLAS ST & SKENES AVE	HENDERSON	VANCE	38.91	
					surface water	metals
NCD986215499	PARKER INDUSTRIES	4867 RHONEY ROAD	CONNELLY	BURKE	38.88	
					groundwater	organics
NCN000407686	CARALEIGH PHOSPHATE AND	1601 LAKE WHEELER ROAD	RALEIGH	WAKE	38.87	
					soil	metals
NCD089914311	MILLER BREWING CO/CONT DIV	1900 BARNES ST	REIDSVILLE	ROCKINGHAM	38.85	
					groundwater	pesticides
					soil	pesticides
NCD075582197	AMORE/WORTH CHEMICAL	2418 EAST PETTIGREW ST	DURHAM	DURHAM	38.82	
					soil	organics
					groundwater	organics
NONCD0000001	STANLY NEWS & PRESS	237 W NORTH STREET	ALBEMARLE	STANLY	38.78	
					soil	metals
NONCD0001110	WOODSON-TENET LABORATORIES	17570 HWY 902	GOLDSTON	CHATHAM	38.76	
					surface water	metals
					soil	metals
					sediment	metals
NONCD0002786	METAL RECYCLING SERVICES	5192 JAMES B WHITE HWY	WHITEVILLE	COLUMBUS	38.75	
					surface water	metals
					groundwater	organics
NCD000827832	ELECTRICAL UTILITIES/CO BB&T	309 ANDERSON AVE	FARMVILLE	PITT	38.70	
					groundwater	organics
NONCD0001122	CABARRUS ROUNDABOUT	CABARRUS AVE & OLD	CONCORD	CABARRUS	38.69	
					soil	metals
					groundwater	metals

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD003520301	OVERCASH MACHINE SHOP, INC.	865 CONNOR STREET	STATESVILLE	IREDELL	38.69	known/suspected	
NONCD0000083	CHEESMAN PROPERTY	3251 GREGORY ROAD	ROCKWELL	CABARRUS	38.68	known/suspected	
NCD105797922	TECHNIBILT/DIV OF WHITTAKER	EAST PEACE ST	NEWTON	CATAWBA	38.61	soil	metals
						soil	organics
NONCD0001018	HWY 49 BATTERY DUMP	NC HIGHWAY 49	CHARLOTTE	MECKLENBURG	38.47	groundwater	metals
						soil	metals
NONCD0000015	CENTRAL TRANSPORT COMPANY	215 SAMPSON ST	WILMINGTON	NEW HANOVER	38.45	surface water	metals
NONCD0000044	CHEMICAL AND SOLVENTS, INC.	2804 PATTERSON STREET	GREENSBORO	GUILFORD	38.45	soil	organics
NCD986190239	CHEROKEE OIL	925 SOUTH SUMMIT AVE	CHARLOTTE	MECKLENBURG	38.45	soil	metals
NCD081428104	SUN CHEM CORPORATION/GPI DIV	2400 0LD LEXINGTON ROAD	WINSTON-SALEM	FORSYTH	38.41	soil	organics
						soil	metals
NCD052553641	WEYERHAEUSER CO/LEWISTON	HWY 308 W	LEWISTON	BERTIE	38.38	soil	metals
NONCD0001121	R & R PLATING	OLD WILMINGTON RD	WHITEVILLE	COLUMBUS	38.37	soil	metals
NONCD0002816	RADCLIFFE MARINE (PRIVATEER BOATS)	HWY 264 BYPASS N	BELHAVEN	BEAUFORT	38.20	groundwater	organics
NONCD0001148	UNION CARBIDE	HWY 42	CLAYTON	JOHNSTON	38.19	soil	organics
NCD001871854	FRUEHAUF TRAILER CORPORATION	310 DALTON	CHARLOTTE	MECKLENBURG	38.12	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NONCD0000055	GLISSON ENTERPRISES	HWY 903	GREENVILLE	PITT	38.12	known/suspected	
NONCD0001080	SOUTH EUGENE CLEANERS	611 S EUGENE ST	GREENSBORO	GUILFORD	38.05	groundwater	organics
						soil	organics
NONCD0001076	SOUTHSIDE INVESTMENTS LLC	2222 SOUTH BLVD	CHARLOTTE	MECKLENBURG	38.05	soil	organics
						groundwater	organics
						groundwater	metals
						soil	metals
NONCD0000003	VAN WATERS & ROGERS	ATANDO INDUSTRIAL PARK	CHARLOTTE	MECKLENBURG	38.05	soil	organics
						groundwater	organics
NONCD0000030	COLLINS AND AIKMAN	327 EAST ELM ST.	GRAHAM	ALAMANCE	38.04	groundwater	organics
NONCD0000066	WAKE AUTO PARTS (FORMER)	3520 TRYON RD	RALEIGH	WAKE	38.03	soil	metals
NCD980503148	SOUTHCHEM LANDFILL	750 EAST MARKHAM AVE	DURHAM	DURHAM	37.98	surface water	organics
						sediment	pesticides
						surface water	pesticides
						soil	pesticides
NONCD0001064	GUILFORD MILLS PLANT	200 DICKENS ROAD	FUQUAY-VARINA	WAKE	37.89	groundwater	organics
NCD980559983	PPG IND., INC./WKS 52	WASHBURN SWITCH ROAD	SHELBY	CLEVELAND	37.89	known/suspected	
NONCD0002301	PIEDMONT CIRCUITS	TELECOMM DR.	CREEDMOOR	GRANVILLE	37.84	groundwater	organics
NCD003148889	CHAMPION INTERNATIONAL/CANTON	NEWFOUND STREET	CANTON	HAYWOOD	37.79	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD042423087	APOLLO CHEMICAL CORPORATION	1105 SOUTHERLAND STREET	GRAHAM	ALAMANCE	37.72	soil	organics
						groundwater	organics
NCD053010724	ICI - AMERICAS, INC.	2130 N TRYON	CHARLOTTE	MECKLENBURG	37.67	known/suspected	
NCN000409780	INDUSTRIAL METAL ALLOY	20 E ACADIA AVE	WINSTON-SALEM	FORSYTH	37.67	soil	metals
						sediment	metals
NONCD0000074	TEXTILE CHEMICAL FACILITY	GRAHAM STREET	CHARLOTTE	MECKLENBURG	37.60	groundwater	organics
NONCD0002855	PATTERSON PROPERTY	900 JEFFERSON ST	ROANOKE RAPIDS	HALIFAX	37.59	soil	metals
						soil	organics
						groundwater	metals
						groundwater	organics
NC0001606250	CRISTEX DRUM	INDUSTRIAL DR & PINE TREE RD	OXFORD	GRANVILLE	37.58	groundwater	organics
NCN000407564	WATHA FIRING RANGE	3311 SHILOH RD	WATHA	PENDER	37.54	groundwater	metals
NONCD0000024	GAITHER TRANSOU PROPERTY	1202 GUILFORD COLLEGE RD	GREENSBORO	GUILFORD	37.52	soil	organics
						soil	metals
NCD981928021	HOLLINGSWORTH PROPERTY	BROADFOOT AVE & CLARK ST	FAYETTEVILLE	CUMBERLAND	37.34	soil	pesticides
NCD986171338	PEELE CO. PESTICIDE DISPOSAL	NC 42 EAST	CLAYTON	JOHNSTON	37.13	soil	metals
						soil	pesticides
NONCD0000057	WATTS, LEVI PROPERTY	103 FAIRBLUFF ROAD	TABOR CITY	COLUMBUS	37.09	known/suspected	
NCD101750305	INDUSTRIAL PLASTICS, INC.	CLOVER & MCONNELL ROAD	GREENSBORO	GUILFORD	36.97	groundwater	metals

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD980503098	PFIZER INC/SKATE STADIUM	4500 BLOCK OF HIGH POINT	GREENSBORO	GUILFORD	36.93	known/suspected	
NCD986166759	WILSON SEPTIC PITS	SR 1131	HICKORY	CATAWBA	36.90	soil	organics
						soil	metals
NCN000409783	WHITIN ROBERTS PLANT #2	202 MAPLE AVE	SANFORD	LEE	36.89	soil	organics
NCD067428821	SIEMENS-ALLIS, INC/SWITCHGEAR DIV	5000 WOMACK ROAD	SANFORD	LEE	36.86	sediment	organics
						groundwater	metals
NCD981022288	C&T REFINERY	4800 SOUTH BOULEVARD	CHARLOTTE	MECKLENBURG	36.80	soil	organics
NCD081332900	INX (FORMER) FACILITY	3200 & 3210 CULLMAN AVE	CHARLOTTE	MECKLENBURG	36.75	soil	metals
						soil	organics
NCD982095093	JAY'S CLEANERS	1803 N MAIN ST	KANNAPOLIS	ROWAN	36.75	soil	organics
NCD003196847	NATIONAL SPINNING COMPANY	WEST 3RD STREET	WASHINGTON	BEAUFORT	36.61	groundwater	organics
NONCD0001207	APAC-WASHINGTON ASPHALT PLANT	DIRT RD	WASHINGTON	BEAUFORT	36.59	groundwater	organics
NCD044447639	CROWN CENTRAL PETROLEUM CORP.	7720 MOUNT HOLLY ROAD	PAW CREEK	MECKLENBURG	36.59	soil	organics
						groundwater	organics
NCD024577421	NORTH CAROLINA SALVAGE CO.	HWY 117 SOUTH	GOLDSBORO	WAYNE	36.38	soil	metals
NCD986188001	CHAMPION INTERNATIONAL LANDFILL	SR 1571 & 1573	CANTON	HAYWOOD	36.35	soil	organics
NCD000830919	CAROLINA P&L CO. CAPE FEAR STM	SR 1916	MONCURE	CHATHAM	36.33	groundwater	metals

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD980712038	SED, INC. SWING COURT	SWING COURT	GREENSBORO	GUILFORD	36.30	known/suspected	
NONCD0000065	CMI INDUSTRIES	304 EAST MAIN STREET	ELKIN	SURRY	36.25	soil	organics
						groundwater	organics
NCD991279118	MEREDITH/BURDA, INC.	ST JAMES CHURCH RD	NEWTON	CATAWBA	36.12	soil	metals
NONCD0001418	CROSLAND PROPERTY	HIGH HOUSE RD & DAVIS DR	CARY	WAKE	36.11	soil	metals
NONCD0001009	SINGER PLANT #2	VIRGINIA STREET	LENOIR	CALDWELL	36.09	soil	organics
NCD986188019	CHAMPION LANDFILL #2	SR 1539	CANTON	HAYWOOD	36.04	soil	organics
NCD981015886	CAROLINA PRODUCTION FINISHING	105 FAIRVIEW RD	ASHEVILLE	BUNCOMBE	35.86	groundwater	organics
NCD981021702	CAMP, LEONARD PROPERTY	SR 2226	EARL	CLEVELAND	35.79	sediment	organics
NONCD0001130	SOUTH MAIN ST SEWER LINE EXT	4660 FOLLANSBEE RD	WINSTON-SALEM	FORSYTH	35.47	soil	metals
NONCD0002561	SUNOCO BULK TERMINAL	RIVER ROAD	WILMINGTON	NEW HANOVER	35.41	groundwater	organics
						soil	organics
NCD070619911	TELEDYNE ALLVAC MONROE PLANT	2020 ASHCRAFT AVE	MONROE	UNION	35.37	soil	metals
NONCD0001598	DEHAVEN	413 AIRPORT BLVD.	MORRISVILLE	WAKE	35.29	groundwater	organics
NONCD0002728	WILLIAMS, E. W. FACILITY	8200 FAYETTEVILLE ROAD	RALEIGH	WAKE	35.29	groundwater	organics
						soil	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD067437400	GULF OIL CORPORATION	SR 2813	MCLEANSVILLE	GUILFORD	35.22	surface water	metals
NCD003216413	RALEIGH ROAD FURNITURE	802 WEST CENTER ROAD	LEXINGTON	DAVIDSON	35.22	known/suspected	
NONCD0001115	HAHN DAIRY FARM	LONG RUN FARM RD	MOUNT PLEASANT	CABARRUS	35.20	soil	metals
						soil	organics
NONCD0000088	TRANS TECHNOLOGY	5535 WILKINSON BLVD	CHARLOTTE	MECKLENBURG	35.19	soil	organics
						groundwater	organics
NCD044515211	HAYES-ALBION CORP/BRIGGS-SHAFFNER	3760 KIMWELL DR	WINSTON-SALEM	FORSYTH	35.17	soil	metals
NONCD0002836	RABO CLEANERS	701 HOOKER RD	GREEENVILLE	PITT	35.17	known/suspected	
NCD072028251	TORPEDO WIRE & STRIP, INC.	INSTRUMENT DR	ROCKY MOUNT	NASH	35.10	soil	metals
NCD044514602	RJR ARCHER, INC.	CUNNINGHAM AVE	WINSTON-SALEM	FORSYTH	35.04	known/suspected	
NCD108702606	HARTSOE BATTERY	2513 LINA AVE	KANNAPOLIS	ROWAN	35.01	soil	metals
NCD003183480	UNION CAMP CORPORATION	524 BROGDEN RD	SMITHFIELD	JOHNSTON	35.01	known/suspected	
NCD024459471	GUYTON BATTERY SERVICE	HWY 401 S	CHADBOURN	COLUMBUS	34.92	soil	metals
NCN000407205	TRI-COUNTY AIRPORT	NC 561	AULANDER	HERTFORD	34.92	soil	pesticides
NCD061795696	UNITEX CHEMICALS	520 BROOME RD	GREENSBORO	GUILFORD	34.91	groundwater	organics
NCD981023732	NEUVILLE SOCK PROPERTY	US 64/70 I-40 ACCESS ROAD	HILDEBRAN	BURKE	34.80	soil	metals

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD986227965	STOLLER CHEMICAL - SEVERN	HIGHWAY 35	SEVERN	NORTHAMPTON	34.73	soil	pesticides
						soil	organics
NONCD0000028	CAROLINA P&L CO. SPRUCE PINE	MOUNTAIN LAUREL DR	SPRUCE PINE	MITCHELL	34.62	known/suspected	
NONCD0001038	BRYANT FARM DRUM DUMP	W OF NC 86 400 FT S OF VA LINE	GATEWOOD	CASWELL	34.61	known/suspected	
NCD000616219	GA-PACIFIC CORP	HWY 177 S	HAMLET	RICHMOND	34.61	known/suspected	
NONCD0001048	LEXINGTON FURNITURE IND. PLNT #2	3979 OLD LINWOOD ROAD	LEXINGTON	DAVIDSON	34.53	soil	organics
						groundwater	organics
NONCD0002156	NCDOT ASPHALT MATERIAL TEST LAB	6190 NEW BERN HWY	MAYSVILLE	ONSLOW	34.50	soil	organics
						groundwater	organics
NCD980557672	PITT COUNTY UTILITY LANDFILL	PORT TERMINAL RD	GREENVILLE	PITT	34.38	known/suspected	
NC0001206473	GLEN RAVEN MILLS	TUCKER STREET C	BURLINGTON	ALAMANCE	34.27	groundwater	organics
NCD083673681	SINGER CO/KEARFOTT DIV	HIGHWAY 70	BLACK MOUNTAIN	BUNCOMBE	34.24		
NCD990867855	FAWN PLASTICS CO., INC.	317 JEFFREYS ROAD	ROCKY MOUNT	NASH	34.23	known/suspected	
NCD040042426	AEROQUIP/FAWN PLASTICS	HIGHWAY 264 ALT.	MIDDLESEX	NASH	34.22	groundwater	organics
NCD093132207	VOICE OF AMERICA RELAY STATION	COUNTY ROAD 1212	GREENVILLE	PITT	34.21	known/suspected	
NCD098765506	SINGER CO/FURNITURE DIV BRYSON	BRYSON WALK	BRYSON CITY	SWAIN	34.16	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NONCD0001109	FRIENDLY CLEANERS	605 S. PENDER ST	WILSON	WILSON	34.14	soil	organics
NCD083673616	REEVES BROTHERS	RAILROAD AVE	RUTHERFORDTON	RUTHERFORD	34.10	soil	organics
NONCD0000042	SOUTHMET, INC.	NORTH GREENE STREET	GREENVILLE	PITT	34.04	known/suspected	
NCD000006361	SUPERIOR ELECTRO FINISHES	115 EAST POLO ROAD	WINSTON SALEM	FORSYTH	34.04	soil	metals
NONCD0002413	ROCKY POINT TRADING POST TCE	8160 US HWY 117S, ROCKY POINT	BURGAW	PENDER	33.99	groundwater	organics
NONCD0001151	MATTHEWS BLDG SUPPLY/ESTUL TOOL	215 AMES ST	MATTHEWS	MECKLENBURG	33.98	soil groundwater	organics organics
NCD986209575	CARDINAL CHEMICAL WAREHOUSE FIRE	NC 211 & NC 72	LUMBERTON	ROBESON	33.96	soil	pesticides
NONCD0001114	CONOVER METAL PRODUCTS	315 S MCLIN CREEK RD	CONOVER	CATAWBA	33.96	soil	metals
NONCD0001991	LEESONA - ALAMANCE CO PLANT -	2727 TUCKER ST. EXT	BURLINGTON	ALAMANCE	33.78	groundwater	organics
NONCD0000078	CAROLINA METAL AND ALLOYS	1016 E. SPRINGFIELD AVENUE	HIGH POINT	GUILFORD	33.72	soil	metals
NCD097361018	KIN PROPERTIES ABANDONED DRUMS	920 EASTWAY DRIVE	CHARLOTTE	MECKLENBURG	33.72	soil	organics
NCD990715658	SOUTHERN MANUFACTURING, INC.	1000 SEABOARD ST	CHARLOTTE	MECKLENBURG	33.72	soil	inorganics
NONCD0001150	CHARLOTTE BATTERY	2926 YOUNGBLOOD ST	CHARLOTTE	MECKLENBURG	33.67	known/suspected	
NCD003196193	PIFER INDUSTRIES, INC.	2210 E PETTIGREW ST	DURHAM	DURHAM	33.67	known/suspected	

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Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD003162500	CONSOLIDATED ENGRAVERS CORP.	311 E 12TH ST	CHARLOTTE	MECKLENBURG	33.51	sediment	metals
						soil	organics
						surface water	metals
						groundwater	organics
						surface water	organics
						soil	metals
						sediment	organics
						groundwater	metals
NCD065295495	TEXFI IMPRESSIONS	PALETOWN RD	GOLDSBORO	WAYNE	33.41	soil	organics
NONCD0000054	MOORES COMPANY	US 1 BUSINESS & SR 1001	HENDERSON	VANCE	33.35	soil	organics
NCD055550560	GULF ADHESIVES & RESINS/PERKINS	1717 WARD STREET	HIGH POINT	GUILFORD	33.33	soil	organics
						groundwater	organics
NCD000281832	SANFORD PLATING COMPANY	SR 1466	SANFORD	LEE	33.32	soil	metals
						soil	organics
NONCD0000097	MORRIS, NORMAN	HIGHWAY 87 NORTH	ELON COLLEGE	ALAMANCE	33.23	soil	metals
NONCD0001119	EDWARDS PROPERTY FOUNDRY SAND	10209 ROZZELLE'S FERRY RD	CHARLOTTE	MECKLENBURG	33.18	soil	metals
NCD054417308	COASTAL CHEMICAL CORP.	NC 42	CLAYTON	JOHNSTON	33.11	soil	pesticides
NONCD0001208	APAC-PRINCETON ASPHALT PLANT	1288 RAINS MILL RD	PRINCETON	JOHNSTON	33.08	soil	organics
						groundwater	organics
NONCD0000096	MASON DRUM STORAGE	42 FIBERVILLE STREET	CANTON	HAYWOOD	32.99	known/suspected	
NCD981928385	JOHN DEERE TRACTOR	HWY 601 AND SR 1413	MOCKSVILLE	DAVIE	32.95	known/suspected	

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NONCD0001164	COOPERAGE TRACT	NC 99 & US 264	BELHAVEN	BEAUFORT	32.94	groundwater	organics
						groundwater	inorganics
NONCD0001123	RALEIGH TTA-SE PARCEL	S WEST ST & MORGAN ST	RALEIGH	WAKE	32.94	soil	organics
						groundwater	organics
NCD072018252	GENERAL ELECTRIC CO/MED STEAM	OLD RALEIGH RD	DURHAM	DURHAM	32.88	groundwater	organics
NCD093783876	VANIER GRAPHICS CORPORATION	655 MEADOW RD	EDEN	ROCKINGHAM	32.86	soil	organics
						groundwater	organics
NCD980729479	CAROLAWN COMPANY	1426 W MOUNTAIN ST	KERNERSVILLE	FORSYTH	32.81	soil	organics
NONCD0001032	COCA COLA BOTTLING WORKS INC	HIGHWAY 17	NEW BERN	CRAVEN	32.59	groundwater	organics
NCD000623199	TEXACO INC/FAYETTEVILLE	992 SHAW MILL RD	FAYETTEVILLE	CUMBERLAND	32.56	groundwater	organics
NCD002388965	LACKAWANNA LEATHER CO., INC.	HWY 70A WEST	CONOVER	CATAWBA	32.48	groundwater	metals
NCD981472624	US 70 DRUM DUMP	US 70	MORGANTON	BURKE	32.41	soil	organics
NONCD0001036	JOYCETON WATER WORKS WELLS 2 & 9	N OF SWANSON RD	LENOIR	CALDWELL	32.38	groundwater	organics
NCD980502892	CREEK BRIDGE/BORDEN CHEMICAL	US HWY 24-87 (GROVE ST)	FAYETTEVILLE	CUMBERLAND	32.35	known/suspected	
NCD095470332	THONIT A SIMMONS COMPANY	11900 STEELE CREEK ROAD	CHARLOTTE	MECKLENBURG	32.33	soil	metals
						soil	organics
NCD080885551	DAUGHERTY CHEMICAL COMPANY	307 WALKER STREET	DURHAM	DURHAM	32.27	soil	metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD980848766	GIBBS ELECTROPLATING	5210/5216 HOVIS ROAD	CHARLOTTE	MECKLENBURG	32.27	soil metals
NCD980847123	HURT RESIDENCE	HWY 64	MORGANTON	BURKE	32.27	soil organics
NCD982098774	CAL-TONE PAINTS	5115 NEW BERN AVE	RALEIGH	WAKE	31.94	soil organics
NONCD0001006	WESTINGHOUSE TURBINE	WESTINGHOUSE ROAD	CHARLOTTE	MECKLENBURG	31.94	soil organics
NCD991278680	SADOLIN PAINT PRODUCTS, INC.	3950 NEW WALKERTOWN RD	WINSTON-SALEM	FORSYTH	31.92	known/suspected
NCD003221868	CENTURY FURNITURE COMPANY	420 12TH ST NW	HICKORY	CATAWBA	31.90	soil metals
NONCD0000084	THERMO PRODUCTS, INC.	800 JONES STREET	DENTON	DAVIDSON	31.77	soil metals soil organics
NCD980799019	CHEROKEE OIL	1201 BERRYHILL ROAD	CHARLOTTE	MECKLENBURG	31.76	soil organics soil metals surface water metals
NONCD0000059	DAYCO COCHRAN LANDFILL	RT 1 HYATT CREEK ROAD	WAYNESVILLE	HAYWOOD	31.71	soil organics
NCSFN0407143	AMERICAN ELEMENTS	500 WALLACE ST	FARMVILLE	PITT	31.68	soil metals
NCD986180883	CCFC PESTICIDE DISPOSAL	607 HILLSBOROUGH STREET	OXFORD	GRANVILLE	31.67	known/suspected
NCD980557847	KAISER ACME FARMARKET	SR 1870	RIEGELWOOD	COLUMBUS	31.60	soil pesticides groundwater organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NONCD0001177	ALCOA-PINE RD RAVINE DISPOSAL	PINE RD		MONTGOMERY	31.53	
					soil	metals
					soil	inorganics
					soil	organics
					soil	cyanide
NCD980845119	BUCKHORN PESTICIDES	NC 581 & NC 42	WILSON	WILSON	31.36	
					soil	pesticides
					soil	organics
NCD003229762	STRUCTURAL WOODS PRESERVING CO.	HWY 22	COLERIDGE	RANDOLPH	31.34	
					groundwater	metals
					soil	metals
NCSFN0406924	VC CHEMICAL	STANBACK FERRY RD	WADESBORO	ANSON	31.34	
					soil	metals
NCD000828566	TARTAN MARINE PROPERTY	NC HIGHWAY 77 & SR 2032	HAMLET	RICHMOND	31.33	
					soil	metals
NCD981863814	LANCASTER PLATING	802 EDWARDS ROAD	LILLINGTON	HARNETT	31.32	
					soil	metals
NONCD0001015	MARY CIRCLE BATTERY	ZION CHURCH & MARY CRL	CONCORD	CABARRUS	31.18	
					soil	metals
NCD045451473	ACE CHEMICAL CORPORATION	9801 YORK ROAD	CHARLOTTE	MECKLENBURG	31.05	
					groundwater	organics
					soil	organics
NCD049845266	STANLEY CASE GOODS (FORMER)	HWY 211	WEST END	MOORE	31.01	
					groundwater	organics
NONCD0000019	SIR WALTER GUN CLUB	US 64	RALEIGH	WAKE	30.96	
					soil	metals
NONCD0002788	ALLOWAY RESIDENCE	405 PARADISE LANE	SHALLOTTE	BRUNSWICK	30.88	
					groundwater	organics
NONCD0000070	BENFIELD SANITATION SERVICE	1809 W FRONT ST	STATESVILLE	IREDELL	30.87	
					known/suspected	

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD980843460	GRANT CREEK WWTP	CRUSE ROAD	SALISBURY	ROWAN	30.66	soil organics
NCD003195963	WESTINGHOUSE ELEC METER & LIGHT	US 1 N	RALEIGH	WAKE	30.57	soil organics soil metals
NONCD0001060	DIXIE MACHINE & TOOL CO	2204 PATTERSON ST	GREENSBORO	GUILFORD	30.46	soil organics
NCD024740433	EC MANUFACTURING	413 N. POLK STREET	PINEVILLE	MECKLENBURG	30.45	soil metals
NONCD0001033	AMERICAN CONTRACT COATINGS	HWY 55	APEX	WAKE	30.43	known/suspected
NONCD0001067	CC DICKSON	1524 SOUTH BOULEVARD	CHARLOTTE	MECKLENBURG	30.43	soil organics groundwater organics
NCD003938586	CORNING GLASS WORKS	310 NORTH COLLEGE ROAD	WILMINGTON	NEW HANOVER	30.37	known/suspected
NCSFN0406962	VINEGAR HILL LEAD SITE	HWY 701 N	TABOR CITY	COLUMBUS	30.30	soil metals
NC0000998336	CP PROPERTIES	2350 BROWN ROAD	SANFORD	LEE	30.23	sediment metals soil organics soil metals
NONCD0001595	DEANS PICKLES, FMR CATES	354 N. FAISON AVE.	FAISON	DUPLIN	30.23	groundwater inorganics
NCD003186004	INTERNATIONAL PAPER/RICHMOND	2215 S. WILMINGTON STREET	RALEIGH	WAKE	30.10	soil organics groundwater organics
NONCD0001175	MIDTOWN SQUARE VALET DRY	401 S INDEPENDENCE BLVD	CHARLOTTE	MECKLENBURG	30.06	soil organics groundwater organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD024762668	BUSH BROTHERS PLATING INC/GREER	107 NE MARKET ST	REIDSVILLE	ROCKINGHAM	30.05	known/suspected	
NCD981748403	HOME DEPOT-PRO CLEANERS	2310 N MAIN STREET	HIGH POINT	GUILFORD	30.05	groundwater	organics
NONCD0000072	LOWE'S PROPERTY	4891 LONG BEACH RD	SOUTHPORT	BRUNSWICK	30.02	soil	organics
NCN000410518	CHAPEL STREET BATTERY DUMP	CHAPEL STREET	KANNAPOLIS	ROWAN	30.00	known/suspected	
NCD980557722	HARRISBURG BATTERY	HIGHWAY 49	HARRISBURG	CABARRUS	30.00	soil	metals
NCD067392175	TRAMCO, INC.	SR 1611	CONNELLY	BURKE	29.87	soil	organics
NCD991277724	MITCHELL SYSTEMS, INC.	ALTAPASS RD	SPRUCE PINE	MITCHELL	29.82	soil	metals
NCD057248759	PATCH RUBBER POND	GRACE BOULEVARD	ROANOKE RAPIDS	HALIFAX	29.82	soil	organics
NONCD0002781	ADAMS PAINTING SERVICE	722 WELLINGTON AVE	WILMINGTON	NEW HANOVER	29.71	known/suspected	
NCD003213568	LIBERTY FURNITURE CORP/CHROMCRAFT	HWY 421	LIBERTY	RANDOLPH	29.60	soil	organics
NCD986170678	WOOD ROAD DRUM BURIAL	CIRCLE WOOD RD/SR 2641	GASTONIA	GASTON	29.44	known/suspected	
NCD049845548	REICHHOLD CHEMICAL, INC.	SR 1916	MONCURE	CHATHAM	29.33	soil	organics
NONCD0002863	BABY DIAPER SERVICE	1819 SPRING GARDEN ST	GREENSBORO	GUILFORD	29.31	soil groundwater groundwater	organics bases organics
NONCD0002280	PCS NITROGEN, FMRLY ARCADIAN	2830 HWY 421 NORTH	WILMINGTON	NEW HANOVER	29.09	groundwater	inorganics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD003218161	CORNELL-DUBILIER ELECTRONICS	2652 DALYRUMPLE STREET	SANFORD	LEE	29.02	soil	organics
						groundwater	organics
NONCD0001106	MICROTRON ABRASIVES, INC	10242 RODNEY BLVD	PINEVILLE	MECKLENBURG	28.94	soil	organics
						groundwater	organics
NCD991278714	CAROCHEM, INC.	540 GULF ST	DURHAM	DURHAM	28.72	soil	organics
NONCD0001050	LEXINGTON FURNITURE IND. PLNT #12	3301 COTTON GROVE LANE	LEXINGTON	DAVIDSON	28.59	soil	organics
NCD980843528	TOWN CREEK REGIONAL WWTP	HEILIGTOWN ROAD	SALISBURY	ROWAN	28.50	known/suspected	
NCD048184451	BURLINGTON HOME CHAIR	HIGHWAY 268	RONDA	WILKES	28.49	known/suspected	
NCD000828616	USS AGRI-CHEMICALS FARM SERVICE	HWY 701	WHITEVILLE	COLUMBUS	28.45	known/suspected	
NONCD0001805	EXXON PIPELINE	RIVER RD	LELAND	BRUNSWICK	28.37	groundwater	organics
NCD003149291	GASTON COUNTY DYEING MACHINE CO.	HWY 27 EAST	MOUNT HOLLY	GASTON	28.34	groundwater	organics
NCD991277922	GASTON COUNTY DYEING MACHINE CO.	200 S MAIN ST	STANLEY	GASTON	28.34	groundwater	organics
NCD003186178	COASTAL CHEMICAL CORP.	EVANS ST EXT	GREENVILLE	PITT	28.33	soil	pesticides
NONCD0001985	LEBANON CHEMICAL CORPORATION	1665 HIGHWAY 64 EAST	PLYMOUTH	WASHINGTON	28.22	groundwater	inorganics
NCD991278581	BURLINGTON FURNITURE/LUMBER PL	US 64 EAST	LEXINGTON	DAVIDSON	28.12	known/suspected	

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD980483275	HELENA CHEMICAL COMPANY	DENNIS STREET EXTENSION	ENFIELD	HALIFAX	28.04	
					soil	organics
					soil	metals
					soil	pesticides
NONCD0001149	VC CHEMICAL	2700 ANGIER AVE	DURHAM	DURHAM	27.95	
					soil	organics
					soil	metals
NCD003151651	WILLARD SMELTING CO.	101 NEWBERN ST	CHARLOTTE	MECKLENBURG	27.86	
					soil	metals
NCD991278839	NORTH STATE CHEMICALS	6211 HUNT RD	PLEASANT	GUILFORD	27.60	
					groundwater	organics
					soil	metals
					soil	organics
NONCD0001030	BLR	2911 LEE AVENUE	SANFORD	LEE	27.50	
					groundwater	organics
					soil	organics
NONCD0000013	CAROLINA HARDWOODS	158 FACTORY STREET	WILLIAMSTON	MARTIN	27.49	
					surface water	metals
NONCD0001166	CENTRAL GRAIN-MORGANS CORNER	1312 HASSELL RD	ELIZABETH CITY	PASQUOTANK	27.28	
					soil	inorganics
					groundwater	organics
					groundwater	inorganics
					groundwater	metals
					soil	organics
					soil	metals
NCD024770125	BURLINGTON FURNITURE	ATOAH STREET	ROBBINSVILLE	GRAHAM	27.10	
					soil	organics
NONCD0000091	DUKE POWER/WALNUT COVE	POWER HOUSE ROAD	WALNUT COVE	STOKES	26.95	
					known/suspected	
NCD024468597	CHARLOTTE STEEL DRUM	2900 WEST TRADE STREET	CHARLOTTE	MECKLENBURG	26.67	
					known/suspected	

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD991278300	UNITED DRUM T/A RELIANCE UNIV.	214 BERKLEY ST	HIGH POINT	GUILFORD	26.55	groundwater	metals
						groundwater	organics
NCD003213881	BENDIX CORPORATION	I-85 INNES ST EXIT	SALISBURY	ROWAN	26.36	soil	metals
NCD986166288	WOODY'S TIRE FIRE	HIGHWAY 321	GASTONIA	GASTON	26.35	known/suspected	
NONCD0002819	PLANTER'S WAREHOUSE	1003 PIREWAY RD	TABOR CITY	COLUMBUS	26.34	groundwater	inorganics
NCD990868168	INMONT CORP/BASF CORPORATION	1701 W WESTINGHOUSE BLVD	CHARLOTTE	MECKLENBURG	26.22	soil	organics
						groundwater	organics
NCD003218492	CAROLINA RUBBER HOSE COMPANY	1801 SOUTH RAILROAD	SALISBURY	ROWAN	26.04	soil	metals
						soil	organics
NCD003464765	VAUGHAN-BASSETT FURNITURE CO.	ROUTE 268 EAST	ELKIN	SURRY	25.93	soil	organics
NONCD0001039	OVERCASH GRAVEL & GRADING CO. INC.	1150 SHELTON ROAD	CONCORD	CABARRUS	25.71	known/suspected	
NCD980602791	SALVAGE OIL OF AMERICA	1227 MCLEOD STREET	ROCKINGHAN	RICHMOND	25.68	soil	organics
NCD000822130	HARRELSON RUBBER COMPANY	HWY 220 SOUTH	ASHEBORO	RANDOLPH	25.45	known/suspected	
NCD003200656	FEATHER PROCESSORS, INC	HWY 117 NORTH	ROSE HILL	DUPLIN	25.30	soil	metals
NCD003148798	DAYCO CORP	BALSAM RD	WAYNESVILLE	HAYWOOD	25.26	soil	organics
						groundwater	organics
NCSFN0406894	STALLINGS SALVAGE	SECREST AVE	MONROE	UNION	24.89	known/suspected	

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*
NCD067191262	FIRESTONE TIRE AND RUBBER	HWY 301	WILSON	WILSON	24.45	
					soil	organics
NONCD0000048	WALKER DRUM DISPOSAL	WYATTS CHURCH GROVE ROAD	GOLD HILL	ROWAN	23.80	
					soil	metals
					soil	organics
NCD077821296	SOUTHERN RESIN/US INDUSTRIES INC	1510 DENTON ROAD	THOMASVILLE	DAVIDSON	23.62	
					groundwater	organics
NCD077838589	THOMASVILLE FOREST PRODUCTS	CLARKSBURY CHRUCH ROAD	THOMASVILLE	DAVIDSON	23.10	
					soil	metals
NCD980838551	MCDOWELL FIREMAN ASSOCIATION	SR 1214 GREENLEE ROAD	MARION	MCDOWELL	23.09	
					known/suspected	
NCD096158696	BURLINGTON INDUSTRIES, INC.	6008 HIGH POINT RD	GREENSBORO	GUILFORD	22.43	
					groundwater	organics
					soil	organics
					soil	bases
					groundwater	metals
NCD071579528	FORBUSH METAL	SPEER BRIDGE ROAD	YADKINVILLE	YADKIN	21.90	
					soil	cyanide
					soil	organics
					soil	metals
NCS000000478	CROWDERS MOUNTAIN STATE PARK	CROWDERS MOUNTAIN STATE	GASTONIA	GASTON	21.57	
					known/suspected	
NCD003236841	WARLICK PAINT COMPANY	945 MONROE ST	STATESVILLE	IREDELL	21.47	
					known/suspected	
NCD986232213	SUMMIT RESOURCE MANAGEMENT	3501 GRIBBLE ROAD	STALLINGS	UNION	21.45	
					soil	inorganics
					surface water	organics
					soil	organics
NCD000776732	SAFETY-KLEEN CORP 3-031-02	HWY 41W	WALLACE	DUPLIN	21.26	
					known/suspected	

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD003223799	CLAYTON-MARCUS CO., INC.	HWY 127 N	BETHLEHEM	ALEXANDER	21.11	soil	organics
						soil	metals
						soil	cyanide
NCD054284518	STANDARD PACKAGING CORPORATION	HWY 73 W	MT GILEAD	MONTGOMERY	21.07	known/suspected	
NCD003214574	SPRUANCE SOUTHERN, INC.	HWY 8	WINSTON-SALEM	FORSYTH	20.81	known/suspected	
NCD046149019	HISTRAND CHEMICAL, INC.	HWY 9	LENOIR	CALDWELL	20.72	known/suspected	
NCD980559637	BEAUNIT CORP./DYING & FINISHING	LINEBERGER STREET	LOWELL	GASTON	19.99	known/suspected	
NONCD0002780	APAC-CLARKS ASPHALT PLANT	OLD US HWY 70	CLARKS	CRAVEN	19.82	soil	organics
NONCD0001005	TRANSEASTERN CORP.	509 S LODGE ST	WILSON	WILSON	19.56	known/suspected	
NCD048462881	ARMOLOY CO OF NC/HI-TECH	1603 SALISBURY ROAD	STATESVILLE	IREDELL	19.37	known/suspected	
NCD003152659	REICHHOLD CHEMICAL, INC.	161 BUFFALO AVENUE	CONCORD	CABARRUS	19.32	known/suspected	
NCD053528170	LAURENS GLASS/BALL-INCON GLASS	US 1 SOUTH	HENDERSON	VANCE	19.23	groundwater	organics
NCD981921083	SWIFT ADHESIVES	9724 INDUSTRIAL DRIVE	PINEVILLE	MECKLENBURG	19.19	known/suspected	
NONCD0000014	BOISE CASCADE	SR 1916	MONCURE	CHATHAM	18.86	known/suspected	
NCD057037178	PFIZER INC/COTY DIVISION	COX MILL RD & HWY 42 E	SANFORD	LEE	18.48	soil	organics
NONCD0000092	FUNDER AMERICA	200 FUNDER RD	MOCKSVILLE	DAVIE	18.33	known/suspected	

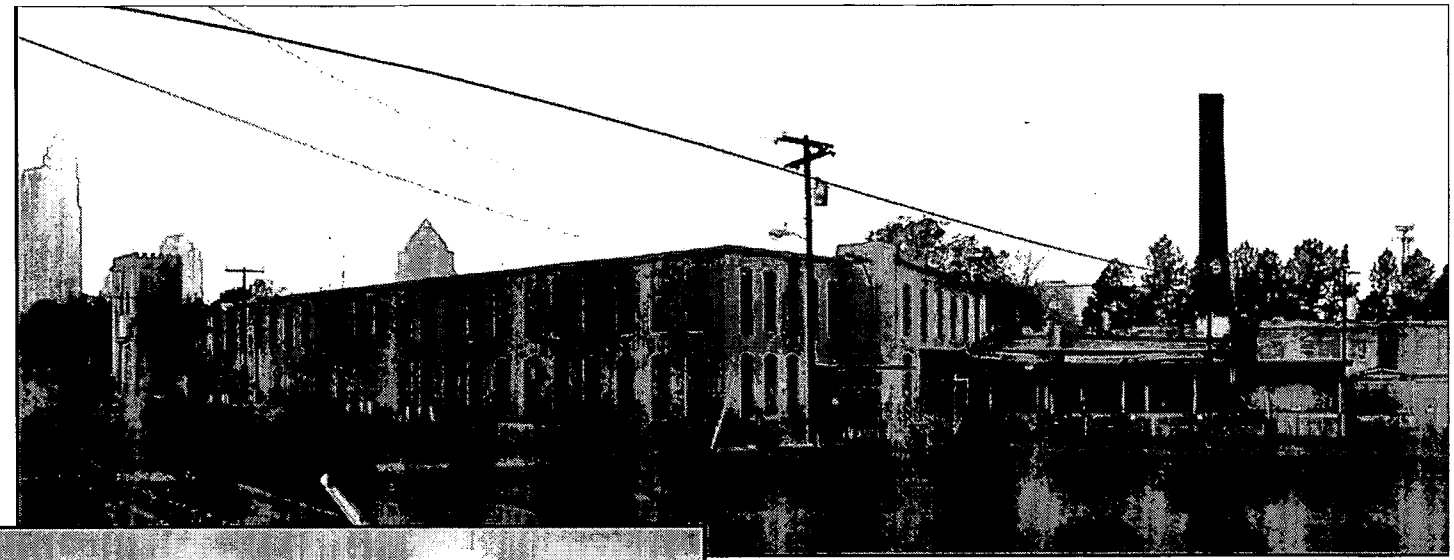
APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*	*Score*	*Medium*	*Contaminant*	
NCD067178707	FAWN PLASTICS CO., INC.	RT 264 BUSINESS	MIDDLESEX	NASH	17.34	soil	organics
NONCD0002848	LOXCREEN	RT 501 S	ROXBORO	PERSON	16.41	known/suspected	
NONCD0000034	ASHEVILLE INDUSTRIES	20 GLEN BRIDGE RD/SR3495	ARDEN	BUNCOMBE	16.30	soil	organics
NCD071567259	WEYERHAEUSER CO/MONCURE	STATE ROAD 1916	MONCURE	CHATHAM	16.04	known/suspected	
NONCD0002498	SOUTHERN GRAPHICS SYSTEMS	2406 N. 23RD STREET	WILMINGTON	NEW HANOVER	15.92	groundwater	metals
NONCD0000053	CAROLINA MARBLE CO.	INDIAN MOUND ROAD	ALBEMARLE	STANLY	15.28	known/suspected	
NONCD0000099	PARTON'S MOTOR COMPANY	2800 SOUTH YORK ROAD	GASTONIA	GASTON	15.22	known/suspected	
NONCD0000082	CAPE FEAR CHEMICALS/HL BRICE	HWY 701 S	ELIZABETHTOWN	BLADEN	11.48	soil	pesticides
NCD081333858	HOLSTON ENERGY INC/HOLSTON FUEL	HWY 19A/235 BYPASS	WAYNESVILLE	HAYWOOD	7.70	soil	organics

Presented to

Environmental Review Commission of the General Assembly

January 26, 2012



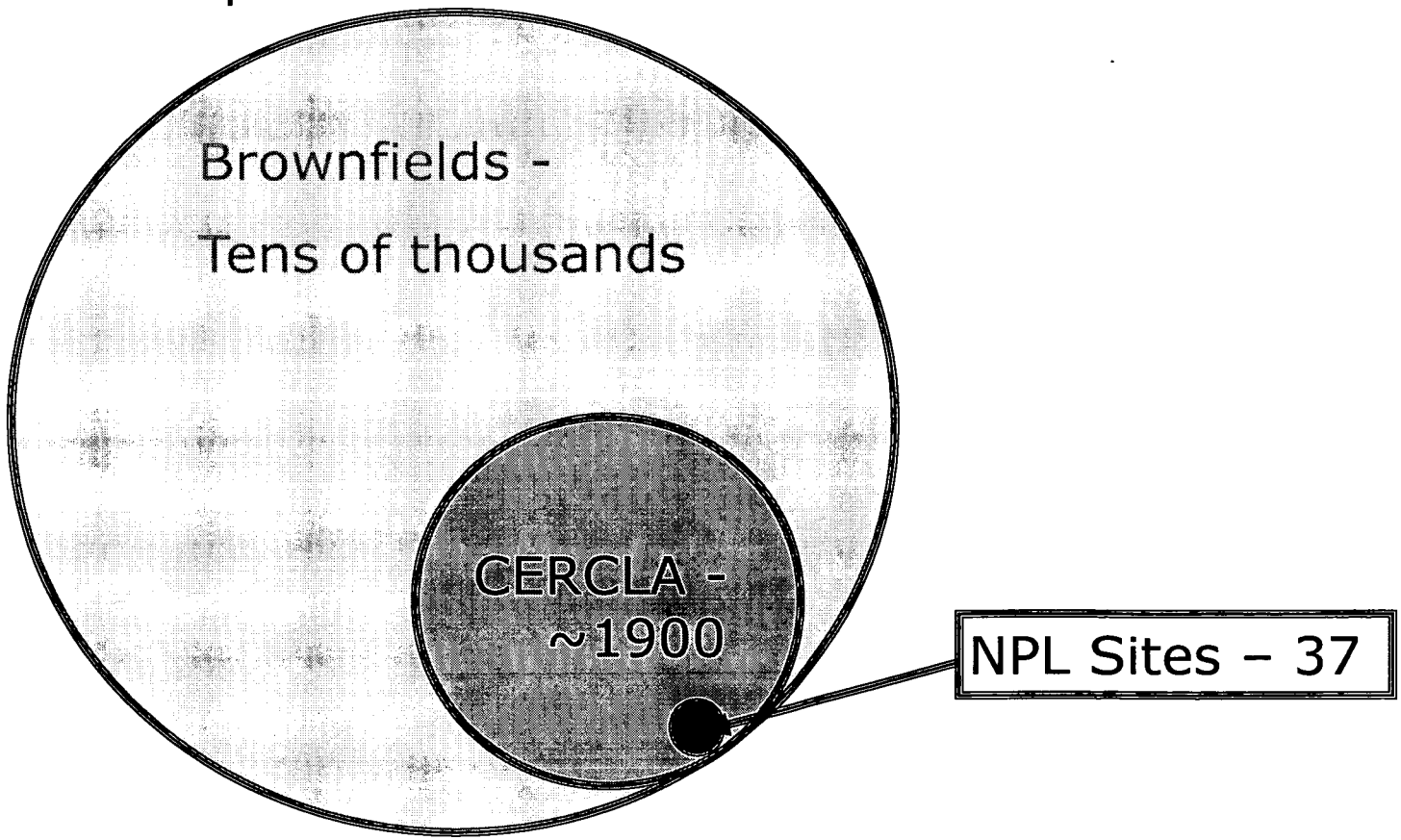


The Brownfields Program

Bruce Nicholson, Brownfields Program Manager
NC DENR
Division of Waste Management

Cleanup Site Universe

Brownfield: "Abandoned, idled, or underused property where redevelopment is hindered by real or perceived environmental contamination."



Brownfields Public Policy

- Address contaminated sites with redevelopment potential in a way that encourages safe redevelopment
- Preserve Responsible Party liability to discourage future contamination
- In effect, set two public policies on cleanup…one for polluters and one for non-polluters (Brownfields Property Reuse Act)

Brownfields Property Reuse Act of 1997

- Create special class of remediating parties: 'prospective developers' of abandoned sites
- Provide them with liability protection in return for measures that make property safe for reuse
- Provide them with a tax incentive to assist in costs
- Ensure enforceability of land use restrictions

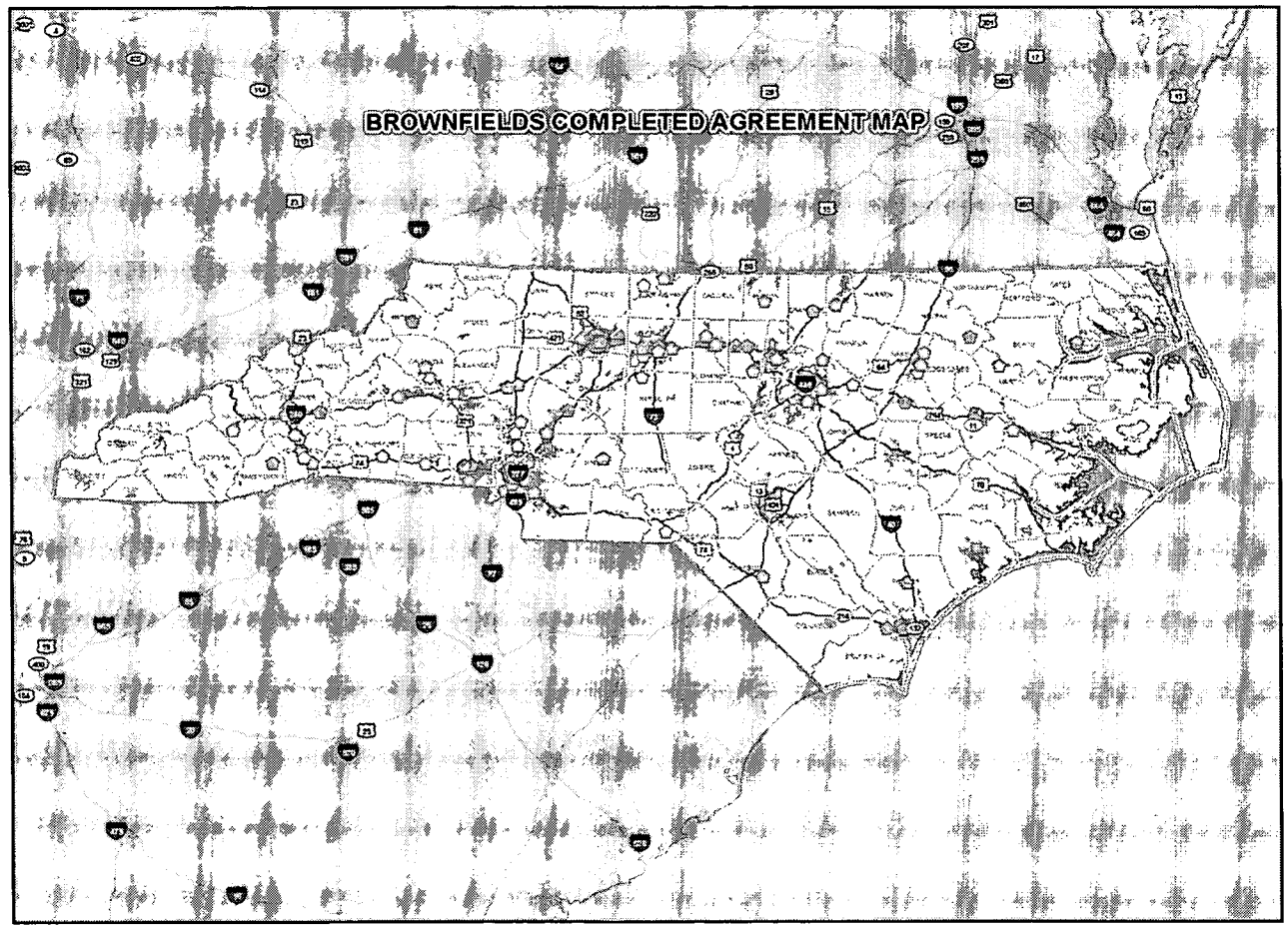
Hypothetical Cases: vary required risk controls based on desired property use

Contamination	Somewhat restricted Residential Use	More restricted Residential Use	Commercial or Industrial Use
Solvents in groundwater beneath bldg.	Subslab vapor mitigation and monitoring; prohibit use of groundwater	No basements, parking only on ground floor, residential above, prohibit use of groundwater	No basements, seal cracks, vapor intrusion ranges from HVAC upgrade to vapor mitigation
Lead in soil	Excavate and remove	Excavate or cap, multifamily use only, sampling of common play area; no commercial day care	Cap, restriction on excavations

Where We Are

- 204 Brownfields Agreements Recorded
- $8+ billion in facilitated private investment
- 296 acres redeveloped during 2011
- Lender recognition of BFAs as trigger to release funds for redevelopment

Completed Agreements



Recent Progress

- Land use restriction compliance monitoring and innovative compliance assistance (a model for other states).
- Redevelopment Now option – for prospective developers who need a Brownfields Agreement in a short timeframe.
- "Ready for Reuse"- opportunity to advance redevelopment projects before a Prospective Developer is identified.
- Partnering with NC Rural Center and local governments to support local redevelopment initiatives and grant efforts.
- $1.2 million in competitive federal grants to local gov'ts. in FFY 2011.

2011 U.S. EPA Brownfield Grant Recipients

- Williamston $400,000
- Wilmington $400,000
- Upper Coastal Plain Council of Government $400,000

Total = $1,200,000

2012 U.S. EPA Brownfield Grant Applicants

- Centralina COG
- City of Hickory
- Town of Cooleemee
- Isothermal Planning and Development Commission
- City of Durham
- Town of Franklin
- City of Greenville
- City of Havelock
- City of High Point
- Land-of-Sky Regional Council
- Town of Mesic
- Piedmont Triad Regional Council
- City of Sanford
- Scotland County
- Vance County
- City of Whiteville
- City of Wilson

Roles

Federal Program

- **Funding to States**
  - NC Brownfields Program $820,790
- **Competitive Brownfields Grants to Local Governments**
  - $1.2 M in NC last yr.

State Program

- **Liability Protection to PD**
  - Brownfields Agreement
- **Guidance for Safe Redevelopment**
  - Brownfields Agreement
  - Deed Recordation
- **Tax Incentives to PD**
  - BF Property tax abatement

Goal: Something For Everyone

NCDENR / EPA

- Risk Reduction / Public Protection
- Smart Growth
- Sustainability

Prospective Developer

- Reduced Uncertainty
- Liability Protection
- Profit

Local Govt.

- Economic Devel.
- Jobs
- Sustainability
- Risk Reduction

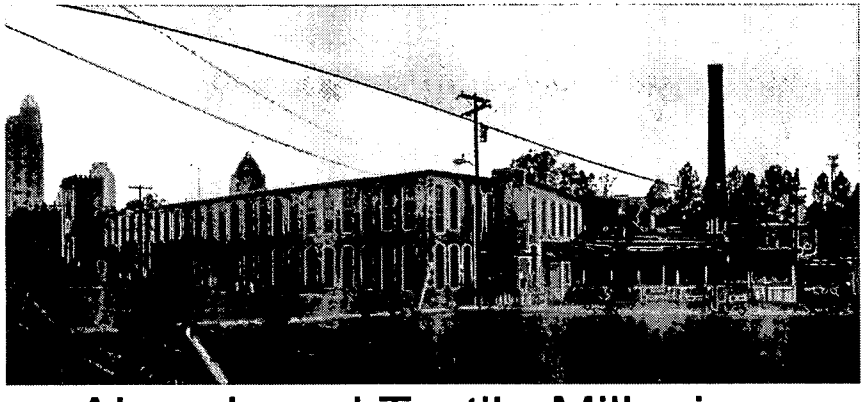
Lender

- Reduced Uncertainty
- Profit

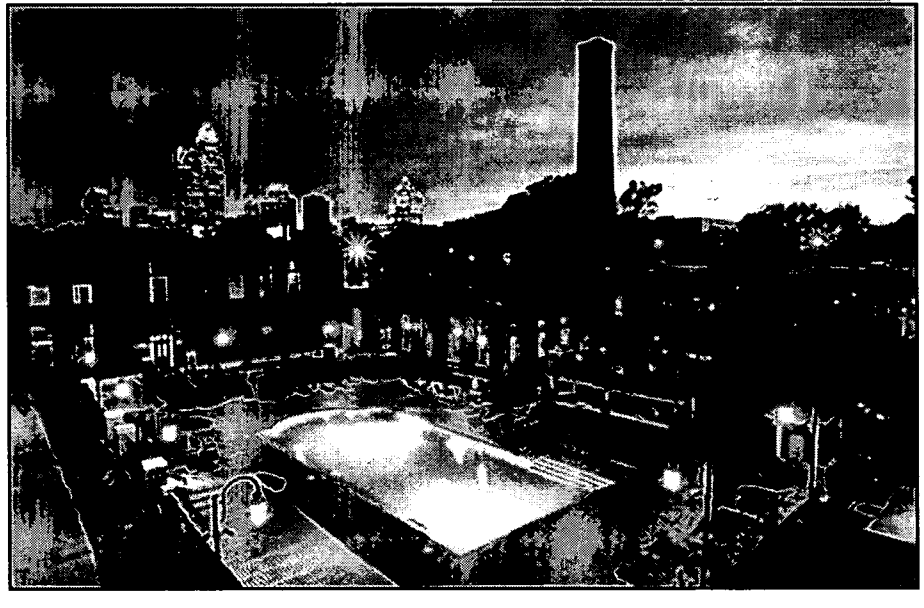
Neighbors

- Economic Benefits, Jobs
- Risk Reduction
- Blight Reduction

From Former Alpha Mill to Alpha Mill Apartments



Abandoned Textile Mill, circa 1888 and Chromium Electroplater, circa 1955

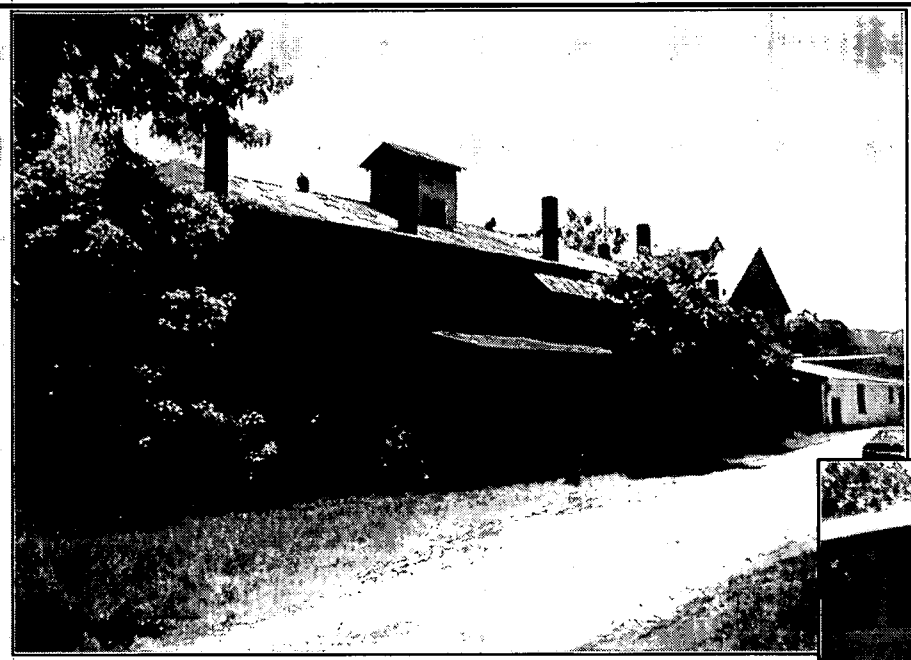


Alpha Mill Apartments bordering uptown Charlotte



Preservation of historic architectural heritage

From Former Schoonmaker Mica Co. to Mica Village Lofts

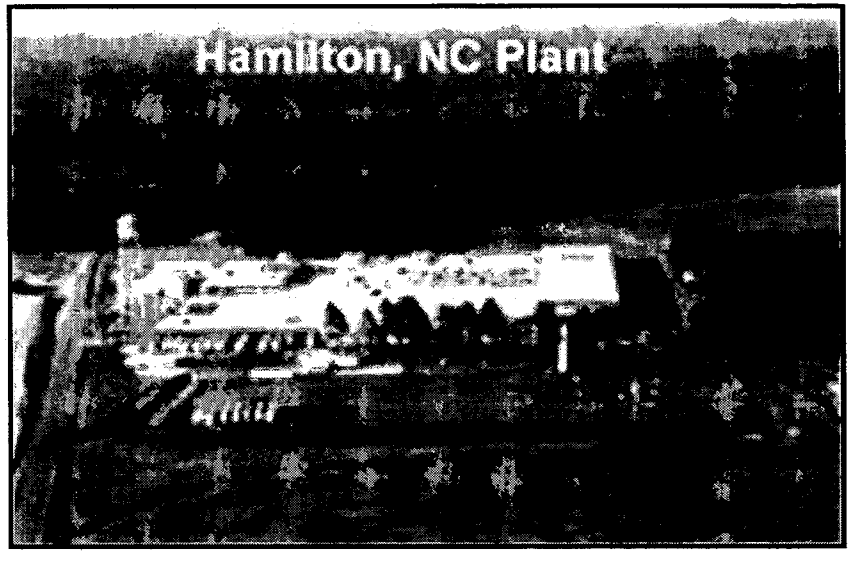


Abandoned Mica Plant, circa 1905 in Biltmore Village, Asheville



Green building redevelopment as Mica Village Loft Condominiums

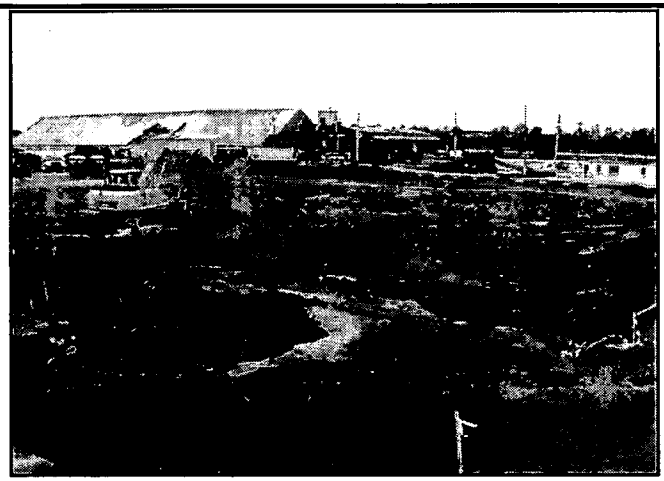
From Alamac Textiles to Penco Metal Products - Hamilton



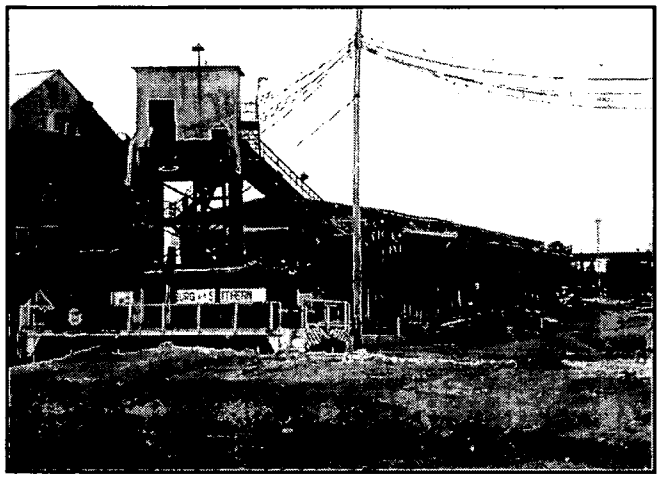
School locker manufacturer relocates manufacturing operations to 400,000 ft^2 former textile mill.

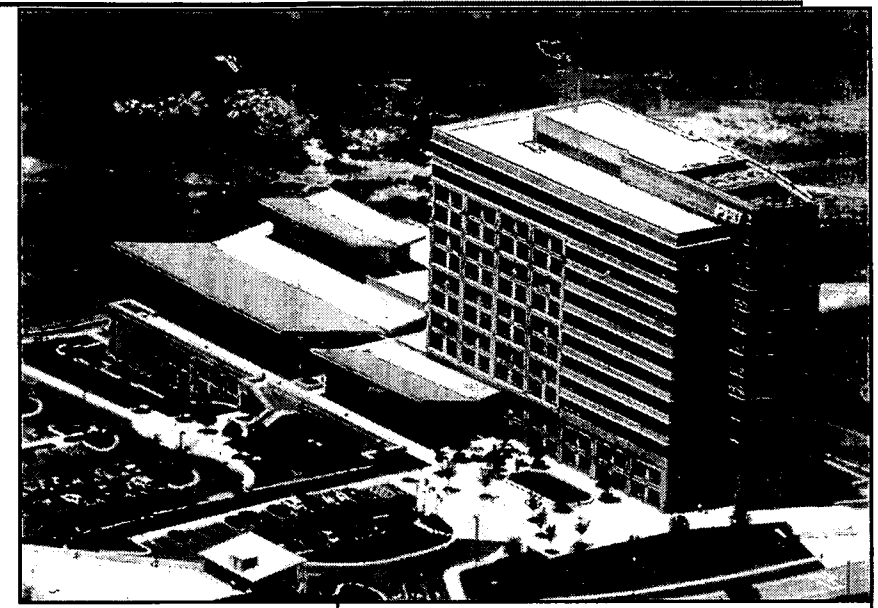
- Hamilton, Martin County
- 300 manufacturing jobs replaced those lost by Alamac Textiles bankruptcy
- Brownfields Agreement facilitated Dept. of Commerce recruitment

From Former Almont Shipping Co. to PPD World Headquarters - Wilmington

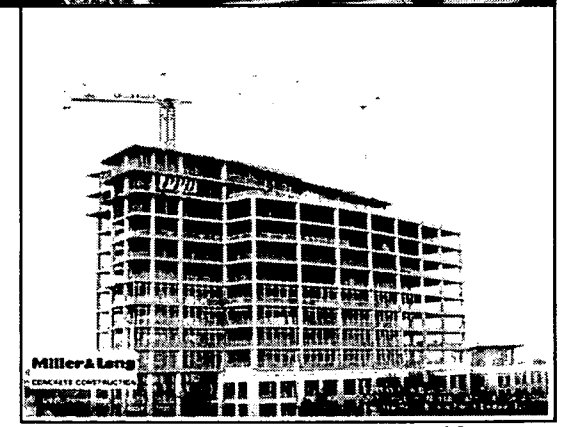


Abandoned Fertilizer Stockyard/Shipping Facility

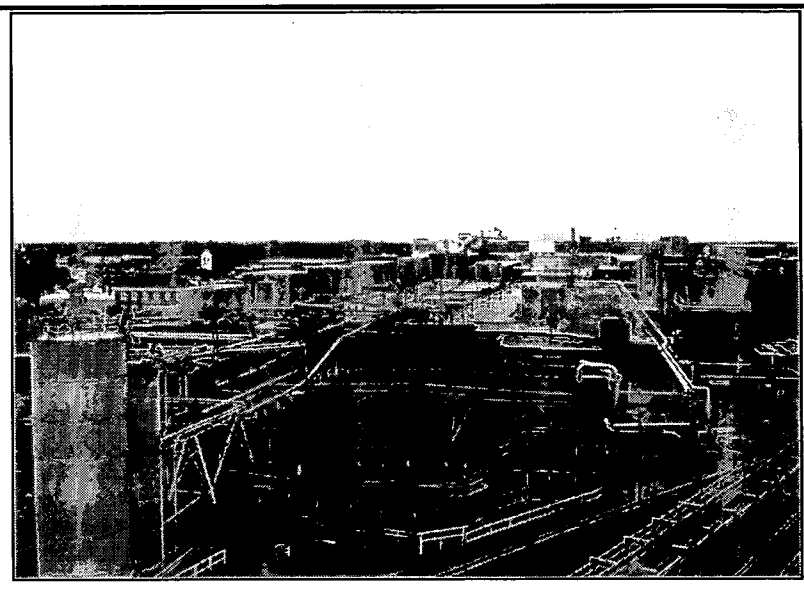




PPD World Headquarters in downtown Wilmington, 400,000-ft^2, and 1,800 workers

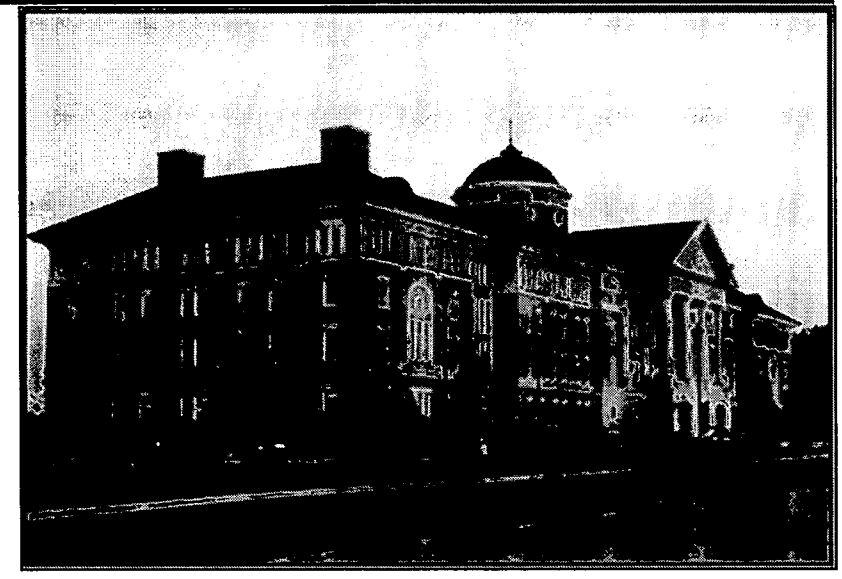


From Pillowtex Plant 1 to NC Research Campus - Kannapolis



Former Pillowtex and Cannon Mills on 150 acres in Kannapolis

Largest single layoff in State history (4800 jobs lost)



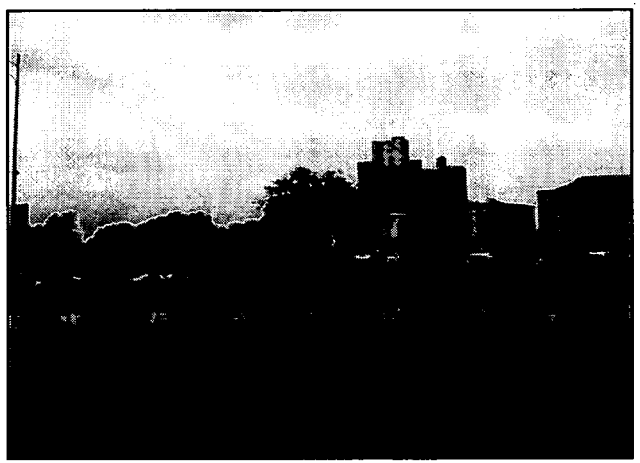
North Carolina Research Campus

David Murdock/Dole/University Public-Private Venture Nutrition/Ag Research Park

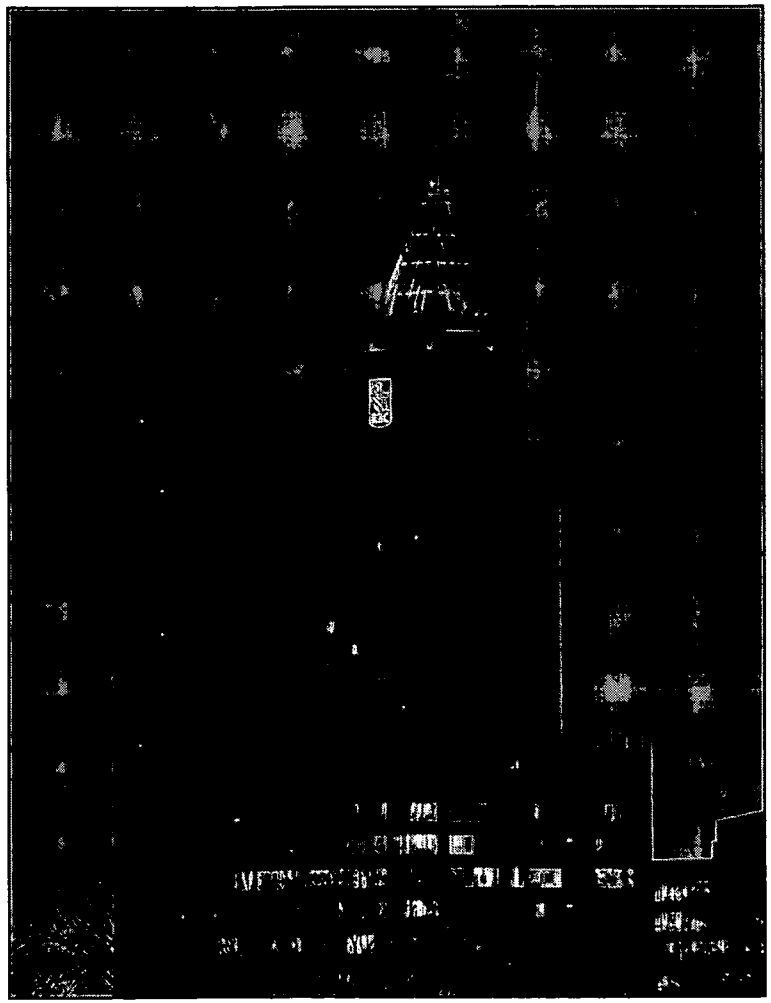
$500 M – $1 B investment

Core Labs built, more to follow

From Vacant Lot to RBC Plaza - Raleigh



Vacant lot with former drycleaning history needed brownfields agreement



At 538 feet, the RBC Plaza and Condominiums is presently the tallest building in Raleigh

From Former Pilot Mill to Pilot Mill Office Complex - Raleigh



Abandoned Turn of the Century Textile Mill Slated For Demolition

Tax Value:$200,000

Cleanup Cost:~$1 million



Fully Leased Office Complex on National Register of Historic Places

Value over $13 million

Cleanup Cost:~$100,000

Spurred Neighborhood investment of $100 million

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NCDENR
North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

October 4, 2011

MEMORANDUM

To: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FROM: Kari Barsness KKB
Director of Legislative and Intergovernmental Affairs

SUBJECT: N. C. Brownfields Program 2011 Annual Report (Division of Waste Management)

DATE: October 1, 2011

Pursuant to General Statute 130A-310.40, the Division of Waste Management shall submit to the Environmental Review Commission a report on the Brownfields Program by October 1st of each year. Please consider the Brownfields Program 2011 Annual Report attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 715-4189 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Assistant Secretary for Environment Robin W. Smith
Dexter R. Matthews, Director, Division of Waste Management
Kristin Walker, Fiscal Research Division
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Claire Hester, Fiscal Research Division
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Phone: 919-733-4984 \ FAX: 919-715-3060 Internet: www.enr.state.nc.us

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One NorthCarolina Naturally

Annual Report to the North Carolina General Assembly

The N. C. Brownfields Program

October 2011



NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Division of Waste Management
http://portal.ncdenr.org/web/wm/home

North Carolina Brownfields Program
http://portal.ncdenr.org/web/wm/bf

Department of Environment and Natural Resources

Beverly Eaves Purdue
Governor

Dee Freeman
Secretary
N. C. Department of Environment and Natural Resources

Dexter R. Matthews
Director
Division of Waste Management

DENR
Division of Waste Management
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Raleigh, NC 27699-1646
(919) 508-8400*
*Please note: effective 10/24/2011, phone number will be: (919) 707-8200

Brownfields Property Reuse Act
Annual Report to the General Assembly
October 2011

Executive Summary

This report to the General Assembly is required by the Brownfields Property Reuse Act (BPRA) of 1997 (G.S. 130-310.30 *et seq.*) and describes the activities and status of the N.C. Brownfields Program for the period from Oct. 1, 2010 through Sept. 30, 2011 (federal fiscal year (FFY) 2011). Brownfields are abandoned, idled or underused properties where environmental contamination hinders redevelopment due to concerns about environmental liability. The Brownfields Property Reuse Act removes barriers to redevelopment by protecting prospective developers from liability for contamination they did not cause. The N.C. Department of Environment and Natural Resources (DENR) is pleased to report continued success in the state's efforts to revitalize and safely reuse brownfields properties through the N.C. Brownfields Program and its partnership with the U. S. Environmental Protection Agency (EPA).

Program Output

At the conclusion of last year's reporting period (September 30, 2010), the Brownfields Program had produced a cumulative total of 173 brownfields agreements to facilitate redevelopment of contaminated property since the program began in October 1997. This year the program set a goal of producing 27 or more agreements, thereby assuring a milestone 200th agreement. The program achieved this goal and produced 31 agreements, more than in any previous year and ending this reporting period with a cumulative total of 204 agreements.

For the reporting period from Oct. 1, 2010- Sept. 30, 2011 the tracked measures include:

- Program applications received: 45
- Brownfields agreements ready for development: 31
- Acres of Brownfields finalized: 296
- Estimated committed capital investment for projects entering program: $890 million

Since the program began, all of the public dollars spent by the program are either federal funds from a cooperative agreement with the EPA or from program fee receipts (DENR receives no state-appropriated funds for the program). With these funds, the program is facilitating or has facilitated more than $8.2 billion in estimated private investment in brownfields redevelopment projects.

Outreach to Local Governments

Working in partnership with local governments and Councils of Government (COG) towards redevelopment projects has also led to continued success for those local governments applying

for and winning competitive brownfields grants offered by the EPA for the assessment and cleanup of brownfields properties. The successes below show a general recognition that North Carolina not only has significant brownfields redevelopment needs, but that there is a system in place whereby an active community of local governments is working in partnership with the state to effectively address brownfields redevelopment. Three North Carolina local governments were awarded a total of $1.2 million in EPA brownfields grants in 2011, including Wilmington, Williamston, and the Upper Coastal Plain Council of Governments.
After the grants are awarded by the EPA, the program works with these local government grantees to educate their local brownfields stakeholders (such as lenders, real estate professionals, businesses and developers) about how a brownfields agreement can define their environmental liability and facilitate their redevelopment. While such a grant is not necessary to gain a brownfields agreement under the program, it does make the process easier and provides funding for assessment and/or cleanup for local governments and other eligible entities.

Program Background

Brownfields are abandoned, idled or underused properties where environmental contamination hinders redevelopment due to concerns about environmental liability. Redeveloping brownfields properties has become increasingly popular as developers and local governments realize that these properties offer viable opportunities to bring economic growth, public health protection, jobs and quality-of-life benefits to cities and rural areas. The BPRA gives DENR the authority to enter into a brownfields agreement with a prospective developer of a contaminated site. The agreement, which is only available to a developer who did not cause or contribute to the contamination, limits the developer's environmental liability and provides a clear path for safe redevelopment. The availability of brownfields agreements has the additional benefit of bringing these properties to DENR's attention, so the environmental contamination can be addressed. DENR partners with the prospective developer to evaluate the possible risks associated with site contamination and then negotiates a brownfields agreement setting out the steps necessary to make the site safe for the developer's intended reuse. The result is a redevelopment project that fuels economic growth while protecting public health and the environment.

Since a brownfields agreement gives the prospective developer liability protection as long as the developer complies with its terms, the agreement removes financial uncertainty that might otherwise make the project impossible. This liability shield often allows prospective developers to obtain project financing previously unavailable for these properties.

Under the BPRA, DENR can distinguish between the prospective developer of a brownfields property and the polluter in the amount of environmental cleanup required. As long as the developer did not cause or contribute to the pollution, the BPRA will not require the developer to clean up the site to current unrestricted use standards. Under the brownfields agreement, the developer only needs to take the steps necessary to make the site safe for reuse. In developing a brownfields agreement, DENR must examine the risks to public health and the environment posed by the contamination. Then, DENR determines what the prospective developer must do to ensure safe redevelopment. These actions can range from land-use restrictions only to some environmental cleanup (such as removal of contaminated soil), or mitigation, such as vapor intrusion protection. In addition to holding the prospective developer accountable for meeting the terms of the agreement, DENR reserves the right to take enforcement action against those parties

responsible for the original contamination. That may result in the polluter being required to do additional environmental cleanup on the site.

State law also provides a brownfields property tax incentive for prospective developers that allows the developer to recoup funds spent on assessment and cleanup. These local incentives encourage developers to restore contaminated sites to a productive use; it also relieves development pressure on pristine or undeveloped "greenfields" property. While the environmental benefits are obvious, brownfield redevelopment projects also create a significant number of jobs and put previously idle properties back on the local tax rolls. This dual economic-environmental gain benefits the state, local government, and the brownfields developer. In the 10 years since the BPRA was enacted, and as these benefits have become better known, the program's popularity and demand for its services have increased dramatically.

The overall result is a winning scenario for the environment and economic development. Risk reduction and cleanup are achieved at sites that might otherwise have caused harm to public health or the environment and communities benefit from redevelopment of abandoned properties that once had little hope for productive reuse. The public benefits of job creation, improved quality of life in the surrounding neighborhoods, local tax base expansion and contribution to the general fund are other positive impacts. Estimates of capital investment provided by brownfields developers total more than $8.2 billion through FFY 2011.

The program also supports other community goals, such as preservation of green space and reduction of urban and suburban sprawl, making urban development more economically efficient. For each brownfield property redeveloped, a greenspace is saved. The 204 properties that have received completed agreements comprise a total of 2,775 acres. This is, in effect, acreage that is being recycled into reuse, sparing more pristine lands from being developed and put at risk for future contamination.

Figure 1 below summarizes the brownfields agreement process as experienced by a developer.

Figure 1. Summary of the Brownfield Process

Step 1 – A prospective developer (PD) submits a Brownfields Property Application to DENR outlining a brownfields site it desires to buy or sell for the purpose of redevelopment, and for which it needs liability protection. DENR determines if the PD, the subject property and the proposed redevelopment project are eligible under the BPRA statute. PD pays initial $2,000 fee at the time its project is deemed eligible by DENR.

Step 2 - DENR reviews existing site data to determine the risk posed by contamination at the site. If the data are insufficient to evaluate such risk, DENR advises the PD on further site assessment to gather the necessary data.

Step 3 - DENR determines what actions are necessary to make the site suitable for the PD's intended reuse and includes these actions in a draft brownfields agreement. The PD and DENR negotiate the provisions of the draft brownfields agreement and other required statutory documents.

Step 4 - The brownfields agreement is publicly noticed with a 30-day public comment period.

Step 5 - The brownfields agreement is finalized after any public comments are considered and incorporated. Prior to the execution of the finalized brownfields agreement, the PD pays the secondary $3,500 fee. The PD uses the final brownfields agreement, which provides liability protection, to obtain financing for the project. Liability protection is contingent upon the completion of the actions required by the brownfields agreement. The brownfields agreement makes the site eligible for the brownfields property tax incentive.

Program Status

The program is preparing to receive its eighth year of funding from the EPA under its State Response Program Cooperative Agreement, authorized under the federal brownfields act. This year, the federal funding provided for five project managers, various program management and administrative functions, and an attorney. Fee funding provides for three project managers and a compliance coordinator. This proportion of federal funding versus fee funding has been shifting in recent years as a function of the U. S. EPA cutting brownfields funding to states and the program's concerted effort to offset these reductions through fee funding in an effort to maintain its capacity for producing brownfields agreements. This effort has been successful to date; however, there will come a point where further federal grant cuts can not be compensated through fee revenue increases.

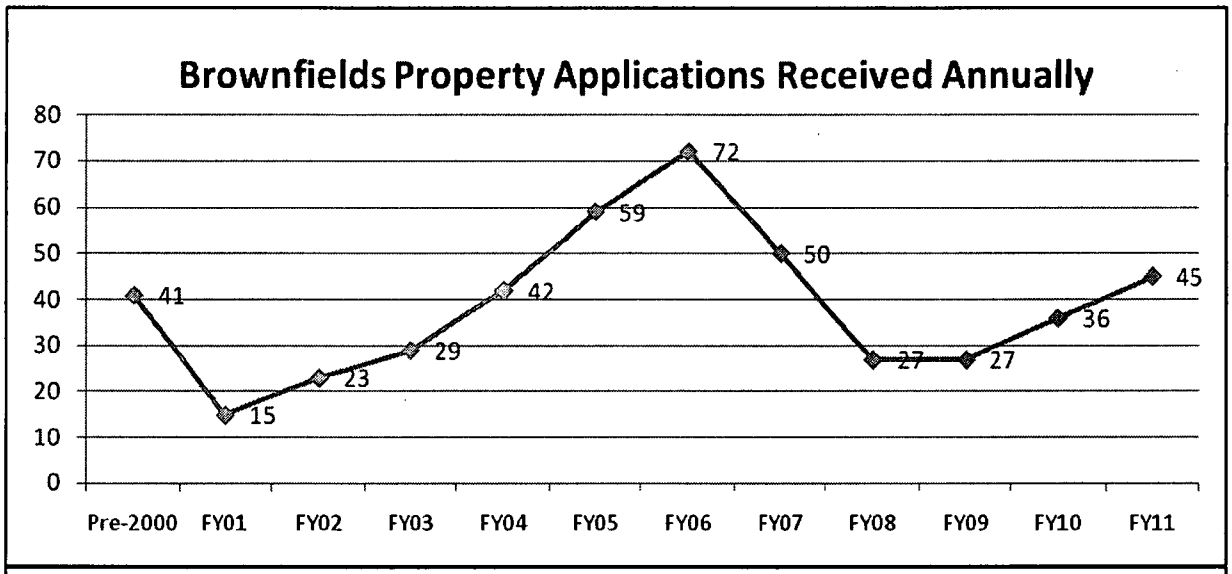
During FFY 2011, the program received 45 applications for projects seeking entry into the program. This compares favorably with the 36 applications received in FFY 2010 and indicates a continuing improvement in the real estate market as the economy has improved.

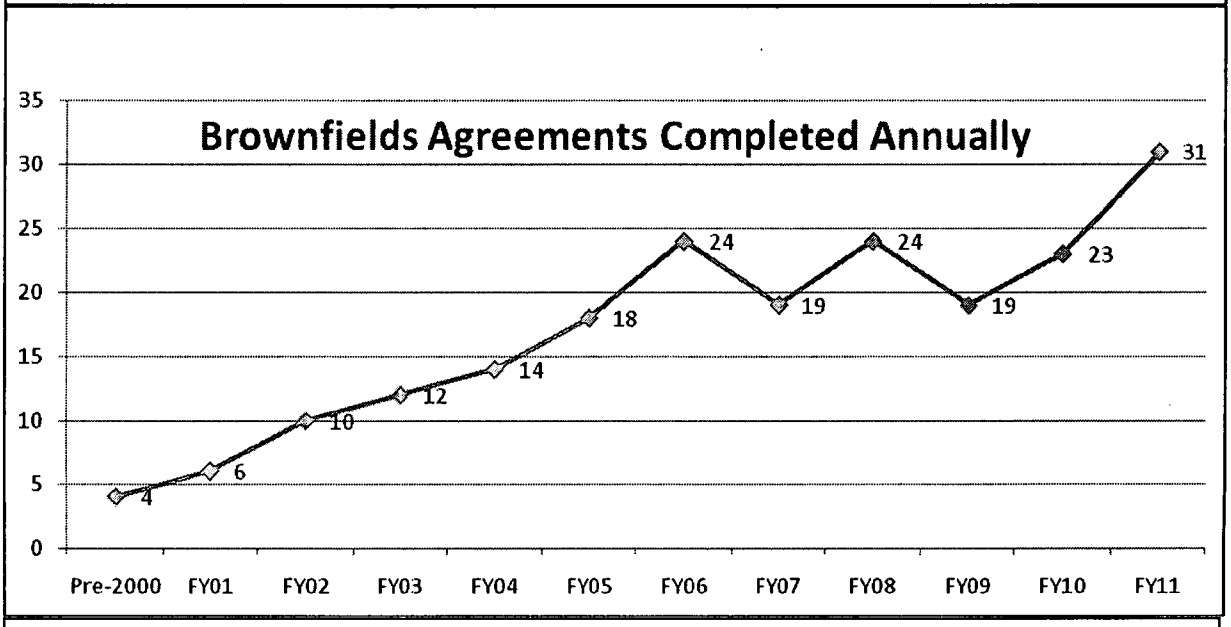
During FFY 2011, the program completed 31 brownfields agreements. This is eight more than last year's 23 agreements and is more than the program has ever produced. This increase is due, at least in part, to the success of the Redevelopment Now program option, which is capable of producing brownfields agreements in a shorter timeframe.

In reviewing trends over the past few years, the extreme economic challenges since late 2008 resulted in plummeting real estate investment statewide and nationally in 2009 and a slow recovery since that deep recession. As a direct result of those difficult market conditions, the N.C. Brownfields Program saw a substantial reduction in the numbers of brownfields property applications (from 50 in FFY 2007 to 27 each in FFY 2008 and FFY 2009) and completed brownfields agreements (from 19 in FFY 2007 to 24 in FFY 2008 and 19 in FFY 2009).

Another measure used by the program is committed private investment facilitated by brownfields agreements. Generally, these investments would not have been made in brownfields redevelopment areas and often not made at all without the liability relief afforded by a brownfields agreement. The cumulative total private investment facilitated by the program from its inception now stands at over $8 billion, with approximately $892 million of that being added by projects entering the program during FFY 2011.

The progress and trends are summarized in graphical form in Figure 2, below.


Brownfields Property Applications Received Annually
80
70
60
50
40
30
20
10
0
41
15
23
29
42
59
72
50
27
27
36
45
Pre-2000
FY01
FY02
FY03
FY04
FY05
FY06
FY07
FY08
FY09
FY10
FY11


Brownfields Agreements Completed Annually
35
30
25
20
15
10
5
0
4
6
10
12
14
18
24
19
24
19
23
31
Pre-2000
FY01
FY02
FY03
FY04
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FY09
FY10
FY11

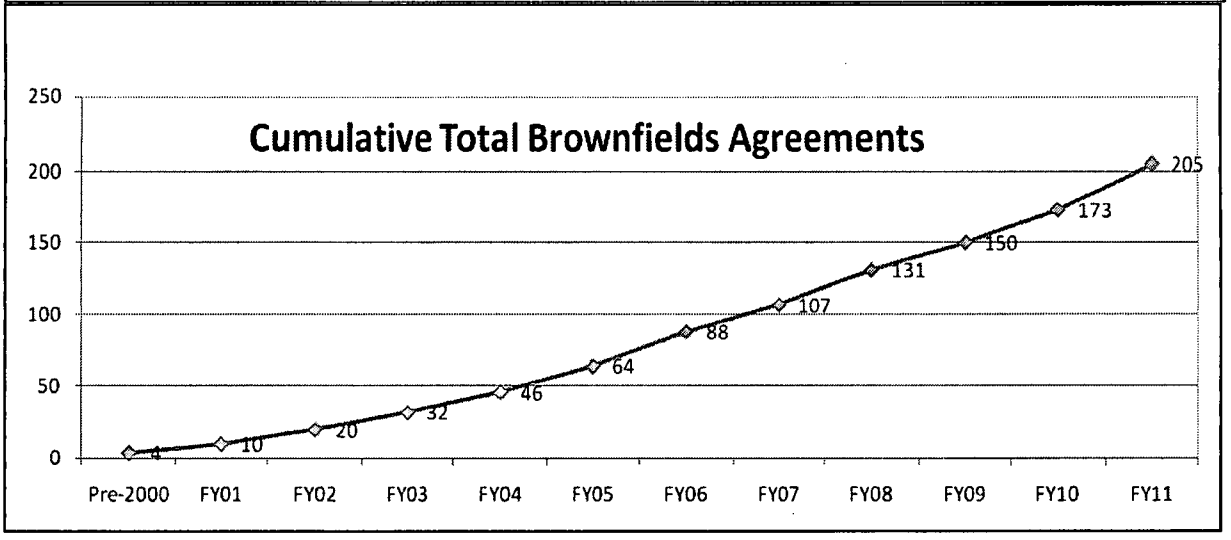
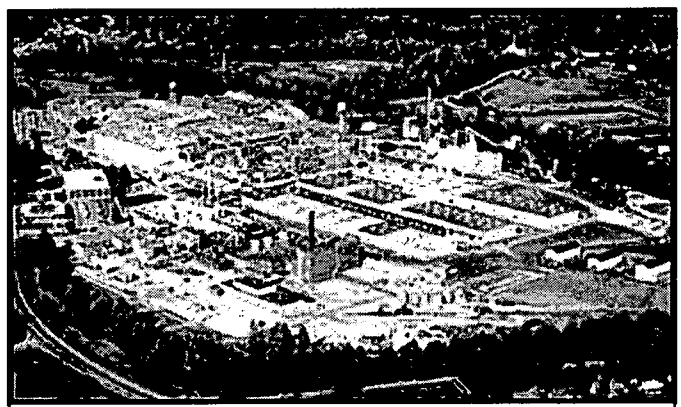

Cumulative Total Brownfields Agreements
250
200
150
100
50
0
4
10
20
32
46
64
88
107
131
150
173
205
Pre-2000
FY01
FY02
FY03
FY04
FY05
FY06
FY07
FY08
FY09
FY10
FY11

Figure 2. Brownfields Program Trends

Program Highlight: Brownfield Agreement for Redevelopment of Historic Paper Mill

The Ecusta Paper Mill near Brevard, N. C. began operation in 1939 and was at one time one of the largest paper mills in the southeast. The mill specialized in making fine opaque papers for cigarettes and bibles. The mill's long history gave way to a series of layoffs in the late 1990s. Ultimately, it closed and was abandoned in 2003.



Ecusta Paper Mill in its Heyday

The North Carolina Brownfields Program has signed a brownfields Agreement with Davidson River Village, LLC, setting the stage for the redevelopment of the former historic mill. This is the first of seven planned brownfields agreements that will eventually cover 540 acres of property with a planned $750 million mixed use redevelopment. The decline and closure of the historic Ecusta Mill led to 2,300 layoffs. The planned development could regenerate nearly 2,000 jobs after final buildout. The agreement also marked a milestone for the North Carolina Brownfields Program as the agreement is the 200th recorded brownfields agreement since program inception. The first agreement was signed for the redevelopment of the former Nebel Knitting Mill into the Design Center of the Carolinas in the South End District of Charlotte in 1998.

The Ecusta brownfields agreement is the culmination of cooperative efforts between numerous environmental programs within DENR and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) pre-remedial and removal programs of EPA Region 4. The abandonment of the mill in 2003 resulted in shutdowns of various environmental systems and threatened uncontrolled releases into the Davidson River. Much progress has been made since then. Davidson River Village signed an administrative order on consent with DENR to conduct assessment and cleanup activities under both the EPA removal program and the DENR Inactive Hazardous Sites program in the Division of Waste Management. Active demolition and cleanup of the mill has been ongoing for three years. Cleanup of several portions of the property are complete or nearing completion, and ongoing monitoring will continue through the redevelopment of the property. The



Cleanup and demo nearly complete on its way to reuse

brownfields agreement will provide institutional control provisions that will protect public health and the environment on the first tract slated for redevelopment. It is the first in a series of seven planned agreements for various tracts on the property.

Under Davidson River Village, LLC, a part of Renova Partners, the property will be redeveloped into Davidson River Village, a large mixed-use redevelopment to include residential, retail, hospitality, and open space uses with strong acknowledgement of the mill history for the local community.

Outreach and Education

The program is largely market-driven in that prospective developers bring their redevelopment projects to the program in order to avoid environmental liability that may be a barrier to project financing. One of the goals of the program is to educate the development community, lenders and local governments regarding the program's existence and usefulness as a tool for private and public redevelopment stakeholders. We have again done so this year, and efforts to increase awareness of the program continue to bring new redevelopment opportunities and their attendant public benefits into the program.

Interest in brownfields continues to develop statewide, and local governments in this state continue to have great success in competing for EPA brownfields grant funds. The EPA awarded approximately $60 million in competitive brownfields grants to local governments in FFY 2011 (lower than the typical $74 million due to federal budget cuts). Table 1 shows the brownfields grants awarded to local governments in North Carolina since program inception. The brownfields grant program has truly had statewide reach as 35 local government entities have been awarded 56 separate grants. These grants range in value from $200,000 for assessment, cleanup, and job training grants to $1,000,000 for revolving loan fund grants. Funds awarded can be used for various aspects of brownfields redevelopment, depending on the type of grant awarded.

The 2011 grantees were Charlotte, Durham, Wayne County, Whiteville, and Wilson. The local brownfields activities that will develop from these grants will serve to strengthen overall interest in brownfields redevelopment statewide and spark interest from developers seeking brownfields agreements from DENR as these communities begin their local brownfields redevelopment efforts. Moreover, these grant funds dovetail with DENR's efforts to support brownfields redevelopment, because the EPA continues to strongly recommend to these grantees that they seek entry into DENR's Brownfields Program to best use their grant funds. In this way, DENR's efforts are truly in coordination with those of EPA at the federal level and with government redevelopment teams at the local level.

Table 1. Local Government Awarded U.S. EPA Brownfield Grants
(2011 Awardees **bolded** below)

Grant Recipient Name	Grant Type	Award Year (FFY)
Charlotte	Assessment	1996
High Point	Assessment	1997
Burlington	Assessment	1998
Winston-Salem	Assessment	1998
Charlotte	Revolving Loan Fund	1999
Wilmington	Assessment	1999
Raleigh	Assessment	1999
Fayetteville	Assessment	2000
Concord	Assessment	2000
Fayetteville	Assessment, Revolving Loan Fund	2000
Laurinburg	Assessment	2000
Winston-Salem	Revolving Loan Fund	2000
Raleigh, City of	Revolving Loan Fund	2001
Winston-Salem	Job Training	2001
Land-of-Sky Regional Council	Assessment	2002
Concord	Assessment	2003
Farmville	Assessment	2003
Greensboro	Assessment	2003
Land-of-Sky Regional Council	Assessment, Revolving Loan Fund	2004
Laurinburg, City of	Cleanup	2004
Raleigh, City of	Assessment	2004
Fletcher, Town of	Cleanup	2005
Rocky Mount	Assessment, Cleanup	2005
Western Piedmont Council of Governments	Assessment	2005
Winston-Salem	Job Training	2005
Woodfin	Cleanup	2005
Durham	Assessment	2006
Forest City	Cleanup	2006
Land-of-Sky Regional Council	Assessment	2006
Navassa	Assessment	2006
Pembroke	Assessment	2006
Piedmont Triad Council of Governments	Assessment	2006
Sparta, Town of	Assessment	2006
Greensboro	Cleanup	2007
Greenville	Assessment	2007
Hickory	Assessment	2007
Robeson County	Assessment	2007
Sanford	Assessment	2007
Alamance County	Assessment	2008
Asheville	Assessment	2008
Durham	Job Training	2008
Greensboro	Revolving Loan Fund	2008
Hoke County	Assessment	2008
Isothermal Planning and Development Comm.	Assessment	2008
Land-of-Sky Regional Council	Assessment	2008
Rocky Mount	Cleanup	2008
Concord	Assessment	2009
Durham	Assessment	2009
Greensboro	Assessment	2009
Greenville	Assessment	2009
New Bern	Assessment	2009
Charlotte	Assessment	2010
Durham	Job Training	2010
Wayne County	Assessment	2010
Whiteville	Assessment	2010
Wilson	Assessment	2010
Williamston	**Assessment**	**2011**
Wilmington	**Assessment**	**2011**
Upper Coastal Plain Council	**Assessment**	**2011**

Site Summaries and Inventory

For brief descriptions and status of all brownfields projects in the program as of Sept. 30, 2011, please see the Appendix. It contains information on those projects completed this year, those projects completed since program inception, and those projects that are actively underway towards a brownfields agreement. Some definitions when referring to the tables include:

Finalized brownfields agreements are those projects that have a signed and recorded brownfields agreement (or have completed the public notice phase of the brownfields process and are merely waiting for the completed agreement to be signed). As of Sept. 30, 2011, the program has finalized a cumulative total of 204 brownfields agreements across the state, 31 of which were completed in the one-year period from Oct. 1, 2010 to Sept. 30, 2011.

Active eligible projects have been deemed eligible for a brownfields agreement under BPRA statutory criteria. These developers are projects in-progress, working with DENR in some stage of data gathering, analysis or agreement negotiation. As of Sept. 30, 2011, there were 119 active projects. Projects at this stage receive guidance from DENR as the developers gather the additional data needed to ensure protection of public health and the environment. Once research is complete, DENR analyzes the data, drafts and negotiates the terms of the brownfields agreement with the prospective developer, and approves initiation of the statutory 30-day public comment period.

Projects pending eligibility are in the initial stage of the brownfields process as they apply for entry into the program. Sites in this category have yet to meet the requirements under the statute for eligibility for a brownfields agreement. For sites in this category, the program has requested clarification or additional information from prospective developers regarding a site. Normally, developers respond to these requests for clarification, the sites are usually deemed eligible, and sites quickly move into the active eligible category. As of Sept. 30, 2011, 26 sites were in this category.

Improving Effectiveness

Leveraging Resources into Private Sector Investment

Throughout its existence, the Brownfields Program has provided a high economic development value for the federal funds it uses. The program's 204 brownfields agreements and other projects in the pipeline represent in excess of $8 billion in estimated private redevelopment investment. During that period, the program has not used any appropriated state funds and less than $5 million in federal grant funds. The successful leveraging of a small amount of federal funding into a much higher level of private investment for brownfields redevelopment is just one measure of the effectiveness of the BPRA. The economic activity and increased tax base generated by these brownfields projects exceeds the public funds expended by a wide margin.

Federal Cuts offset by Fee Funding Increases

The EPA grant funding to states for brownfields redevelopment programs has been consistently cut over the last few years. The North Carolina Brownfields Program received 10 percent less in FFY 2011 than the previous year. This trend of cuts appears likely to continue into the future, perhaps at an accelerating rate. In order to address the affect of such federal cuts on the program's capacity, the program had to increase its proportion of fee funding. In 2007 the program instituted an across-the-board fee increase from $2,000 to $5,500, reflecting the true cost of project managers that were federally subsidized through the program's EPA grant. In 2009, the program piloted the Redevelopment Now program option whereby a developer can pay a higher fee and have access to a nearly-dedicated project manager and immediate attorney services, reducing the time for completion of a brownfields agreement. Since these particular project managers are not federally funded, the fee to support this alternative had to be significantly higher -- $30,000 as compared to the typical $5,500 fee. Even with a much higher fee, this program option has been a success and Redevelopment Now has become a standard program option. This option has been popular with developers of high-value projects where the cost of carrying financing for the normal brownfields review process far exceeds the fee. Five agreements were finalized under this program this year and others are nearing completion. In this way, the program has quickened the pace on many such Redevelopment Now projects, reducing the time in the process from typical 18 months to as little as to five-to-six months. The resulting processing efficiency gain is partly responsible for the program's increased production rate this year (31 agreements this year as opposed to 23 last year).

Fund Status

The program receives no state appropriation and exists on two funding sources: federal cooperative agreement funds and fee receipts. All of the brownfields fees charged by the program go into the Brownfields Property Reuse Act Implementation Account as authorized under the state statute. While the majority of program funding comes from the federal cooperative agreement, the fee funds are used by the program to supplement the federal cooperative agreement funds and play a key role in the program's capacity to produce brownfields agreements.

For the state fiscal reporting year from Jul 1, 2010 through June 30, 2011 the Brownfields Property Reuse Act Implementation Account had a beginning balance of $216,913, receipts from fees and interest of $391,363, and disbursements of $300,039. This yields an ending balance in the fund of $308,237. For the previous two years, the program has had a steeply declining balance in the Implementation Account. However, the increase in fees, especially those fees from the Redevelopment Now program option, has finally reversed the trend in declining implementation fund balances. If the program receives no further federal cuts and receives consistent fee revenue, the program is now at a good balance point between revenue and resource requirements. Further significant cuts in the program's federal grant or reduced income from fees would jeopardize the program's funding and likely result in reduced program capacity. However, for now, the program's successful implementation of the Redevelopment Now program option has stabilized the program's resources.

Further Information

For additional information on the Brownfields Program and how it works, please visit our Website at **www.ncbrownfields.org**.

APPENDIX

Brownfields Program Site Summaries and Inventory of Projects as of September 30, 2010

The Project Inventory below is divided into three segments as follows:

Projects with finalized brownfields agreements have completed the public notice phase of the brownfields process and either have a signed brownfields agreement in place or are waiting for the agreement to be executed by the developer.

Active eligible projects have been deemed eligible for a brownfields agreement under BPRA statutory criteria. These developers are working with DENR in some stage of data gathering, analysis or agreement negotiation.

Projects pending eligibility are in the initial stage that sites are in as they enter the program. Sites in this category are under evaluation to determine if they meet the requirements under the statute for eligibility for a brownfields agreement.

Appendix

Brownfields Program Site Summaries of Brownfields Agreements Finalized Between October 1, 2010 through September 30, 2011

31 FINALIZED BROWNFIELDS AGREEMENTS DURING FY2011

(PD = Prospective Developer; RP = Responsible Party)

BROWNFIELDS PROPERTY	PROJECT DESCRIPTION	DATE COMPLETED
NEWMAN MACHINE Jackson St. and Lilly Ave. Greensboro, Guilford Co. PD: University Residences, LLC	The Brownfields Property consists of approximately 10.22 acres that include three (3) parcels bearing Guilford County Tax PIN numbers 7864331862 (Lot 1), 7864336768 (Lot 2) and 7864346003 (Lot 3). Respectively, the parcels' addresses are 801A Spring Garden Street, 702 Fulton Street and 507 Houston Street, Greensboro, Guilford County, North Carolina. The Brownfields Property was initially developed for residential use in the late 1800s. Newman Machine Company, a manufacturer of woodworking equipment for the pulp and paper industry, began operations at the site in 1906. That company ceased operations in 2008. Soil and groundwater contamination, believed to have resulted from past operations and activities at the Property, exist at the Brownfields Property. Prospective Developer razed all buildings at the Brownfields Property and has committed itself to redevelopment of the site for no uses other than as a multi-family apartment complex.	9/27/2011 (projected)
BOSCH TOOL CO. 310 Staton Dr. Greenville, Pitt Co. PD: JB & GB Properties, LLC	The Brownfields Property consists of 10.642 acres at 310 Staton Road, Greenville, Pitt County, North Carolina. It was developed in 1966 as a tool manufacturing facility. Groundwater contamination, including low concentrations of chlorinated solvents, from past on-site and off-site uses exists at the Brownfields Property. The site has been idle and vacant since 2008. Prospective Developer intends to redevelop the Brownfields Property as a document storage and conference facility.	9/27/2011 (projected)

BROWNFIELDS PROPERTY	PROJECT DESCRIPTION	DATE COMPLETED
MORGANTON HEIGHTS 400 Henredon Drive and 500 Hopewell Road, Morganton, Burke Co.	The Brownfields Property comprises approximately 103.675 acres on which a Henredon Furniture Industries, Inc. plant formerly operated. Prospective Developer plans to redevelop the Property as a retail shopping center with several anchor tenants, small shop space and several outparcels. Office, hotel and residential uses may be included in the future.	9/24/2011 (projected)
UNIVERSAL STAINLESS 10801 Nations Ford Road Charlotte, Mecklenburg Co. PD: ADH Properties, LLC	The Brownfields Property is located at 10801 Nations Ford Road, Charlotte, North Carolina (Tax Parcel Identification Number 20514109). It comprises approximately 8.132 acres and has been the site of a Universal Stainless, Inc. facility and other industrial operations that have included textile equipment manufacturing and metal fabrication, cutting and sewing of quilts and bedspreads, and the manufacture of batting material for bedspreads and quilts. Prospective Developer intends to redevelop the acreage for office, industrial, retail, parking and, if DENR issues prior written approval, other commercial uses. The Brownfields Property is surrounded by land in commercial and industrial use.	9/1/2011
CLARKSON STREET 1001 S. Clarkson St. and various other nearby addresses Charlotte, Mecklenburg Co.	The Brownfields Property comprises 10 parcels totaling approximately 19 acres along West Morehead Street, Cedar Street, Pitcher Street, Elliot Street, and Clarkson Street in Charlotte, Mecklenburg County, North Carolina, whose Tax Parcel Identification Numbers are 07325213, 07325207, 07325211, 07325210, 07325209, 07325601, 07325501, 07325602, 07314105 and 07314201. Through sale to a third party, Prospective Developer intends to effect redevelopment of the site for the uses specified in Land Use Restriction 1 below. Groundwater and soil vapor are contaminated at the Brownfields Property due, on information and belief, to past activities there and at surrounding properties. The Brownfields Property is surrounded by land in commercial and industrial use.	8/17/2011

BROWNFIELDS PROPERTY	PROJECT DESCRIPTION	DATE COMPLETED
DEUTSCH RELAYS 2011 Gardner Road Wilmington, New Hanover Co.	The Brownfields Property is located at 2021 Gardner Road in Wilmington, New Hanover County, North Carolina and is 1.5 acres in size. It is the former location of Deutsch Relays, Inc., which manufactured electronic relays until operations ceased and the facility demolished prior to 2002. The Prospective Developer intends to redevelop the site for industrial/commercial purposes.	8/16/2011
ECUSTA TRACT G 1 Ecusta Road Brevard, Transylvania Co.	The Brownfields Property is located at 1 Ecusta Road, Brevard, Transylvania County, North Carolina. It comprises 12.99 acres, was a part of an assemblage comprising approximately 527 acres (the "Ecusta Mill"), and has been designated "Tract G." Decades of industrial activity at the Ecusta Mill began with the manufacture of cigarette papers in the late 1930s. Tract G was farm land or undeveloped until approximately 1963; by 1978 it was used for overflow Ecusta Mill parking. Prospective Developer intends to redevelop the Brownfields Property for residential, hotel, retail and office use and any other commercial uses approved in writing by DENR in advance.	7/21/2011
ATHOL MANUFACTURING 100 22nd St; 403 E. C St; 106 20th St. Butner, Granville Co.	The Brownfields Property comprises 21.10 acres in Butner, Granville County, North Carolina and is comprised of the "Main Property" (the block that includes 100 22nd Street), the "Trim Products Property" (the block that includes 106 20th Street), and residential property at 403 East C Street. Previous uses of the Main Property include a machine shop, vehicle maintenance facility and automotive fabric production facility. Previous uses on the Trim Products Property include an automotive fabric production facility and a portion of the property once served as a bakery. The property at 403 East C Street has seen only residential use. Prospective Developer desires to sell the Property for redevelopment for the uses allowed by the Land Use Restrictions below. Environmental contamination exists on the Brownfields Property in groundwater, soil, soil gas and indoor air at concentrations precluding unrestricted use.	7/20/2011

BROWNFIELDS PROPERTY	PROJECT DESCRIPTION	DATE COMPLETED
SOUTH END TRANSIT DISTRICT Various Dunavant and Hawkins Street, South Boulevard and Remount Road Addresses Charlotte, Mecklenburg Co.	The Brownfields Property consists of parcels comprising approximately 22.41 acres in Charlotte, Mecklenburg County, North Carolina with the following addresses: 2205, 2303, 2309, 2321, 2401, 2405, 2415/2418 and 2517 Dunavant Street; 2235 Hawkins Street; 2300, 2316, 2400, 2500 and 2508/2522 South Boulevard; and 140 Remount Road. The parcels have been in use since as early as the late 1930s for residential and various commercial, retail and light industrial uses. Soil and groundwater contamination exist on the Brownfields Property as a result of these past uses. Prospective Developer intends to redevelop the Brownfields Property for mixed commercial, high density residential and recreational use, with associated parking and landscaped areas.	7/8/2011
BASF FACILITY 4330 Chesapeake Drive, Charlotte, Mecklenburg Co.	The Brownfields Property, whose Tax Parcel Identification Number is 03909102, is located at 4330 Chesapeake Drive, Charlotte, Mecklenburg County, North Carolina. The parcel comprises approximately 12.8614 acres and is the site of a former BASF Corporation facility. Prospective Developer intends to effect redevelopment of the Brownfields Property for industrial, laboratory and office uses. Groundwater and soil are contaminated at the Brownfields Property due, on information and belief, to past activities at and around the site.	6/15/2011
BROOKFORD STREET 9900 Brookford Street Charlotte, Mecklenburg Co.	The Brownfields Property is located at 9900 Brookford Street, Charlotte, North Carolina (Tax Parcel Identification Number 2031022). That parcel comprises approximately 10.84 acres and is the site of a former Alcan Aluminum Corporation operation. Prospective Developer intends to sell it for industrial and, if DENR issues prior written approval, other commercial redevelopment. Limited sampling and analysis of groundwater at the site has indicated exceedances of applicable maximum contaminant values. The Brownfields Property is surrounded by land in commercial and industrial use.	6/3/2011

BROWNFIELDS PROPERTY	PROJECT DESCRIPTION	DATE COMPLETED
SPATCO (Southern Pump & Tank Co.) 1680 Lowery Street Winston-Salem, Forsyth Co.	The Brownfields Property comprises approximately 2.97 acres and is located at 1680 Lowery Street in Winston-Salem, Forsyth County, North Carolina. Decades of commercial use of the property have resulted in soil and groundwater contamination. The Prospective Developer desires to sell the subject property for industrial and commercial use, with associated office space.	5/25/2011
PROCTOR PROPERTY 4084 N. Hwy 186 Seaboard, Northampton Co.	The Brownfields Property comprises 7.10 acres and is located at 4084 N.C. Highway 186, Seaport, Northampton County, North Carolina. Prospective Developer proposes to redevelop this former site of an agricultural chemical storage, mixing and distribution facility for the purpose of manufacturing biofuel from soy bean oil.	5/5/2011
CONTEMPORARY ART MUSEUM 409 West Martin Street Raleigh, Wake Co.	The Brownfields Property consists of 0.56 acres located at 409 West Martin Street in Raleigh, Wake County, North Carolina. It was in use for various commercial purposes, including produce distribution, metal plating and paint formulation and distribution, from the late 1920s until 1996, as a result of which soil and groundwater are contaminated at the site. The Brownfields Property has been vacant since 1997. Prospective Developer intends to initially redevelop the site as an art museum; potential additional future uses include residential, industrial and, with prior DENR approval, other commercial uses.	4/20/2011
AUSTIN FOODS East Chatham St. Cary, Wake Co.	The Brownfields Property is located at 0 East Chatham Street, Cary, Wake County, North Carolina and comprises approximately two acres. The Prospective Developer plans to redevelop the site for office, industrial, warehousing and possibly other commercial purposes. Environmental contamination exists on the Brownfields Property in groundwater, soil and indoor air at concentrations precluding unrestricted use.	3/18/2011

BROWNFIELDS PROPERTY	PROJECT DESCRIPTION	DATE COMPLETED
PIEDMONT TRIAD RESEARCH PARK – SOUTHERN DISTRICT Various Addresses south of I-40 Business Winston-Salem, Forsyth Co.	The Brownfields Property consists of 40.637 acres in Winston-Salem, Forsyth County, North Carolina and is bordered by U.S. Interstate 40 "Business," Stadium Drive, U.S. Highway 52 and Salem Avenue. It has been developed for more than 100 years and has been put to various uses, including bulk oil distribution, lumber and building materials storage, ready-mix concrete plant, furniture manufacturing, warehousing, fire extinguisher sales, linen-washing service, electrical component assembly, food and beverage distribution, vehicle parking, ceramic tile sales and service, and single-family residences. Soil and groundwater contamination exist at the Brownfields Property as a result of historical operations conducted there. In conjunction with the development of the planned Piedmont Triad Research Park, PTRP Holdings, LLC intends to redevelop the site for one or more of the following uses: bio-technology research facilities, office, retail outlets, public open areas, high-density residential, performance/concert hall, hotel, community centers, swimming pool, vehicle parking and schools.	2/17/2011
RADIATOR SPECIALTY Wilkinson Blvd. & Suttle St. Charlotte, Mecklenburg Co.	The Brownfields Property includes six (6) parcels, comprising approximately 27 acres of the former Radiator Specialty Facility, in Charlotte, Mecklenburg County, North Carolina, which Prospective Developer plans to redevelop for no uses other than mixed residential, commercial, office, retail, medical, institutional and school purposes.	2/11/2011
GARCO 2242 Carl Drive Asheboro, Randolph Co. .	The Brownfields Property is located at 2242 Carl Drive, Asheboro, Randolph County, North Carolina. It comprises approximately 12 acres and was formerly the site of a Klaussner Furniture Industries, Inc. assembly plant. Prospective Developer intends to use the Brownfields Property for commercial and industrial environmental services that include non-hazardous waste management and recycling operations, among which may be waste-to-energy operations. The site is adjacent to property containing a groundwater contamination plume believed to extend onto the Brownfield property.	2/03/2011

BROWNFIELDS PROPERTY	PROJECT DESCRIPTION	DATE COMPLETED
SWIFT ADHESIVES 9724 Industrial Drive Pineville, Mecklenburg Co.	The Brownfields Property comprises approximately 5.4 acres and is located at 9724 Industrial Drive in Pineville, Mecklenburg County, North Carolina. The site has historically been used for the manufacture of adhesive products. Prospective Developer intends to sell it for commercial and industrial redevelopment, as more particularly described in Land Use Restriction 1 below. The Brownfields Property's groundwater, soil and sub-slab vapor are contaminated.	1/29/2011
MITCHELL'S FORMAL WEAR 115-145 Scaleybark Road Charlotte, Mecklenburg Co.	The Brownfields Property is located at 115-145 Scaleybark Road in Charlotte, Mecklenburg County, North Carolina. The affected parcels are, for tax purposes, #14905468B and a portion of #14905468A. Redevelopment of the site in conformance with the Land Use Restrictions below is planned. Groundwater and soil are contaminated at the Brownfields Property due, on information and belief, to dry-cleaning conducted by former occupant Mitchell's Formal Wear. In 2002, the site was certified for entry into DENR's Dry-Cleaning Solvent Clean-up Act Program and assigned number 060-005.	12/30/2010
DEAL MOTORS 136 Merrimon Avenue Asheville, Buncombe Co.	The Brownfields Property is located at 136 Merrimon Avenue in Asheville, Buncombe County, North Carolina. It comprises 4.618 acres and is now idle, though it has had various occupants since the 1890s, (including, from 1969-2007, Deal Motors). Most recently a discount furniture store occupied Deal Motors' former showroom. Prospective Developer intends to redevelop the Brownfields Property for grocery store and other retail use, and for entertainment venues, offices and contiguous parking areas and service drives.	12/20/2010

BROWNFIELDS PROPERTY	PROJECT DESCRIPTION	DATE COMPLETED
BURKE MILLS 191 Sterling Street Valdese, Burke Co.	The Brownfields Property is located at 191 Sterling Street in Valdese, Burke County, North Carolina. It comprises 30.43 acres. There, from 1948 to 2008, first Burkyarns Inc., then Burke Mills, Inc., manufactured, processed and dyed yarns for use in home furnishings and automobile upholstery. Prospective Developer intends to redevelop the Brownfields Property for offices, warehousing, industrial and possibly other commercial uses, with associated driveways and parking.	12/9/2010
HUTCHINSON SHOPPING CENTER 2030 North Graham Street Charlotte, Mecklenburg Co.	The Brownfields Property is located at 2030 North Graham Street, Charlotte, North Carolina. The parcel is currently the site of Hutchinson Shopping Center, which has approximately 15 tenants and contaminated soil and groundwater. The surrounding area is in commercial and industrial use. Prospective Developer plans to redevelop the Brownfields Property for residential use.	12/1/2010
BAXTER OIL, FORMER 619 Spartanburg Hwy Hendersonville, Henderson Co.	The Brownfields Property is located at 619 Spartanburg Highway in Hendersonville, Henderson County, North Carolina. It comprises 0.21 acres. Among past activities on the Brownfields Property were the operations, from 1970-75, of a bulk fuel oil facility known as "Baxter Oil," and since then a series of restaurants and retail operations The Property is currently vacant. Prospective Developer intends to sell the Brownfields Property for retail, office and, with prior written DENR approval, other commercial redevelopment, along with associated parking.	12/1/2010
ASHEVILLE ICE PLANT 90 and 9999 Riverside Drive Asheville, Buncombe Co.	The Brownfields Property is located at 90 and 9999 Riverside Drive, Asheville, Buncombe County, North Carolina. An ice production plant, with trucking operations and a fuel station, previously operated there. Prospective Developer may reuse the Property as set forth in Land Use Restriction 1 below.	11/23/2010

BROWNFIELDS PROPERTY	PROJECT DESCRIPTION	DATE COMPLETED
CHARLOTTE CHEMICAL LABORATORY 1112 and 1200 South Boulevard Charlotte, Mecklenburg Co.	The Brownfields Property is a 3.1688-acre parcel in downtown Charlotte, Mecklenburg County, North Carolina, generally bounded by South Boulevard, East Carson Boulevard and the City of Charlotte's light rail line. The former Charlotte Chemical Laboratory, an oil storage warehouse, a dye house, a gas station and small residences and retail office buildings formerly occupied the site. Currently the Brownfields Property is used by the City of Charlotte's light rail line; a vacant two-story residence and retail lighting store also are present. Chlorinated solvents, petroleum fuels, and various metals have been detected in the Brownfields Property's groundwater and soil. Prospective Developer plans to use the Brownfields Property for multi-story high-density residential purposes, hotel, office, retail and other purposes approved below and, with prior DENR approval, other commercial purposes.	11/23/2010
WEST PHARMACEUTICAL 2525 Rouse Road Kinston, Lenoir Co.	The Brownfields Property is located at 2525 Rouse Road in Kinston, Lenoir County, North Carolina, and is 26.5 acres in size. It is the former location of West Pharmaceutical Services, Inc., which manufactured rubber components of various medical supplies there until its facility was destroyed in 2003 by an explosion. Prospective Developer intends to incorporate the Brownfields Property into its larger facility that seeks to stimulate economic growth and job creation in the region by providing a desirable location for commercial and industrial development.	11/23/2010
CHARLOTTE ARMY MISSILE PLANT 1830 Statesville Ave. Charlotte, Mecklenburg Co.	The Brownfields Property is located at 1830 Statesville Avenue, Charlotte, North Carolina. It also has the three addresses 1011, 1013 and 1101 Woodward Avenue. The Brownfields Property is part of a tract where Charlotte Army Missile Plant operated from 1941 through 1967. The parcels are surrounded by land in industrial, commercial and retail use. Soil, groundwater and soil gas on the property are contaminated. Prospective Developer's plans for the property include industrial use in the short term and residential (as well as commercial if DENR approves) use in the long term.	11/1/2010

BROWNFIELDS PROPERTY	PROJECT DESCRIPTION	DATE COMPLETED
DOUBLE OAKS APARTMENTS 2623 Double Oaks Road & 2542 Horne Drive Charlotte, Mecklenburg Co.	The Brownfields Property is located at 2623 Double Oaks Road and 2542 Horne Drive, Charlotte, Mecklenburg County, North Carolina; it includes 14 parcels comprising approximately 61.267 acres. Prospective Developer plans to redevelop it for no other use than those allowed by Land Use Restriction 1 below. The Brownfields Property has been in residential and commercial use since being developed in the 1950s, and is surrounded by land in commercial, retail and green space (formerly landfill) use. The Brownfields Property's groundwater is contaminated.	10/27/2010
WATER'S OIL 697 Highway 17 So. Washington, Beaufort Co.	The Brownfields Property is located at 697 Highway 17 South in Washington, Beaufort County, North Carolina, and comprises 5.94 acres. It consists of two (2) adjacent tracts formerly owned by Timothy G. Forrest and Julian D. Moore, respectively. The former has previously been used for various commercial and retail purposes. The latter is the former location of Waters Oil, a petroleum bulk storage distribution and unloading business. The Prospective Developer plans to redevelop the Brownfields Property for use as a marina. Soil and groundwater at the site are contaminated with constituents of petroleum products previously stored there.	10/27/2010
330 WEST TREMONT West Tremont Ave. Charlotte, Mecklenburg Co.	The Brownfields Property comprises approximately 2.18 acres in downtown Charlotte, Mecklenburg County, North Carolina that lie on the north side of West Tremont Avenue approximately 300 feet east of its intersection with South Tryon Street (N.C. Highway 49). The land is zoned for mixed use as part of a transit-oriented district and is part of property recently occupied by a retail supplier of construction materials and a national pest-control company. It is currently occupied by a dog training/pet grooming operation. Pesticides have been detected in the Brownfields Property's groundwater and soil. Prospective Developer plans to redevelop the site for multi-story high-density residential use.	10/4/2010

FINALIZED BROWNFIELDS AGREEMENTS
PRIOR TO October 1, 2010 (173)

(PD = Prospective Developer; RP = Responsible Party)

301 FAYETTEVILLE STREET 301 Fayetteville Street Raleigh, Wake Co. PD: Highwoods Properties	The property consists of 0.833-acres with former retail uses, including two "cleaning" establishments. The PD intends to redevelop the property into a 33-story structure for retail, office, banking/financial services, parking, and multi-family residential use.
A GREAT ESCAPE 1806 Funtime Blvd. Winston-Salem, Forsyth County PD: A Great Escape LLC	Prospective developer wants to purchase this approximately 5-acre abandoned amusement park (miniature golf and go-cart track), which is located on edge of a former municipal landfill. PD wants torefurbish it and re-open it with same use.
ABBOTT LABORATORIES 16900 Aberdeen Road Laurinburg, Scotland Co. PD: Marketta, LLC and QualPak, LLC	The Brownfields Property is 50.75 acres in size. Abbott Laboratories, Inc. formerly manufactured medical devices (e.g., anesthesia kits and specialty intravenous injection sets) at the Brownfields Property. Prospective Developer plans to use the Brownfields Property for industrial purposes, including light and heavy manufacturing. Currently an affiliate of Prospective Developer manufactures topical antimicrobial products there. Soil and groundwater at the site are contaminated with constituents of petroleum products and chlorinated solvents previously used at the site.
ABC ENGRAVERS 724 Montana Drive Charlotte, Mecklenburg Co. PD: Holden Business Park, LLC	Former engraving and plating facility with known chromium and chlorinated solvent contamination in soil and groundwater. PD intends to redevelop the site as an office complex.
AIRPORT EXXON 3305 North Liberty St. Winston-Salem, Forsyth Co. PD: Mrs. Becky Flowers	The Property consists of 0.56 acres and was first developed in 1989. The site has previously been used as an auto repair facility, a retail tire store and most recently as a small engine repair facility. Soil and groundwater contamination exists at the Brownfields Property as a result of past operations conducted there. Prospective Developer has redeveloped the Brownfields Property as a convenience store/gas station.
ALAMAC AMERICAN 1885 Alamac Road Lumberton, Robeson Co. PD: Alamac American Knits, LLC	The former knit textile manufacturing facility has perchloroethylene contamination associated with former drycleaning operations. The PD is using the facility to also manufacture knit textiles, but does not use perchloroethylene on the premises.

ALAMAC KNIT FABRIC NC Hwy 125 Hamilton, Martin Co. PD: Penco Products, Inc.	106-acre former textile manufacturing facility with known soil and groundwater contamination involving chlorinated solvents. Site is undergoing active remediation under NC DWQ. Intended reuse is as a non-polluting school locker manufacturing facility that will employ some 350 workers.
ALCAN PACKAGING FOOD 1600 Westinghouse Blvd. Charlotte, Mecklenburg County PD: Alcan Packaging Food & Tobacco	Approximately 9-acre parcel in an industrial portion of Charlotte. The soil and groundwater are impacted from historic operations with n-propyl acetate and n-propyl alcohol. The PD intends to sell the property for redevelopment of industrial and commercial uses.
ALLISON MANUFACTURING 930 Old Charlotte Road Albemarle, Stanly County PD: NCSC Properties, LLC	The Brownfields Property is located at 930 Old Charlotte Road, Albemarle, Stanly County, North Carolina. It comprises approximately 18.93 acres and contains a manufacturing structure of approximately 128,600 square feet. Prospective Developer intends to effect redevelopment of the property for office, light manufacturing and, if DENR issues prior written approval, other commercial purposes. The Brownfields Property's groundwater and soil are contaminated.
ALMONT SHIPPING – NEW Hanover & Cowan Streets Wilmington, New Hanover Co. PD: Riverfront Holdings, LLC	The Property is comprised of 23.37 acres on the east bank of the Northeast Cape Fear River. The Property is a part of the former Almont Shipping terminal property, which was used from 1870 until 2005 primarily as a shipping terminal. Contamination at the property resulted from the storage of numerous commodities on the site. Part of the southern part of the former shipping terminal site was also used for bulk petroleum storage between 1893 and 1898. The property will be redeveloped for mixed-use, which may include high-density residential, marina, hotel, office, retail, performance/concert hall, meeting/convention facility, open space/outdoor recreation and related automobile parking.
ALPHA MILLS 312 E. 12th Street Charlotte, Mecklenburg Co. PD: Crosland, Inc.	A 5.77-acre parcel that was historically a textile mill. Most recently the site was the former Consolidated Group Incorporated engraving facility. The site has known soil, groundwater, surface water, and sediment impacts from historical site operations. PD intends to redevelop the property for residential apartments with compatible commercial and retail development.
AMERICAN CYANAMID 2200 Donald Ross Road Charlotte, Mecklenburg Co. PD: DRR of the Carolinas, LLC	The property has been vacant since approximately 1975, prior to which it operated as a resin and textile manufacturing company. The PD intends to redevelop the 4.1-acre parcel into parking for trailers, cars, and commercial vehicles and, in the future, to commercial and light industrial facilities.

ANCHOR MILL 404 Church Street Huntersville, Mecklenburg Co. PD: Town of Huntersville	Abandoned textile manufacturing facility with known metals contamination in soil; and lead, chlorinated solvent, and petroleum hydrocarbon contamination in groundwater. PD intends to redevelop the 32-acre site as a mixed-use transit village that reuses the old mill building and adds new office, retail, and residential components.
ANDREX INDUSTRIES 180 Deaverview Road Asheville, Buncombe Co. PD: Milkco, Inc.	A 9-acre light manufacturing site formerly used as a textile production facility that operated a knitting, weaving and cutting business along with dry cleaning, shrinking and packaging of fabrics. Tetrachloroethylene groundwater contamination from drycleaning operations being remediated by RP with pump-and-treat system. PD is adjacent property owner, a milk processing and distributing plant. Initial plan is to use part of property for truck and trailer parking. Within 3 years they plan to demolish Andrex buildings and expand the Milkco Plant to double capacity within eight years.
ARCHDALE MARKETPLACE 5801 South Boulevard Charlotte, Mecklenburg Co. PD: Eastbourne Investments, Ltd.	Approximately 13-acre parcel known as Archdale Marketplace Shopping Center. Groundwater is contaminated at the property due to historical site operations by an A&P grocery store, Sno-White Cleaners, and K-mart auto service center. PD intends to redevelop the property for commercial and retail use.
ARROW LAUNDRY & CLEANERS 4735 Monroe Road Charlotte, Mecklenburg County PD: Lake City Tractor Supply	The Brownfields Property consists of approximately 16.5 acres and comprises eight parcels at four addresses. The Brownfields Property is surrounded by land in commercial and residential use. Groundwater under portions of the Brownfields Property is contaminated. The businesses that formerly operated on the Brownfields Property included a textile manufacturing plant, a service station and a drycleaner. Prospective Developer plans to redevelop the Brownfields Property for commercial, retail, residential, office and open space use.

ARROW LAUNDRY II 1933 E. 7th St. & 1928 E. 8th St. Charlotte, Mecklenburg Co. The Conformity Corporation	The Brownfields Property is located at 1933 East 7th Street in Charlotte, Mecklenburg County, North Carolina. It is surrounded by land in commercial, retail, and residential uses. The former Arrow Laundry and Cleaners, Inc. operated on the Brownfields Property for approximately 42 years, beginning in 1964. Soil on the property is contaminated. Prospective Developer's redevelopment plans for the Brownfields Property include residential and certain commercial uses.
ASHEVILLE MICA 75 Thompson Street Asheville, Buncombe County PD: T. R. Enterprises	The former mica plant consists of four existing structures and approximately 3.0-acres. It has both soil and groundwater contamination from an on-site aboveground storage tank and possible off-site sources. The PD has committed itself to redevelopment for no uses other than residential, retail, office, common space, parking, pet park, and greenway purposes.
ATS MANUFACTURING FACILITY Hwy 321 & Rankin Lake Rd Gastonia, Gaston Co. PD: WDL Holdings, LLC	Past uses at the 6.65-acre property have included knitting operations, a furniture store, and remanufacturing of rear wheel drive transmissions. Groundwater is contaminated at the site with chlorinated solvents. The PD intends to remove the existing structures, an unoccupied single-story manufacturing building and residence, and redevelop the Brownfields Property for a mix of retail and other commercial uses.
AVERY DENNISON CORP 2305 Soabar Street Greensboro, Guilford Co. PD: Soabar Street, LLC	The subject property consists of an 86,000 square-foot industrial facility located near the center of an 11.83-acre land parcel in a commercial/industrial area of Greensboro between Soabar Street to the west and West Meadowview Road to the south. The abandoned facility formerly housed tag and label manufacturing operations and also contained warehouse and office space. Prospective Developer Soabar Street, LLC, intends to lease the subject property for warehousing, order fulfillment, distribution and associated support uses.
BALDOR ELECTRIC 3821 Barringer Drive Charlotte, Mecklenburg Co. PD: K. Brown Trust	Former electric motor and motor component assembly and manufacturing facility with solvent-impacted soil and groundwater. PD intends to redevelop the property for use as industrial condominiums.
BENDIX HEAVY VEHICLE FACILITY 727 Bendix Drive Salisbury, Rowan Co. PD: DDSM Properties, LLC	The property consists of 20.96 acres and was first developed in 1961 by the Bendix Corporation ("Bendix"), which manufactured compressors, valves and accessory components for heavy vehicle air braking systems until 1990. Subsequent site uses have included metal fabrication and, currently, boat sales, storage and maintenance. Soil and groundwater contamination are present at the site. Prospective Developer intends to redevelop the Brownfields Property for manufacturing, warehousing, distribution, office and, with prior written

	DENR approval, other commercial uses.
BLOCK 46 1101 D St. & 110 Wilkesboro North Wilkesboro, Wilkes Co. PD: Shepherd Real Estate, LLC	The Brownfields Property is located at 1101 D Street and 110 Wilkesboro Boulevard in North Wilkesboro, Wilkes County, North Carolina. It comprises 29.331 acres and is the former site of a furniture manufacturing facility. Prospective Developer intends to redevelop the Brownfields Property for retail, office, medical facility, higher education, government, residential, roadway and parking purposes, light manufacturing, and other commercial purposes with prior written DENR approval.
BLUE RIDGE BROADCASTING 1049 HWY US 70 Black Mountain, Buncombe Co. PD: Ingles Markets, Inc.	The Brownfields Property comprises 45.5 acres in Black Mountain, Buncombe County, North Carolina. Prospective Developer has committed itself to redevelopment of the Brownfields Property for no uses other than as a frozen, refrigerated and dry goods distribution center with offices, associated driveways and parking. The Brownfields Property's soil and groundwater are contaminated, due, on information and belief, to the site's prior use as a private airport and maintenance hangar, as well as the possible migration of groundwater contamination from off-site.
BOULIGNY SITE 2320 N. Davidson Street Charlotte, Mecklenburg Co. PD: NODA Properties, LLC	Approximately 3.5-acre parcel that was the former R.H Boulingy facility. The site has known groundwater impacts from chlorinated solvents. PD intends to redevelop the property for mixed-use development with commercial, retail, industrial and residential uses.
BROMMA PROPERTY II 2285 Durham Road Roxboro, person Co. PD: Daniel Talbert, Sr.	The Brownfields Property is located at 2285 Durham Road, Roxboro, Person County, North Carolina, and is approximately 11.6 acres in size. Prospective Developer has committed himself to redevelopment of the Brownfields Property for no uses other than retail and commercial businesses, including restaurants and warehousing/distribution firms, and medical and other office space. The Brownfields Property was developed in the late 1950s by an entity that manufactured plastic crates and steel products. Bromma, Inc. purchased the Brownfields Property in 1992 and manufactured cargo spreaders (large metal clasps used to load and unload cargo ships) there until May 11, 2004.
BROWN'S SOLVENT CO. 2935 Griffith Street Charlotte, Mecklenburg Co. PD: Estate of K. C. Bell	Former paint and solvent formulation facility with known solvent-impacted soil and groundwater. PD intends to initially renovate & reuse the existing structure for office/warehouse use, and ultimately raze the building and redevelop the site as a mixed office/retail complex in keeping with other redevelopment taking place in Charlotte's South End.
BROYHILL FURNITURE 409 4TH Street	The Brownfields Property is located at 409 4th Street Place SE in Conover, Catawba County, North Carolina. It

Conover, Catawba Co. PD: City of Conover	comprises 26.45 acres and is the former site of a furniture manufacturing facility. Prospective Developer intends to redevelop the Brownfields Property for residential, retail (and, if DENR issues prior written approval, other commercial), transit depot, office, open space, roadway and parking use.
BURKHART CAROLINA 1703 Dabney Drive Henderson, Vance Co. PD: MPP Properties, Inc.	Former pickle processing and packing facility with chloride-impacted soil and groundwater and minor solvent contamination in groundwater. PD intends to redevelop the property for commercial retail use. Simultaneously, the responsible party will implement groundwater remediation at the site under separate action. The PD's development will provide an impervious cap on the site, further assisting remedial efforts.
BURLINGTON – JAMESTOWN 6008 High Point Road Jamestown, Guilford Co. PD: Alberdingk Boley, Inc.	A 22-acre site containing an abandoned chemical formulation facility operated in support of Burlington Industries textile manufacturing operations. Known chlorinated and petroleum hydrocarbon contamination exists in site soil and groundwater and is being addressed under a consent order with DENR. PD intends to redevelop the property as polyurethane and polyacrylate emulsions manufacturing facility.
BURLINGTON MILLS 476 S. Main Street Mooresville, Iredell Co. PD: Cherokee Investment Partners, LLC	Abandoned textile manufacturing facility with known petroleum hydrocarbon contamination in soil and groundwater, and chlorinated solvent contamination in groundwater. PD intends to redevelop the site as an auto racing industry complex with office, flex, shop, and R&D space.
BUSS COATING 511 Creekside Drive Lenoir, Caldwell County PD: SALT Investments, LLC and S&S Holdings of Lenoir, LLC	The Brownfields Property comprises 4.52 acres in Lenoir, Caldwell County, North Carolina. PD has committed itself to redevelopment of the Brownfields Property for manufacturing, office, warehousing and, with prior written DENR approval, other commercial purposes. The Brownfields Property's groundwater is contaminated due, on information and belief, to pollution emanating from the adjoining Buss Coatings property.
C. C. DICKSON 1520 South Boulevard Charlotte, Mecklenburg Co. PD: C. K. Land Development	A large mixed use development on a former industrial services firm adjacent to a manufactured gas plant. Ground floor retail and studio with office and residential units above. Project is in vicinity of Camden Square and provides redevelopment to economically depressed area. Capping and land use restrictions regarding PAHs in soil and chlorinated solvents in soil and groundwater.

CAL-TONE PAINTS FACILITY 5115 New Bern Avenue Raleigh, Wake Co. PD: Arbor New Bern Avenue, LLC	Soil and groundwater on this 2.75-acre site are contaminated with metals and petroleum constituents. Prior uses include agricultural, and more recently, paint manufacturing. The PD is planning a mixed-use redevelopment including commercial, industrial, and residential.
CAMDEN ROAD 1600 Camden Road Charlotte, Mecklenburg Co. PD: Harris Murr & Vermillion, LLC	Approximately 0.25-acre parcel in Historic South End of Charlotte. The site has known groundwater impacts from historical site operations as a gas station, tire repair, plumbing repair, and other uses. PD intends to redevelop the property for commercial and retail purposes.
CAMDEN SQUARE 127 W. Worthington Avenue Charlotte, Mecklenburg Co. PD: Camden Square Associates	Abandoned Knitting and Printing Operations rebuilt into the "Design Center of the Carolinas". Development supported by the Wilmore Community as a vital redevelopment in an economically depressed area. Land Use restrictions for chlorinated solvents in groundwater.
CAMDEN SQUARE ADDITION 307 W. Worthington Avenue Charlotte, Mecklenburg Co. PD: Camden Square Associates	This project will add, by amendment, 4.5 acres to the first brownfields agreement completed in North Carolina, Camden Square, in Charlotte's South End redevelopment corridor. Contamination includes VOC- and SVOC-impacted soil and groundwater. Intended reuse is for mixed office and retail.
CAMDEN SQUARE AMENDMENT W. Worthington Avenue Charlotte, Mecklenburg Co. PD: Camden Square Associates	By amending the Brownfields Agreement, this project served to add residential to the uses approved under the Agreement for a portion of the property. Prospective Developer conducted additional environmental assessment to evaluate the potential for vapor intrusion in the area of planned residential use, and will install a vapor barrier beneath the slab-on-grade construction.
CANAC KITCHENS 401, 403, 603, 607 Meacham Rd; and 2001 Speedball Rd., Statesville, Iredell Co. PD: Canac Kitchens U.S. Limited	The Brownfields Property comprises 28 acres in Statesville, Iredell County, North Carolina. Prospective Developer has been operating a cabinetry manufacturing facility there and intends to sell the property for redevelopment consistent with manufacturing or office uses. The Brownfields Property's soil and groundwater are contaminated, due, on information and belief, to the site's prior use as a furniture manufacturing facility.

CANNON VILLAGE 1 Lake Circle Drive Kannapolis, Cabarrus Co. PD: Castle & Cooke Kannapolis, LLC	The property consists of the approximately 154 acres and was first developed in the early 1900s as Cannon Mills, a textile manufacturing facility around which eventually grew the City of Kannapolis. The Brownfields Property's groundwater and soil are contaminated, chiefly as a result of past textile operations. Prospective Developer has committed itself to redevelopment of the Property as the "North Carolina Research Campus," a health and nutrition research campus that will encompass office and laboratory space, a math and science high school, retail shops, a hotel and conference center, restaurants, potential residences, walking trails, bike paths and green space.
CAROLINA COVE 111 Lakeside Terrace Drive Greenville, Pitt Co. PD: Bradley Greenville, LLC	The Brownfields Property consists of one parcel comprising 9.02 acres. Its improvements, the Lakeview Terrace Apartments (14 buildings containing approximately 100 units), as well as parking areas and associated landscaping, were constructed in approximately 1972. Groundwater is contaminated due, on information and belief, to an off-site dry cleaner. Prospective Developer intends to renovate the structures for affordable housing.
CAROLINA LOG BUILDINGS Howard Gap Road Fletcher, Henderson Co. PD: Town of Fletcher	Former wood treating facility with known pentachlorophenol contamination in soil and groundwater. PD intends to redevelop the 30-acre site as the new heart of the Town of Fletcher to include various office and retail uses.
CAROLINA PRODUCTION FINISHING 105 Fairview Road Asheville, Buncombe Co. PD: Western Investments Co.	Former textile finishing facility with metals contamination in both soil and groundwater. PD intends to redevelop the site for warehousing and as a sewing operation. PD is in the process of reviewing DENR's draft brownfields agreement for this site.
CEDAR CREEK 3468 Cedar Creek Road Fayetteville, Cumberland Co. PD: DAK Resins, LLC	The Brownfields Property is located at 3468 Cedar Creek Road, Fayetteville, Cumberland County, North Carolina, and comprises approximately 171.82 acres in size. It is the site of a former herbicide manufacturing facility that was operated by Monsanto Chemical Company. The Prospective Developer plans to redevelop the site for use as a transloading facility for polyester resin and a railcar storage site. The Prospective Developer also plans, through a joint venture, to construct and operate a plastic bottle recycling center and dedicate a highway right of way. It is planned that steam generation and water and wastewater facilities on the Brownfields Property will continue in use. Soil and groundwater at the Brownfields Property are contaminated with metals, pesticides, chlorinated solvents, and petroleum constituents.

CELANESE DRP 2300 Archdale Avenue Charlotte, Mecklenburg County PD: Easlan Capital of Charlotte	The property consists of 120.41 acres of land originally developed by the Celanese Corporation of America in 1955 as an office, research and development facility known as "Dreyfus Research Park." Groundwater contamination is present on the Brownfields Property due, it is believed, to past activities conducted on or in the vicinity of the site. Since 1992, DENR's Inactive Hazardous Sites Branch has been overseeing environmental assessment and remedial activities at the site being conducted by Celanese, and the Branch continues to oversee groundwater cleanup activities there. Soil cleanup was completed at the site in 1993. Prospective Developer intends to redevelop the Brownfields Property for high-density, multi-family residential use, including two-, three- and four-story townhouse and condominium units with slab-on-grade construction, several small parks, a pool and a recreational facility.
CENTRAL PARK LANDFILL Salem and Main Streets Winston-Salem, Forsyth Co. PD: Salem Recreational Fields	Former municipal landfill for the City of Winston-Salem. Site is 7.23 acres in size, and has been used as a city park since the 1950s. Low levels of chlorinated solvents, with no surficial soil contamination. PD intends to redevelop the site for soccer and a softball field for the adjoining Salem Academy and College so their current fields can be used for additional building space. A passive methane collection system will be installed prior to installation of the recreational fields.
CHARLOTTE TANK TRUCK Border Drive Charlotte, Mecklenburg Co. PD: WR Deal Holdings LLC	The approximately 2.23-acre site has been used as a business to repair tanker truck chassis, with groundwater contamination potentially migrating from an off-site source. The PD intends to redevelop the property for commercial purposes.
CHEROKEE OIL 925 S. Summit Avenue Charlotte, Mecklenburg Co. PD: M & J Equities, LLC	Approximately 2-acre site was formerly a non-permitted hazardous waste storage facility and the site of an EPA removal action. Known arsenic, oil & grease, and solvent contamination exists in site soil and groundwater. PD intends to redevelop the property as a nightclub and parking facility.
CHESTER STREET PROPERTY N. Chester Street Gastonia, Gaston County PD: City of Gastonia	Site contained former Carson Dry Cleaner located in the center city area of Gastonia. Property has known chlorinated solvents contamination in the soil and groundwater. PD intends to redevelop the site in commercial retail uses.

CHOWAN VENEER 259 Coke Avenue Edenton, Chowan Co. PD: Southern Bank & Southern Bancshares (NC)	The Brownfields Property is located at 259 and 262 Coke Avenue, Edenton, Chowan County, North Carolina and comprises approximately 12.4 acres. The Prospective Developer has committed itself to redevelopment for no uses other than residential, commercial office or commercial retail use. Chowan Veneer Company, Inc. has owned the Brownfields Property since before its January 1, 1959 incorporation, and manufactured hardwood veneers there until February or March 2005. On April 26, 2005, Chowan Veneer Company, Inc. filed for protection, in the Eastern (federal) District of North Carolina, under Chapter 7 of the U.S. Bankruptcy Code. The site is currently vacant. The groundwater is contaminated with petroleum constituents.
CITY WEST COMMONS 1506 West Boulevard Charlotte, Mecklenburg Co. PD: CMDC Westover No. 1, LLC	Dilapidated shopping center seized in a drug raid by the U.S. Dept. of Justice that has been approved for transfer to the city of Charlotte. Site had VOC and chlorinated solvent contamination in soil and groundwater. The city intends to transfer the property to a not-for-profit development corporation to redevelop the site as commercial retail shopping facility.
COLE ORCHARD Interstate 26 & Highway 25 Hendersonville, Henderson Co. PD: Summit Springs, LLC	The Brownfields Property comprises 55.36 acres in Hendersonville, Henderson County, North Carolina. Prospective Developer has committed itself to redevelopment of the Brownfields Property for no uses other than a residential, office, hospitality, park open space, retail and, with prior written DENR approval, other commercial use project, with associated driveways and parking. The Brownfields Property's soil and groundwater are contaminated, due, on information and belief, to the site's prior use as an apple orchard.
COLOR WORKS II 3008 & 3010 Executive Dr. Greensboro, Guilford Co. PD: Matlab, Inc.	The Brownfields Property comprises approximately 4.35 acres and is located at 3008 and 3010 Executive Drive, Greensboro, Guilford County, North Carolina. It was first developed in approximately 1970 and has been occupied by Piedmont Optical Co., a vision corrections device and equipment manufacturer; Style Knits, Inc. and Flynt Knits, Inc. both of which conducted textile dyeing and finishing operations; and The Color Works, Inc. and Accurate Coatings, both of which conducted commercial coating and decorative printing operations. The site became idle in January 2008. Groundwater contamination is present due, on information and belief, to past activities conducted on or in the vicinity of the site. Prospective Developer has committed itself to redevelopment of the Brownfields Property for no uses other than for custom painting and finishing.

CONBRACO FACILITY 701 Matthews-Mint Hill Rd Matthews, Mecklenburg County PD: Carlton Development	The site is the former sediment and runoff basin for the former Conbraco Facility. The site was remediated in the EPA Superfund Program and given a "No Further Remedial Action Planned (NFRAP)" status. PD intends to redevelop the site as a medical office with other commercial uses.
CONITRON FACILITY 3761 Old Glenola Road Trinity, Randolph Co. PD: United Furniture Industries NC, LLC	The property comprises approximately 54.8 acres and was first developed, with residential and agricultural buildings in the northeast portion, in 1966. Manufacturing commenced on the Brownfields Property in approximately 1980. Operations there have included chair, textile, mattress and boat, canoe, and kayak manufacturing. Past activities on or in the vicinity of the property have contaminated the groundwater there. Prospective Developer has redeveloped the site for furniture manufacturing, warehousing and distribution on the Brownfields Property, and plans to expand operations at the site.
COSTCO Costco Wholesale Corporation 14.8 acres 2838 Wake Forest Road Raleigh, Wake County	The former Pepsi manufacturing and bottling company was located on this site until it relocated in 2002. The southeastern portion of the property covers about 2.6 acres of a former City of Raleigh 44-acre municipal landfill. The former Alcatel site is upgradient and a potential source of chlorinated solvents found in the groundwater. Prospective Developer Has built a 149,000 ft^2 Costco membership warehouse and a membership gasoline station outparcel.
COTTON MILL SQUARE 801 Merritt Drive Greensboro, Guilford Co. PD: Carl Johnson	Former cotton mill and manufacturing facility with chlorinated solvent contamination in soil and groundwater. PD intends to redevelop the site in mixed commercial retail/office and residential.
COTTON MILL SQUARE ADDENDUM 801 Merritt Drive Greensboro, Guilford Co. PD: Carl Johnson	The Brownfields Property, also known as Cotton Mill Square, consists of 32.05 acres and is located at 801 Merritt Drive in Greensboro, Guilford County, North Carolina. The Property is bounded by Spring Garden Street on the north, the Southern Railroad on the south, Merritt Drive on the west, and a parcel in use as a salvage yard on the east. Environmental contamination known to exist on the Property in soil and groundwater is being investigated and remediated by Lucent Technologies, Inc., successor to the Western Electric Company who formerly owned the site and who operated an electronic circuit board and components manufacturing facility in the former cotton mill buildings from 1950 until 1976. Prospective Developer acquired the Property in 1981 and committed itself to mixed office, retail, and residential redevelopment on the site.

CRS Facility 1224 Isley Drive Gastonia, Gaston Co. PD: Gastonia Investments V, LLC	The Brownfields Property comprises approximately 11.53 acres and is located at 1224 Isley Drive, Gastonia, Gaston County, North Carolina. It carries Gaston County tax parcel number parcel 3536-26-0117 and was used for industrial uses. Prospective Developer has committed itself to redevelopment for no uses other than as an industrial, office, storage and possibly other commercial use.
CULTURAL ARTS CENTER 205 McDonald Street, and Old Braswell Library 344 Falls Road Rocky Mount, Nash Co. PD: Imperial Centre Partners, LP	The Property consists of two parcels: 270 Gay Street, the site of the closed Imperial Tobacco Plant, and 344 Falls Road, the site of the former Braswell Memorial Library. The redeveloped parcels comprise approximately 3.6 acres and are the site of the City of Rocky Mount Cultural Arts Center, which will lease the property from Prospective Developer. The 344 Falls Road parcel contains an art education center in the former library and a recital stage. The 270 Gay Street parcel houses a children's museum and planetarium, a traveling exhibit gallery, a live animal area, a science and technology gallery, a visual arts gallery, a recital stage, offices and a food service area. The soil and groundwater at the Brownfields Property are contaminated with petroleum constituents and metals.
CUMBERLAND SHOPPING CENTER 709 E. Market Street Greensboro, Guilford Co. PD: Project Homestead	Site of former shopping center and dry cleaners with chlorinated solvent-impacted soil and groundwater. PD is a not-for-profit community development corporation. The PD has performed soil remediation activities and intends to redevelop the site with affordable residential housing.
DAYCO FACILITY 2150 South Main Street Waynesville, Haywood County PD: Haywood Advancement Foundation	The property was formerly operated as a large industrial rubber manufacturer and has both chlorinated solvent and petroleum contamination in the soil and groundwater. The PD intends to redevelop the 35.942-acre site into a mixed commercial-retail development.
DIXIE TRUCKING 3606 N. Graham Street Charlotte, Mecklenburg Co. PD: M.H.O.C., LLC	The Property (Tax Parcel Identification Number 08508202) is located at 3606 North Graham Street, Charlotte, Mecklenburg County, North Carolina and comprises approximately 16.25 acres. It is the former site of a Dixie Trucking Company facility. Prospective Developer has committed itself to redevelopment of the Brownfields Property for no uses other than as a trucking terminal or for other industrial purposes.
DON CHRISTIAN PROPERTY Main Street Carrboro, Orange County PD: Main Street Properties	This approximately 0.5-acre underused site had been in use as a bulk oil facility and gas station since the 1920s and is currently in use as an auto repair shop. The site contains petroleum hydrocarbon impacts in soil and groundwater. PD intends to reuse the property in commercial/retail use as part of the renovation and expansion of the existing, adjoining shopping center.

DUKE POWER MGP 321 e. Friendly Ave. Greensboro, Guilford Co. PD: Weaver Foundation, Inc.	The property is a 3.9-acre portion of a former Duke Energy manufactured gas plant site. The site soil and groundwater are contaminated with coal tar constituents. Remedial activities, including excavation of contaminated soil and groundwater investigation and monitoring, have been conducted at the site by Duke Energy under the jurisdiction of the Inactive Hazardous Site Branch of DENR's Superfund Section. Prospective Developer intends to reuse the property for parking, office, nonprofit services, retail, higher education, and for high-density residential above the ground floor.
DYNATECH INDUSTRIES 2213 Toomey Avenue Charlotte, Mecklenburg Co. PD: R. G. Automation, Inc.	Former plating facility with metals-impacted soil and groundwater. EPA conducted soil removal activities at the site and has classified it as NFRAP. PD intends to redevelop the property for use as mixed office/retail complex.
EAST GANNON PROPERTY 102 East Gannon Avenue Zebulon, Wake Co. PD: Berkshire-Hudson Capital XI, LLC	This property consists of four parcels of land totaling 1.75 acres with four existing structures (former restaurant, current auto sales, auto service garage and hair salon). Site planned to be redeveloped into a stand-alone Eckerd Drug Store, with other surrounding complimentary retail tenants. Soil and groundwater are contaminated with petroleum constituents from above-ground storage tanks used by previous gas station.
EAST PARK – BOYER 1607 E. 4th Street Charlotte, Mecklenburg Co. PD: Torrence Street Partners, LLC	Approximately 0.39-acre parcel that is a portion of the East Park Development Project, with known chlorinated solvent and gasoline contamination. PD intends to redevelop the site as a pedestrian urban infill multiple-use development with commercial, residential, recreational and common open space. The site is part of the City of Charlotte's East Park re-development zone.
EAST PARK – CRAVER 1609 Elizabeth Avenue Charlotte, Mecklenburg Co. PD: Providence Road Land Partners, LLC	Approximately 0.65-acre parcel that is a portion of the East Park Development Project, with known chlorinated solvent and gasoline contamination. PD intends to redevelop the site as a pedestrian urban infill multiple use development with commercial, residential, recreational and common open space. The site is part of the City of Charlotte's East Park re-development zone.
EAST PARK – DOROTHY HALL 1423 E. 4th Street Charlotte, Mecklenburg Co. PD: 1427 East Fourth Street, LLC	Approximately 0.8-acre parcel that is a portion of the East Park Development Project, with known chlorinated solvent and gasoline contamination. PD intends to redevelop the site as a pedestrian urban infill multiple-use development with commercial, residential, recreational and common open space. The site is part of the City of Charlotte's East Park re-development zone.
EAST PARK – JOAL REALTY 1534 Elizabeth Avenue Charlotte, Mecklenburg Co.	Part of the 24-acre site encompassing a six-block area with known chlorinated solvent contamination. PD intends to redevelop the site as a model for urban infill mixed-use

PD: Joal Realty	development with an emphasis on the needs of pedestrians in an urban setting. The site is part of the City of Charlotte's East Park re-development zone located between the CBD and the historic residential neighborhoods of Elizabeth and Myers Park.
EAST PARK – KOSSOVE 1515 E. 4th Street Charlotte, Mecklenburg Co. PD: David Kossove	Part of the 24-acre site encompassing a six-block area with known chlorinated solvent contamination. PD intends to redevelop the site as a model for urban infill mixed use development with an emphasis on the needs of pedestrians in an urban setting. The site is part of the City of Charlotte's East Park re-development zone located between the CBD and the historic residential neighborhoods of Elizabeth and Myers Park.
ECUSTA 1 Ecusta Road Pisgah Forest, Transylvania Co. PD: Ecusta Business Development Centers, LLC	In its prime, this 540-acre site was the world's largest non-wood pulp and specialty paper manufacturing facility. Closed since late 2002, the site has known metals, caustic and solvent contamination. PD intends to re-start flax pulping operations and to market the pulp to paper manufacturers. PD may also undertake other uses of site buildings and facilities, including office space and possible use of excess wastewater treatment capacity by local municipalities.
ELECTRONICS COMPONENTS CORP. 513 S. Dudley Street Burgaw, Pender County PD: MoJo Properties, LLC	The approximately 5-acre site was first developed in 1966 as a facility for manufacturing small transformers. The property was idled in 1999. Site groundwater is contaminated with chlorinated solvents. Prospective Developer intends to reuse the site to manufacture sound equipment and other music-related equipment.
ELK MOUNTAIN LANDFILL Elk Mountain Road Woodfin, Buncombe Co. PD: Town of Woodfin	The property consists of approximately 156 acres of land and improvements located west of U.S. Highway 19 and approximately one mile north-northeast of downtown Woodfin, Buncombe County, North Carolina. Portions of the site were first developed in approximately 1970 as a municipal landfill. The landfill was operated by the City of Asheville, North Carolina, under a lease from the Rhodes estate, the property owner at the time. The landfill was closed in the early 1980s. Prospective Developer purchased the site in 1985 from the Rhodes estate, and, in the late 1990s, redeveloped the former landfill portion of the Brownfields Property into a 9-hole municipal golf course. The golf course was closed in 2002. Prospective Developer intends to sell the Property for redevelopment into a mixed-use residential and commercial community and, on the portion of the Brownfields Property formerly used as a municipal landfill, recreational open space, parking areas, roadways, utility corridors, ball fields, lights, walking paths and a possible golf course with associated amenities such as tennis courts and a clubhouse, or other features or structures.

ERWIN SQUARE 2211 Hillsborough Road Durham, Durham Co. PD: WP East Acquisitions, LLC	This approximately 6-acre property is a portion of a decommissioned former Burlington Industries site, other portions of which have already been redeveloped. There is known chlorinated solvent contamination in groundwater, and these impacts are being addressed under an approved Division of Water Quality corrective action plan. PD intends to redevelop the site in high-density residential use.
FERGUSON ENTERPRISES 101 W. Tremont Avenue Charlotte, Mecklenburg Co. PD: Tremont Partners, LP	The Property comprises approximately 2.88 acres and is currently the site of a warehouse and showroom operated by Ferguson Enterprises, Inc. Prospective Developer intends to effect redevelopment of the Property that will consist of a multi-story building containing luxury residential units with amenities, as well as retail, office and other commercial uses, and a parking structure. Groundwater is contaminated at the Brownfields Property due to past activities on an adjacent upgradient property known as the "Parks-Cramer Site."
FIELDCREST BLANKET MILL 206 Warehouse Street Eden, Rockingham County PD: Riverwalk Development, LLC	The Property is located along the Smith River in Eden, Rockingham County, North Carolina. It includes the sites of two former textile mills and nearby residential properties, and comprises 18.439 acres. Prospective Developer plans a mixed-use redevelopment, which may include a hotel and conference center, museum, arts and crafts studios, office space, theater, restaurants, retail space, warehousing and open public space in the form of a greenway and park along the river. The redevelopment plan also includes preservation and reuse of the historic and architecturally significant Nantucket textile mill. Groundwater at the site is contaminated with chlorinated solvents.
FISHBURNE EQUIPMENT Airport Road Arden, Buncombe Co. PD: R. & P. Van Praag	Former metal fabrication and tobacco press manufacturing facility with suspected VOC contamination in soil and groundwater, based on detection of these compounds on adjoining, downgradient property, the former Buncombe County landfill. PD intends to redevelop the site for light manufacturing/assembly, warehousing, and public storage uses.
FLEMINGTON LANDFILL US Hwy 421 North Wilmington, New Hanover Co. PD: Cape Fear Soccer Association	Site of a closed (1979), privately operated domestic and industrial solid waste landfill with VOC-impacted soil and groundwater. Intended reuse is for a soccer complex. This is the first former landfill property proposed for redevelopment under the NC brownfields statute, and the project's feasibility and technical challenges are being carefully evaluated.

FLORENCE MILL 186 Mill Street Forest City, Rutherford County PD: Florence Mill Redevelopment	Consisting of approximately 8.2 acres, the Florence (Cone) Mill is a former industrial mill that went out of business in 2001. The property also has a number of former mill warehouses that are vacant, as well as dry cleaner properties that are separate from the Cone Mill but included in Prospective Developer's submittal. Site impacts include petroleum contaminated soil and PCE impacts to site soil and groundwater. The PD intends to redevelop the property into a town hall, residences, restaurant, cinema, and pavilion with open space.
FLYNT FABRICS MILL PROPERTY 202 S. Nash Street Hillsborough, Orange County PD: Falk Companies	Former Flynt Fabrics, a textile dyeing and finishing operation, closed in late 2000. Potential, but not confirmed, contamination at the site includes asbestos, lead, peroxide, acetic acid, #5 fuel oil, dyes, salts, bleaches, cleaners, and oils. Prospective Developer desires to purchase the old mill and parking portion of the Property and redevelop it in residential use.
FONTAINE 5th WHEEL 3883 South Church Street Rocky Mount, Nash County PD: New Standard Corporation	This former metals fabrication/manufacturing facility has been vacant since 2001 and the property contains chlorinated solvent and petroleum contamination in soil and groundwater. Prospective Developer intends to reuse the three site buildings for metal stamping, fabrication and assembly operations.
FOOD LION Waughtown & Sprague Streets Winston-Salem, Forsyth Co. PD: Food Lion, Inc.	A new large supermarket placed on the site of an abandoned grocery store in urban Winston-Salem. Project had strong community support as a quality of life issue as the community had no supermarket. Land use restrictions for chlorinated solvent contamination in groundwater. Brownfield Assessment determined the source to be nearby drycleaner.
FULFLEX, INC. PROPERTY 500 E. 7th Street Scotland Neck, Halifax County PD: Town of Scotland Neck	Approximately 20-acre property contains a vacant 100,000 SF building, the site of rubber product manufacturing until 2002. Fulflex is the responsible party and is currently working with the Aquifer Protection program to remediate a petroleum and chlorinated solvent plume. The town plans to make site improvements to attract a new manufacturing tenant, who will purchase the site at a reduced rate if they bring enough jobs to the area.

GATEWAY AT OLD SALEM 1198 S. Broad Street Winston-Salem, Forsyth County PD: Southeast Gateway Ventures	Project size is approximately 51 acres. The property is planned for mixed-use redevelopment including offices, commercial/retail space, residences, a YWCA , a private school and parking. Contamination is from a former Duke Power Plant substation (PCBs, PAHs in soil) and groundwater contamination from a number of sources, mainly petroleum but with a few chlorinated solvents. Cleanup of contamination at the Duke Power facility under the Inactive Hazardous Sites Program is almost complete. The Duke Power site comprises only a portion of this large brownfields redevelopment project.
GENERAL WOOD 1901 Wood Treatment Road Leland, Brunswick County PD: Leland Land, LLC	A 120-acre utility pole treatment facility (creosote, chromated copper arsenate (CCA) and pentachlorophenol (PCP)) under Chapter 11 bankruptcy that is currently under RCRA jurisdiction. PD's intent is to be able to distinguish old from new contamination and then continue with pole treatment (CCA and PCP only). Groundwater contamination mainly associated with creosote and petroleum. Metal and PCP contamination in soil.
GLENCOE MILL 2362 River Road Burlington, Alamance Co. PD: Historic Preservation Foundation of NC	The Property comprises 7.04 acres and is located at 2362 River Road in Burlington, Alamance County, North Carolina. A textile mill operated on the Brownfields Property from 1880 until 1954, as did a hydroelectric plant from 1880 until 1996. From 1954 through the late 1990s, numerous businesses were housed in the site buildings, the most recent having been a metal salvage business and the hydroelectric plant-related business operations. The property contains an abandoned textile mill, picker house, napper house, dye house, cotton storage sheds, machine shop and textile warehouses. The site is adjacent to a historic mill village. Both the village and the mill complex are listed on the National Register of Historic Places. Contamination exists in soil, groundwater and stream sediment at the Property as a result of past site operations. Plans are to redevelop the Brownfields Property with a mix of commercial, office, light industrial, storage/warehouse, institutional and/or residential uses.

GOLDEN BELT MFG 900 E. Main & 400 E. Elm St. Durham, Durham Co. PD: Edgemont Realty, LLC	The Property consists of 5.478 acres and is located at 807 East Main Street in Durham, Durham County, North Carolina. In 1887, Golden Belt Manufacturing Co. constructed a textile mill on the Brownfields Property that consisted of at least 10 buildings in which it produced cotton bags, sheeting and hosiery. Golden Belt Manufacturing Co. operated on the Brownfields Property until 1996. Contamination exists in soil and groundwater at the site as a result, based on information and belief, of past site operations. Prospective Developer intends to redevelop the Property for mixed-use that may include office, high-density residential, retail, light manufacturing, institutional and, with prior written DENR approval, other commercial use.
GRIFFITH STREET PROPERTY 565 Griffith St. & 536 Jetton St. Davidson, Mecklenburg Co. PD: Five Six Five, LLC	Prior industrial operations resulted in soil and groundwater contamination by petroleum and VOCs. The PD plans to redevelop the facility as a charter school and as retail and commercial space.
GUILFORD MILLS W. Wendover Avenue Greensboro, Guilford Co. PD: Wendover Crossing, LLC	A 55-acre site containing former textile manufacturing facility with known VOC contamination in soil and groundwater. PD intends to redevelop the property in mixed retail uses. Public benefits include the creation of an estimated 500 jobs and substantial tax rolls increases.
GUILFORD MILLS – HORNADAY 5644 Hornaday Road Greensboro, Guilford Co. PD: Tower Investments, LLC	The Property consists of approximately 30.23 acres and is located at 5644 Hornaday Road in Greensboro, Guilford County, North Carolina. Soil and groundwater contamination exist at the site as a result of past operations conducted thereon, which included the manufacture of textiles and textile machinery. Prospective Developer intends to initially redevelop the site for light industrial uses, such as warehousing or light manufacturing, possibly followed, within three (3) to five (5) years, by mixed retail/office redevelopment (rezoning allowing).
GUILFORD MILLS - W. MARKET STREET 4925 W. Market Street Greensboro, Guilford County PD: Kim's Greensboro Real Estate, LLC	A 19.8-acre vacant textile facility with ancillary buildings. Minor groundwater contamination associated with former underground storage tanks. Other non-UST contamination has been documented but information has not yet been sent to us. PD plans to use the site for general commercial property.
HAMILTON PROPERTY 216 Dunavant Street Charlotte, Mecklenburg Co. PD: Rush Family, LLC	A small, dilapidated property bought for the expansion of Cost Effective Maintenance Inc., a small business in the South End area of Charlotte. Expansion into this property allowed CEM to stay in Charlotte instead of move to suburbs. Land use restrictions for chlorinated solvent contamination in groundwater.

HANESBRANDS THEATRE 201 N. Spruce St. Winston-Salem, Forsyth Co. PD: The Arts Council	The Brownfields Property comprises approximately 0.46 acres and is located at 201 North Spruce Street, Winston-Salem, Forsyth County, North Carolina. Its previous uses have included automotive sales, service and repair businesses, and most recently an AC Delco automotive parts and service store. Groundwater at the site is contaminated with low levels of chlorinated solvents from past activities at the site. Prospective Developer plans to redevelop the site as a multi-purpose venue that can be configured to include a 300-seat theater and associated practice rooms, classrooms and office space, and that hosts events including theater, music and dance performances, film screenings, workshops, parties, fundraisers, lectures and readings.
HILEMN LABS 3125 Spring Garden Street Greensboro, Guilford Co. PD: VIC, Inc.	The property consists of approximately 0.9 acres and was formerly used in the manufacture of mirrors from 1958 to 2004. The property improvements comprise approximately 16,000 square feet in three contiguous buildings. The original building was constructed in 1958 and saw additions added through the mid-1970s. Site groundwater and soil vapor are contaminated with chlorinated solvents from past site uses. Prospective Developer has redeveloped the site for sign manufacturing and marketing.
HILLSBOROUGH VENTURES 3011 Hillsborough Street Raleigh, Wake Co. PD: Hillsborough Ventures, LLC	Project involves redeveloping an area of parking lots and dilapidated, underused retail structures. Land use restrictions are in place for the petroleum hydrocarbon and chlorinated solvent contamination in soil and groundwater. PD intends to redevelop the property as mixed residential (private student dormitory for N.C. State University) and retail complex.
HILLSBOROUGH VENTURES ADDITION 3 Concord St, 24 McKnight Ave, 3101 Stanhope Dr Raleigh, Wake Co. PD: Hillsborough Ventures, LLC	Prospective developer added acreage to the footprint of original Hillsborough Ventures project, which involves redeveloping an area of parking lots and dilapidated, underused retail structures adjacent to N.C. State University for mixed residential (private student dormitory) and retail uses.
HISTORIC COTTON MILL 191 Riverside Drive Asheville, Buncombe Co. PD: RiverLink, Inc.	A 2.63-acre site formerly occupied by a cotton mill that operated from the 1900s but has been abandoned for many years. PD will conduct environmental assessment to determine if the site has any contamination. PD intends to redevelop the site in mixed commercial/retail and residential uses. This project is part of the Asheville French Broad Riverfront Plan.

HOME DEPOT – SOUTH BOULEVARD 4750 South Boulevard Charlotte, Mecklenburg County PD: CNR Properties, RLLLP	A 12-acre site currently occupied by a produce grocer and office rental store (1 acre), parking (7 acres), abandoned plant nursery (1 acre); the rest is undeveloped. Operations at adjacent Academy Steel Drum (ASD) from 1947-69 included the disposal of wastes and sludge from drums into pits/lagoons. The location of the lagoons and overflow drainage is suspected to have been partially on subject property. After ASD burned in 1969 the property was thoroughly re-graded with contaminated soil moved around. Elevated concentrations of lead, chromium, and PCBs in soil along with lead, 2-chlorophenol, and trichloroethene. PD plans to lease property to Home Depot for construction of a new Home Depot home improvement retail store.
HONDROS PROPERTY 9101 & 9111 Nations Ford Rd. Charlotte, Mecklenburg Co. PD: Arrowood Nations Ford Property, LLC	The property comprises approximately 16 acres. Prospective Developer intends to effect the redevelopment of the property for retail, other commercial purposes and for residential use. Groundwater and soil vapor are contaminated at the site due, on information and belief, to past activities on surrounding properties.
HUGHES SUPPLY PROPERTY 1927 S. Tryon St. Charlotte, Mecklenburg County PD: 127 Tryon Investors, LLC	The Brownfields Property is located at 1927 South Tryon Street, Charlotte, North Carolina, where Hughes Plumbing Supply, Ltd. formerly operated. It carries Mecklenburg County tax parcel number 12101204, and was used for office and warehouse purposes. The Brownfields Property is surrounded by land in commercial and industrial use. Prospective Developer's redevelopment plans for the Brownfields Property include retail and office use, with ground level use restricted to parking

INDUSTRIAL PLASTICS 4810 Clover Road Greensboro, Guilford County PD: Standard Tools & Equipment	The site comprises 17.77-acres and had a variety of industrial operations since the 1970s. The PD intends to redevelop the Brownfields Property for non-residential commercial and/or industrial uses.
KIDD LANE BATTERY DISPOSAL 3607 Kidd Lane Charlotte, Mecklenburg Co. PD: Joshua's Farm	Abandoned dairy farm with historical lead battery disposal operations. The approximately 1-acre parcel is adjacent to a 22-acre horse & animal farm area for the Joshua's Farm Operations. The site has a limited area with lead contamination in the surficial soils. PD intends to redevelop the area as a parking lot for the horse and animal farm operations.
LEARY BROTHERS STORAGE CO. 101 Virginia Road Edenton, Chowan Co. PD: Virginia Road, LLC	The Brownfields Property consists of approximately 4.2 acres and is located at 101 Virginia Road in Edenton, Chowan County, North Carolina. Among the former uses of the land are as the site of an agricultural supply and storage business, a retail florist and a warehouse for tires. Low levels of arsenic from, it is believed, releases of fertilizer compounds, have been detected in the Brownfields Property's soil and groundwater. The Brownfields Property has been idle since its structures suffered damage as a result of Hurricane Isabel in September 2003. Prospective Developer owns the Brownfields Property and plans to sell it for the purposes of redevelopment for retail, commercial and office use.
L. I. Building 449 Trollingwood Road Haw River, Alamance Co. PD: L. I. Building, LLC	The Brownfields Property is located at 449 Trollingwood Road, Haw River, Alamance County, North Carolina. Prospective Developer plans to redevelop it for industrial, sales/distribution and, with prior written DENR approval, other commercial use. The site was developed in 1967, and used from that time until 1973 as a textile knitting facility. Hose manufacturing has occurred on the Brownfields Property since 1973.
LEWITH TEXTILE 3539 Wilkinson Boulevard Charlotte, Mecklenburg Co. PD: CMDC Wilkinson No. 1, LLC	Project involves the redevelopment of 50+ acres of abandoned and underused commercial and industrial property, including the former Lewith Textile facility. Contaminants include Petroleum hydrocarbon and chlorinated solvents in soil and groundwater. PD intends to redevelop the site as an industrial park for light manufacturing and warehousing/distribution.

LOWES OF NORTH HICKORY 1430 2nd Street NE Hickory, Catawba Co. PD: Lowe's Home Centers, Inc.	The property comprises 13.818 acres, including all or portions of seventeen (17) contiguous tax parcels, in Hickory, Catawba County, North Carolina. A retail home improvement store and stormwater retention pond have been constructed at the site. Prospective Developer has committed itself to redevelopment of the Brownfields Property for no uses other than the subject retail home improvement store (or other retail or office use), with associated outside storage areas, parking areas, a stormwater detention pond, and related open landscaped areas. The Brownfields Property's soil and groundwater are contaminated, due, on information and belief, to the site's prior use for a hosiery mill that included dye operations.
MALLARD CREEK 3021 Driwood Court Charlotte, Mecklenburg Co. PD: Colonial Realty, Ltd.	A 21-acre site adjacent to former auto service station and chainsaw service center operations. Petroleum hydrocarbon and chlorinated solvent contamination in groundwater, sourced from underground and aboveground storage tanks releases on the adjacent site, has migrated onto the subject property. PD intends to redevelop the property as an apartment complex.
MERCHANDISE MART 2500 E. Independence Blvd. Charlotte, Mecklenburg Co. PD: The Park Ministries, Inc.	The Brownfields Property comprises approximately 34 acres and is located at 2500 Independence Boulevard (the surrounding streets are East Independence Boulevard, Colonnade Drive, Briar Creek Road and Madeleine Avenue) in Charlotte, Mecklenburg County, North Carolina. Prospective Developer has committed itself to redevelopment for no uses other than as a religious center that would be known as "The Park." The Park would be used for a religious center, office, restaurant, retail and wholesale purposes, a conference/ exhibition center, trade shows, educational/training programs and charity events.
MIDCAL ALUMINUM 4933 Brookshire Blvd. Charlotte, Mecklenburg Co. PD: G3 Enterprises, Inc.	The Brownfields Property is located at 4933 Brookshire Boulevard, Charlotte, Mecklenburg County, North Carolina and carries tax parcel identification number 03907111. Prospective Developer, its former owner, has sold it to a North Carolina general partnership, the Walthom Group, for use as a recycling facility. Groundwater is contaminated at the Brownfields Property due, on information and belief, to past activities at surrounding properties.

MIDTOWN MALL 401 South Independence Blvd. Charlotte, Mecklenburg Co. PD: Midtown Redevelopment	The Brownfields Property consists of two (2) parcels located at 401 South Independence Boulevard and 431 South Kings Drive, Charlotte, North Carolina; they bear Mecklenburg County tax parcel identification numbers 12522701 and 12522801, respectively. The Brownfields Property comprises approximately 10.3 acres and is the site of the former Midtown Square Mall. Prospective Developer intends to effect mixed-use redevelopment of the Brownfields Property that may include commercial, retail, office, residential and institutional uses, as well as parking structures and open space. Groundwater and soil are contaminated at the Brownfields Property due to past activities.
MODEL LINEN PD: QUB Studios 120 West Lewis Street Greensboro, Guilford Co.	The site was used to manufacture wood stoves and has low levels of chlorinated solvents in the groundwater. The site will be redeveloped as a photographic studio and other commercial space.
MTE HYDRAULICS 105 Chickasaw Road (intersection of Chickasaw Rd. & Pearson's Turnpike (state Hwy 2663) Gastonia, Gaston County PD: Liberty Land, LLC	A 9.76-acre parcel in Gastonia. The site has known soil and groundwater impacts from historical site operations which included the manufacturing of hydraulic components and brake pads and other uses. Prospective Developer intends to upgrade the property for manufacturing purposes and additional commercial use.
NATIONAL TEXTILES 100 Reep Drive Morganton, Burke Co. PD: Reep Drive, LLC	This former textile plant has contaminated soil and groundwater, likely from previous operations which included two drycleaning machines to clean textiles with perchloroethylene. The approximately 32-acre site will be redeveloped by the PD as a furniture manufacturing facility.
N.C. EQUIPMENT COMPANY 3101 Hillsborough Street Raleigh, Wake Co. PD: Rose Mary Development, LLC	The property consists of approximately 2.04 acres at 3101 Hillsborough Street, Raleigh, Wake County, North Carolina. The land was first developed in 1949 as the headquarters of North Carolina Equipment Company, a heavy equipment sales and service business. The site has been idle since December 2001. Groundwater contamination is present on the Brownfields Property, attributable, on information and belief, to past activities on or in the vicinity of the tract. Prospective Developer intends to redevelop the site for office space and commercial uses, including retail sales.
N.C. EQUIPMENT CO. II 5 & 7 Rosemary Street and 3112 Stanhope Ave. Raleigh, Wake Co. PD: Rose Mary Development, LLC	The Property consists of 0.99 acres located at 5 & 7 Rosemary Street and 3112 Stanhope Ave. in Raleigh, Wake County. The land had been in residential use since the mid-1930s. Groundwater contamination exists at the property, attributable to past commercial activities that have occurred in the vicinity of the site. PD intends to redevelop the property for use exclusively as a parking lot that will support the redevelopment that has taken place on the adjoining former N.C. Equipment Co. brownfields property.

NORTH COLLEGE STREET PROPERTY 900 N. College Street Charlotte, Mecklenburg Co. PD: SilverGirls, LLC	The Property comprises approximately 0.85 acres. It is bordered to the north by the former location of a Holiday Inn motel, to the south and southeast by railroad tracks and the site of the former Consolidated Metals facility (the subject of N.C. Brownfields Project No. 07009-03-60, now in residential use), to the east by land in commercial use, and to the west by Brookshire Freeway/Interstate I-277. From the 1900s through the 1960s, the Property's only use was as the location of a single family residence; the southern portion of the Property also formerly contained a railroad right of way that was present as early as 1911. Since the mid-1960s, the site has been idle and vacant, other than a large billboard that has been present since the 1990s. Prospective Developer's redevelopment plans for the site include residential, retail and other commercial use.
OLD PINEVILLE ROAD 4928 Old Pineville Road Charlotte, Mecklenburg Co. PD: John H. Huson	The property consist of a parcel at 4928 Old Pineville Road and a parcel at 649 Scholtz Road, both in Charlotte, Mecklenburg County, North Carolina; carrying tax parcel identification numbers 16907608 and 16907607, respectively; and comprising a total of approximately 3.5 acres. The parcels are surrounded by land in commercial and industrial use. A business known as Queen City Boiler formerly operated on the 4928 Old Pineville Road parcel for approximately 40 years, beginning in 1965. The 649 Scholtz Road parcel is cleared but undeveloped. Prospective Developer intends to redevelop the two parcels for mixed office, retail, residential and, with prior written DENR approval, other commercial use.
OXFORD PRINTING 8 Industry Drive Oxford, Granville Co. PD: FHO Partners, LLC	Former textile printing and finishing facility with VOC contamination in groundwater. PD has conducted remediation of floor drain contents. PD intends to redevelop the site for industrial/distribution use.
PADGETTE LANE PROPERTY 105 Padgette Lane Carrboro, Orange County PD: Downtown Urban Ventures, LLC	The property is located at 105 Padgette Lane, Carrboro, Orange County, North Carolina. It consists of 0.97 acres intended by Prospective Developer for planned mixed residential and commercial use. The site previously was the location of an automobile salvage lot and repair shop, Butler's Garage. The site's soil and groundwater are contaminated from past site operations.
PARKER HANNIFIN 12415 Capital Boulevard Wake Forest, Wake Co. PD: St. Ives 220 Commercial, LLC	A 33-acre former air control devices manufacturing facility with known Trichloroethene contamination in soil and groundwater resulting from former wastewater treatment operations. PD intends to redevelop the site in mixed commercial, retail, and office space uses. Responsible party is currently undertaking assessment and remediation within RCRA and N.C. Hazardous Waste Section oversight.

PELTON & CRANE PLANT 200 Clanton Road Charlotte, Mecklenburg County PD: Clanton Partners I, LLC	The Property (Tax Parcel Identification Number is 14702106) is located at 200 Clanton Road, Charlotte, North Carolina and comprises approximately 6 acres. The Pelton & Crane Company, a division of Siemens Medical Solutions, USA, Inc., manufactured products for the dental industry on the Brownfields Property from 1955 until 1992. Soil and groundwater at the site are impacted by chlorinated solvents. Prospective Developer has committed itself to redevelopment of the Brownfields Property for no uses other than for warehouse and, with prior written DENR approval, other commercial purposes.
PIEDMONT TRIAD RESEARCH PARK #1 CAMEL CITY CLEANERS/MGP 401 East Third Street Winston-Salem, Forsyth Co. PD: PTRP Holdings, LLC	The Property consists of approximately 1.27 acres located at 415 East Third Street in Winston-Salem, Forsyth County, North Carolina. The site was most recently used as a dry-cleaning facility and was originally developed in the late 1800s as a manufactured gas plant. Soil and groundwater contamination are present on the site due to past activities conducted on or in the vicinity of the site. In conjunction with the development of the planned Piedmont Triad Research Park, Wake Forest University Health Sciences, through BRF-A1a, LLC, intends to redevelop the subject property as a bio-technology research and office facility.
PIEDMONT TRIAD RESEARCH PARK #2 Various properties east and south of downtown Winston-Salem Winston-Salem, Forsythe County PD: PTRP Holdings, LLC	The Brownfields Property comprises approximately 49.02 acres in Winston-Salem. The land, initially used residentially and then industrially, has been in use for more than 100 years. Site soil and groundwater are contaminated from past operations as a R. J. Reynolds Tobacco Company cigarette manufacturing facility. Prospective Developer intends to redevelop the Brownfields Property with bio-technology research facilities, offices, retail outlets, public open areas, high-density residences, performance/concert halls, hotels, community centers, swimming pools, parking and schools.
PILOT MILLS 1121 Haynes Street Raleigh, Wake Co. PD: Capital Way, Inc, & Hedgehog Holdings, LLC	Abandoned, condemned turn-of-the-century textile mill in Downtown Raleigh redeveloped into office space and preserved on the National Register of Historic Places. Land use restrictions for chlorinated solvent in groundwater and capping of mercury in soils.

PPD HEADQUARTERS SW corner of Harnett and Front Streets Wilmington, New Hanover County PD: River Ventures, LLC	Approximately 8-acre site is a small portion of the ~ 40-acre Almont Shipping site that will all eventually be redeveloped once Almont moves to the Wilmington Port Authority. Almont has been a dealer in bulk commodities (saltcake, urea, potash, phosphate, etc.). The site as a whole has been in business for almost a hundred years, with warehouses currently on this property being built in the late 1970s. Prior to that time it was operated as a fuel depot with large ASTs located on the site. Contamination from the adjacent CSX property spill of 2.2 million gallons of diesel in 1982 is suspected, although a Phase II assessment is currently underway. PD intends to demolish the buildings on site in order to construct a 400,000 ft^2 office building.
PURSER DRIVE-GARNER 816 & 818 Purser Drive Garner, Wake Co. PD: WLA Garner Land, LLC	The Brownfields Property is 1.981 acres and is located at 816 and 818 Purser Drive, Garner, Wake County, North Carolina. It is comprised of two parcels with tax parcel identification numbers 1701166307 and 1701163369. The Prospective Developer has developed the Brownfields Property into a parking lot for a retail shopping center. Prior to the Prospective Developer's purchase and redevelopment of the Brownfields Property, two light industrial/commercial businesses were present: Fowler's Trucking (816 Purser Drive) and C&M Electric (818 Purser Drive).
QUALITY METAL PRODUCTS 1111 Oates Road Gastonia, Gaston Co. PD: Wede Corporation, LLC	This 11-acre site contains an abandoned facility of 48,000 square feet formerly used as for metal fabrication. Parts cleaning activities resulted in solvent impacts to site soil and groundwater. PD intends to refurbish the facility for metal fabrication utilizing high-tech, non-contaminating methods.
R. W. MCCOLLUM 107 W. Meadowview Rd. Greensboro, Guilford Co. PD: R.W. Holding, LLC	The Brownfields Property consists of approximately 6.5 acres at 107 West Meadowview Road in Greensboro, Guilford County, North Carolina. Since 1960, R.W. McCollum Company, Inc. has engaged in cleaning, repair and maintenance of tanker trailers used for the transportation of bulk liquids on the Brownfields Property. Groundwater contamination exists at the Brownfields Property due, on information and belief, to previous site activities. Prospective Developer has committed itself to redevelop the Brownfields Property as a tanker trailer cleaning and repair facility, a trucking dispatch terminal, office space and, possibly, truck wash and diesel repair facilities, or other commercial uses if DENR approves same.
RACHEL STREET 2404 Rachel St. Charlotte, Mecklenburg Co. PD: Charlotte-Mecklenburg Housing Partnership	The Brownfields Property comprises approximately 0.516 acres, the address of which is 2404 Rachel Street, Charlotte, NC. Prospective Developer plans to redevelop it for residential, recreational and open space uses. The site was formerly in commercial use and is surrounded by land in residential use. Groundwater and soil on the Brownfields Property are contaminated.

RBC TOWER PARKING DECK 331 S. Wilmington St. Raleigh, Wake Co. PD: Highwoods 301 Fayetteville Street, LLC	The Brownfields Property comprises approximately 1.2 acres and is located at 331 South Wilmington Street, Raleigh, Wake County, North Carolina. Historic uses of the property since the late 1800s have included various commercial, retail and light manufacturing activities. Soil and groundwater contamination are present on the Brownfields Property due, on information and belief, to past activities conducted on or in the vicinity of the site. The site became idle, and all structures had been demolished, prior to August 2008. Subsequent to acquiring the Brownfields Property, Prospective Developer constructed an eight-story, pre-cast concrete parking deck containing approximately 1,240 spaces and two ground-level retail spaces totaling approximately 5,800 square feet.
REA ASPHALT PLANT 2701 Youngblood Street Charlotte, Mecklenburg Co. PD: South End Silos, LLC	The Brownfields Property consists of three (3) parcels located at 2701 Youngblood Street in Charlotte. The Property comprises 8.551 acres and is the site of the former Rea Construction Asphalt Plant. Prospective Developer intends to effect mixed use redevelopment of the Property that may include commercial, office, retail and residential uses. Groundwater and soil are contaminated at the Brownfields Property due to past activities.
REA ASPHALT PLANT ADDITION 2701 Youngblood Street Charlotte, Mecklenburg Co. PD: South End Silos, LLC	Prospective Developer added 0.768 acres of real property that had been a right-of-way along Griffith Road adjacent to the original Rea Asphalt Plant Property. The additional acres are impacted from past site activities, and the proposed uses are the same as those for the original project.
REDMAN HOMES Redman Road Mebane, Orange Co. PD: Barber & Ross Co.	Former mobile home manufacturing facility with metals and solvent contamination in soil and groundwater. PD has performed drum removal and soil remediation activities. PD intends to redevelop the site as a manufacturing facility to produce windows and doors.
REEVES SITE 8900 Research Drive Charlotte, Mecklenburg County PD: Linda Wolfe, Paul Ferrigan	Approximately 20-acre parcel that was historically the former Reeves Brother Facility that operated as a textile research and development laboratory. The site has known groundwater impacts from chlorinated solvents. PD intends to redevelop the property for commercial and light industrial uses.
RUSAK PROPERTY 3331 Griffith Street Charlotte, Mecklenburg Co. PD: CharMeck Board of Education	A 1.21-acre parcel that is adjacent to the Marie G. Davis Middle School. The site is contaminated from historical operations as a metal plating facility. The PD intends to incorporate the adjacent parcels into the new middle school construction. The brownfields parcel will be the plaza entrance.

SALEM UNIFORM 4015 N. Cherry Street Winston-Salem, Forsyth County PD: Winston Weaver Co. Inc.	2.53-acre site that has been vacant for many years. Was leased out from 1967-83 to Salem Uniform and from 1983-86 to Cintus Corporation which purchased the assets for Salem Uniform. During a Limited Site Assessment for petroleum USTs, high levels of PCE were discovered, probably from dry cleaning solvents. PD is currently leasing space, but would like to improve it for use for fertilizer storage and other commercial usage.
SANFORD WWTP 1351 Douglas Drive Sanford, Lee Co. PD: S. Wornnom & G. Perkins	Former municipal wastewater treatment plant site with petroleum impacted sewer sludge and metals impacts in site soils and low concentrations of volatile and semi-volatile compounds in groundwater. PD intends to redevelop the property in commercial use, including restaurant, retail space and a multi-screen movie theater.
SCHLAGE LOCK FACILITY 3551 North Wesleyan Blvd. Rocky Mount, Nash County PD: Community Resource Exchange	49.15 acre/196,000 square foot former manufacturing facility for lock/doorknob plating and assembly that used PCE as a degreasing solvent. Working with the Hazardous Waste Section as site is a RCRA TSD post-closure facility with active voluntary GW remediation system (Ingersoll-Rand is RP). Chlorinated solvents (PCE, TCE, 1,2-DCE, toluene and acetone are main constituents of concern in both soil and groundwater. PD is non-profit organization needing a loan in order to make improvements to former manufacturing facility, in order to provide tenant space for non-profit organizations and possible outparcels for commercial retail businesses.
SCHRADER-BRIDGEPORT 1609 Airport Road Monroe, Union Co. PD: Carolina Classifieds.com, LLC	The Brownfields Property is located at 1609 Airport Road, Monroe, Union County, North Carolina. It comprises approximately 10 acres and contains a manufacturing structure of approximately 108,000 square feet. The Brownfields Property was developed by Schrader Automotive, Inc. (now Schrader-Bridgeport International, Inc.) in 1979. That firm manufactured tire valve stems and associated accessories at the Brownfields Property, including core components and inserts, from 1979 until 2004. Groundwater, soil and indoor air at the Brownfields Property are contaminated. Air sparging and soil vapor extraction are being conducted to remediate the groundwater and soil. Prospective Developer intends to redevelop the Brownfields Property for commercial and light industrial use by refitting the manufacturing structure for use in its printing and distribution business.

SCOTLAND MEMORIAL HOSPITAL 600 McLean Street Laurinburg, Scotland County PD: City of Laurinburg 5.3 Acres	The Brownfields Property consists of 4.31 acres and comprises a city block bordered to the north by McLean Street, to the south by West Covington Street, to the east by King Street, and to the west by Malcolm Street, in Laurinburg, Scotland County, North Carolina. The surrounding properties include a city park, a nursing facility, a school, and land in residential and institutional use. The Prospective Developer has committed itself to redevelopment of the Brownfields Property for no uses other than institutional and recreational purposes.
SHULER PROPERTY US 23/74 & Hyatt Creek Road Waynesville, Haywood Co. PD: Waynesville Commons Retail Assoc, LLC	The property comprises 4.494-acres and was formerly a Drive-In Movie Theater, after which the property was used to dump construction and demolition debris. The PD has committed itself to redevelopment for no uses other than a roadway that provides access to the Brownfields Property to the west, and for restaurants, banks, retail shops, gas station uses, other commercial uses with prior written DENR approval, and offices, plus contiguous accessory uses such as parking areas and service drives.
SINGER COMPANY 357 Amilite Way Chocowinity, Beaufort Co. PD: DMB NC 2, LLC	Abandoned rural manufacturing facility with lead and phthalate contamination in soil and groundwater. The brownfields agreement provides for partial site remediation. PD intends to redevelop the site with mixed retail and light industrial uses.
SMITH METAL & IRON 725 W. 4th Street Charlotte, Mecklenburg Co. PD: City of Charlotte	Former site of a scrap metal yard and of a waste cell created for the temporary disposal of impacted soil removed during the construction of the adjoining Carolina Panther's practice field. The waste in the cell has been removed, and minor chlorinated solvent impacts remain in site groundwater. PD intends to redevelop the site in high density residential with additional office, entertainment, and retail potential.
SMITH PROPERTY 309 Campbell Street Shelby, Cleveland Co. PD: Cleveland County	Project involves the redevelopment of an area occupied by seven underused and dilapidated residential homes with petroleum hydrocarbon and chlorinated solvent contamination in groundwater. PD has the support of local residents to reuse the site as a parking lot serving the Cleveland County Offices.
SONOCO FLEXIBLE PACKAGING FACILITY 2203 Hawkins Street Charlotte, Mecklenburg Co. PD: Harris Murr & Vermillion, LLC	It is believed that groundwater and soil are contaminated at the Brownfields Property due to historical activities. The PD intends to redevelop the property for commercial (including retail and office), residential and ancillary purposes.

SOUTH TRYON STREET 2036 S. Tryon Street Charlotte, Mecklenburg Co. PD: Citiline, LLC	A 2.88-acre parcel near historic SouthEnd. PD intends to redevelop the property for commercial purposes such as office and showroom condominiums. Groundwater is contaminated at the property due to historical site operations as industrial/warehouse storage.
SOUTHERN MANUFACTURING 1000 Seaboard Street Charlotte, Mecklenburg Co. PD: Fiber Mills, LLC	This 9-acre site located in inner Charlotte was a former asbestos tile manufacturing facility. Asbestos was discontinued in 1986, and the facility was closed in 1999. The site has asbestos contamination in soils. Intended reuse of the site includes an outdoor amphitheater, a technical business park, or a mixed-use development with industrial, commercial, and residential uses.
SOUTHSIDE PROPERTIES 2208 South Boulevard #2222 Charlotte, Mecklenburg Co. PD: Atlantic Realty Partners, Inc.	The Property comprises approximately 4.2 acres and is the former site of operations conducted by, among others, Carolina Metal Products, LLC and Lida Manufacturing Company. Groundwater and soil are contaminated at the site due, on information and belief, to past activities. Southend Realty Partners, LLC intends to effect redevelopment of the property for residential (including hotel) purposes, and/or for office, merchandise sales space/showroom, food and beverage facility, health/personal care provider and, with prior written DENR approval, other commercial use.
STATE FARM ROAD 660 State Farm Road Boone, Watauga Co. PD: Glen Wilde, LLC	Project involves the redevelopment of property occupied by a rural residence with chlorinated solvent contamination in groundwater and in a spring from an off-site source. PD intends to redevelop the site as a medical office complex.
STONEVILLE FURNITURE CO. 525 S. Henry Street Stoneville, Rockingham Co. PD: Community Resource Exchange	The site is a 22.5 acre historic furniture manufacturer that was idled in 2003. PD plans to redevelop the facility for light industrial, warehousing and flex space, thereby creating at least 200 jobs and greatly improving the tax base. The site has chlorinated solvent impacts to soil and groundwater.
SUN CHEMICAL 1100 Fairchild Road Winston-Salem, Forsyth PD: Warhal Properties, LLC	The property consists of 5.26 acres and was formerly used as an ink manufacturing facility. The property was abandoned in the 1990s. Groundwater and soil vapor at the site are contaminated with chlorinated solvents from past site operations. The property has been renovated and redeveloped for office and warehouse use and plumbing systems fabrication.

SYNCOT FIBERS 660 State Farm Road Boone, Watauga Co. PD: Glen Wilde, LLC	The Brownfields Property is located at 2459 Wilkinson Boulevard, Charlotte, NC 28208, in Mecklenburg County. The Brownfields Property consists of a two-story (plus basement) brick building containing 56,958 square feet on a 3.136 acre parcel. The site previously was the location of Syncot Fibers, which stored and processed waste cotton and synthetic filler materials to make mattress filler, mops and other products. Prior businesses that operated at the site included offices, laboratories and warehouses of companies that reportedly handled large volumes of dyes and other textile chemicals. The Brownfields Property's soil and groundwater are contaminated.
TAR HEEL LIFT 7055 Albert Pick Road Greensboro, Guilford Co. PD : Albert Pick, LLC	The Brownfields Property comprises approximately 7.64 acres at 7055 Albert Pick Road, Greensboro, Guilford County, North Carolina. The site was developed in 1974 as a forklift service and repair facility. Soil and groundwater contamination at the property are attributable, on information and belief, to past activities conducted there. Prospective Developer acquired the Brownfields Property on July 15, 2003, and has subsequently redeveloped it for use for a grading equipment storage facility and for office and showroom space for other commercial uses
TARTAN MARINE S. NC Hwy 177 Hamlet, Richmond Co. PD: Chair Specialist Co.	Former boat manufacturing facility with lead contamination in soil. Additional site sampling conducted by the PD has shown previous soil removal actions have left no health-based lead problems. PD intends to redevelop the site as a chair and table base manufacturing facility.
TERRELL MACHINE 3030 South Boulevard Charlotte, Mecklenburg Co. PD: SESCO Group-Carolina Bldg., LLC	Site of former textile manufacturing and gear box machining operations, property in Charlotte's South End district is being redeveloped with ground floor retail and office/residential above. Remedial actions to eliminate hot spot contamination included soil removal and groundwater pump and treat. Land use restrictions are in place to address chlorinated solvent contamination remaining in groundwater.
TOBACCO WAREHOUSE 221-223 NE Main Street Rocky Mount, Edgecombe Co. PD: City of Rocky Mount	The Brownfields Property is an assemblage of 18 contiguous parcels comprising 4.12 acres that encompass a portion of the Douglas Block Redevelopment Area, an historically African-American commercial and residential community near downtown Rocky Mount, Edgecombe County, North Carolina. The parcels are bounded to the west by N.E. Main Street and commercially developed property; to the north by Goldleaf Street; to the east by Albemarle and Atlantic Avenues; and to the south by E. Thomas Street and commercial property. The site previously was the location of large tobacco warehouse facilities, and numerous retail, medical and dental establishments. Soil and groundwater at the property are

	contaminated.
TOWN & COUNTRY RENT-A-CAR 5324 Independence Blvd. Charlotte, Mecklenburg Co. PD: SRE-North Carolina II, LLC	The property is located at 5324 East Independence Boulevard, Charlotte, Mecklenburg County, North Carolina, and comprises approximately 1.6 acres. It has previously been the site of a heating oil distribution business, a service station, an automobile repair shop, a car wash and a rental car business. Soil at the property is contaminated with gas and diesel-range organics. The site has been vacant and idle since July 2004. The Prospective Developer has committed itself to redevelopment of the property exclusively for commercial/office use, through sale of the site to a developer.
TRIANGLE DRIVE PROPERTY 6009 Triangle Drive Raleigh, wake Co. PD: Thornwood Partners, LLC	The Brownfields Property consists of approximately 2.00 acres and is located at 6009 Triangle Road in Raleigh, Wake County, North Carolina. It was first developed in 1971 and initially occupied, from 1971 until the early 1990s, by an electric motor repair company, then, until 2002, by a countertop manufacturer. Remediation of petroleum, oil & grease and PCB-impacted soil was conducted at the Brownfields Property in 1993. Analytical results of confirmatory soil samples collected after completion of soil remediation activities indicated no concentrations of contaminants in excess of soil remediation goals of the Inactive Hazardous Sites Branch of DENR's Superfund Section. Residual environmental contamination exists in groundwater at the Brownfields Property from past activities conducted thereon and/or from off-site sources. Prospective Developer has committed itself to redevelopment of the Brownfields Property for no uses other than as a facility that manufactures, warehouses and sells stone, wood and solid surface countertops.

V F Site 2831 Wilson Park Road Statesville, Iredell Co. PD: Statesville Partnership LLC	This former textile plant has chlorinated solvent contamination as a result of on-site dry-cleaning operations. The PD plans to upgrade the property for light manufacturing or distribution facility.
VANIER GRAPHICS 655 E. Meadow Road Eden, Rockingham Co. PD: A. C. Furniture Co.	Former printing facility with petroleum and chlorinated hydrocarbon contamination in the soil and solvent contamination in the groundwater. Developer intends to redevelop the site as a furniture assembly and upholstering facility.
VIRKLER FACILITY II 1000, 1010 and 1020 Pressley Road Charlotte, Mecklenburg Co. PD: Old Steel, LLC	The Brownfields Property consists of approximately four acres that contain two adjoined warehouses comprising approximately 63,000 square feet. Prospective Developer intends to redevelop the Brownfields Property for warehousing and manufacturing. Groundwater, soil, soil and sub-slab vapor, and indoor air contamination are present at the site.
WAL-MART – GARNER 4424 Fayetteville Road Garner, Wake Co. PD: WLA Garner Retail, LLC	The Brownfields Property is located at 4500 Fayetteville Road, Garner, Wake County, North Carolina and is associated with the tax parcel identification numbers 1701162830 and 1701169565. The Brownfields Property comprises approximately 21.71 acres. Prospective Developer has redeveloped the Property as a retail shopping center. The current uses include a retail shopping center with Wal-Mart as the anchor tenant, and attendant parking areas. Residential, office and hotel uses are not currently planned but may occur in the future.
WAL-MART #1666-04 3800-3900 Independence Blvd. Charlotte, Mecklenburg Co. PD: Wal-Mart Real Estate Business	The Brownfields Property comprises 18.79 acres south of East Independence Boulevard and northwest of Pierson Drive in downtown Charlotte, Mecklenburg County, North Carolina. It is the site of the former Amity Gardens shopping center. Groundwater and soil there are contaminated. Prospective Developer's plans for the Brownfields Property involve demolition of all existing structures and construction of a large retail store with associated access-ways and parking.
WARREN MARKETING GROUP 626 Greenville Highway Hendersonville, Henderson Co. PD: Carl H. Ricker, Jr.	The Brownfields Property comprises 0.35 acres in Hendersonville, Henderson County, North Carolina. Prospective Developer has committed itself to redevelopment of the Brownfields Property for no uses other than a parking lot and access way for an adjacent development. The Brownfields Property's soil and groundwater is contaminated due, on information and belief, to an underground storage tank and possible use as a dry cleaning operation.

WEST END VILLAGE Properties on N. Broad, W. Fourth, W. Fifth, North Green, N. Spring Streets and Brookstown Avenue, Winston-Salem, Forsyth County PD: West End Ventures, LLC	The property is located in western downtown Winston-Salem, Forsyth County, North Carolina, comprises approximately eight (8) acres and is surrounded primarily by commercial development. It is bordered by West Fourth Street to the north, West Second Street to the south, North Broad Street to the east and land in commercial use to the west. The property was mainly residential until around the 1960s to 1970s, after which time most of the site underwent commercial redevelopment in the form of offices, retail businesses and service businesses. Groundwater and soil are contaminated at the property from past site uses. Prospective Developer has committed itself to redevelopment of the property for no uses other than mixed commercial and/or high-density residential purposes.
WEST MOREHEAD 1310 W. Morehead Street Charlotte, Mecklenburg Co. PD: Addison Investments, LLC	Former automobile repair and maintenance facility with chlorinated solvent contamination in soil and groundwater. Developer intends to redevelop the site, to include both facility renovation and new construction for use as commercial office/retail.
WEST WORTHINGTON 118 West Worthington Ave. Charlotte, Mecklenburg Co. PD: Design Center Carolinas, LLC	The property is comprised of approximately 0.28 acres in downtown Charlotte, generally at the intersection of West Worthington Avenue and Hawkins Street. The property's groundwater is contaminated with small concentrations of chlorinated solvents. Design Center Carolinas LLC intends to combine the subject property with the adjacent property to the east (at 100 West Worthington Avenue) and effect construction there of a 20-plus story residential building that includes office and/or retail use on the ground level.
WILLARD LEAD FACILITY 101 New Bern Street Charlotte, Mecklenburg Co. PD: Harris Murr & Vermillion, LLC	Groundwater at the approximately 4.5-acre site is contaminated with chlorinated solvents, while soil shows metals contamination. The majority of the property has been vacant since 1996, the PD intends to redevelop the property into residential, retail, and possibly other commercial uses.
WILMINGTON CONVENTION CENTER 525 Nutt Street Wilmington, New Hanover Co. PD: River Ventures, LLC	The property is a former industrial site, approximately 9.22 acres that was most recently used as a petroleum receiving facility for CSX Transportation. Soil and groundwater at the site are contaminated with metals and petroleum constituents. The PD plans to redevelop the property into a publicly-owned convention center, parking deck and open space. The redevelopment plans also include a proposed privately-owned hotel and restaurant.

WILSON LANDFILL US Hwy 301 South Wilson, Wilson Co. PD: Dillon Properties, LLC	This underused 14-acre site was formerly occupied by a wastewater treatment facility owned and operated by the City of Wilson. The site has known metals contamination in groundwater. Developer intends to redevelop in mixed commercial, warehousing, and residential uses.
WIX FILTRATION 2900 Northwest Blvd. Gastonia, Gaston Co. PD: Beacon #22, LLC	The property consists of 31.25 acres and is located at 2900 Northwest Boulevard in Gastonia, Gaston County, North Carolina. Environmental contamination exists on the site in groundwater, soil and sub-slab vapor at concentrations that preclude unrestricted use. Prospective Developer plans to redevelop the site for industrial purposes.

ACTIVE ELIGIBLE PROJECTS (124)

(PD = Prospective Developer)

330 WEST TREMONT
W. Tremont Ave & South Blvd.
Charlotte, Mecklenburg Co.
PD: 330 West Tremont, LLC

ABERNATHY LUMBER
308 Craighead Road
Charlotte, Mecklenburg Co.
PD: NoDa – Tidewater Development

ADAMS-MILLS FACILITY
400 West English Rd.
High Point, Guilford Co.
PD: Bank of North Carolina

AMERICAN TOBACCO HISTORIC DISTRICT
Blackwell & Pettigrew Streets
Durham, Durham County
PD: SBER Development Holdings, LLC

AMP FACILITY
1126 Church Street
Greensboro, Guilford Co.
PD: Church Street Medical, LLC

ANDALE
1181 Old Caroleen Rd.
Forest City, Rutherford Co.
PD: Andale, LLC

AQUAIR, Former
13300 Sam Neely Rd.
Charlotte, Mecklenburg Co.
PD: Westinghouse Real Estate Development, LLC

ASHEVILLE INDUSTRIES
1829 Hendersonville Road
Arden, Buncombe County
PD: Monarch Main LLC

ASHEVILLE WASTE PAPER
304 Lyman Street
Asheville, Buncombe County
PD: Daniel B. Sellers

AVONDALE MILLS
700 West Main Street
Burnsville, Yancey Co.
PD: Tyner Construction Co.

B & H SHEET METAL
115-119 ½ Riverside Drive
Asheville, Buncombe Co.
PD: RiverLink, Inc.

BAKER PROPERTY, former
PIN 0649468316
Holly Springs, Wake Co.
PD: Alminta Partnership

BASF – Enka Landfill
Sand Hill Road
Asheville, Buncombe Co.
PD: Enka Partners of Asheville, LLC

BASF, Former
Sand Hill Road
Asheville, Buncombe Co.
PD: Enka Partners of Asheville, LLC

BEACON MANUFACTURING CO.
202 Whitson Ave.
Swannanoa, Buncombe Co.
PD: Swannanoa Valley Properties, LLC

BELDING HAUSMAN
2130 E. Main Street
Lincolnton, Lincoln Co.
PD: Ingles Markets, Inc.

BILLER PROPERTY
107 West Bragg St.
Greensboro, Guilford Co.
PD: Redevelopment Commission of Greensboro

BLOOM INDUSTRIAL
3000 & 3100 Stitt Street
Monroe, Union Co.
PD: Bloom Industrial, LLC

BROAD STREET DEVELOPMENT
139 Merrimon Ave
Asheville, Buncombe Co.
PD: Northwest Propty Grp – Broad St. LLC

BURLINGTON DISTRIBUTION CENTER
6012 High Point Road
Greensboro, Guilford Co.
PD: AZAS, LLC

BURLINGTON INDUSTRIES – DURHAM
2109 Hillsborough St.
Durham, Durham Co.
PD: Crescent Erwin Ventures, LLC

C.P. PROPERTIES
2301 Brown Road
Sanford, Lee Co.
PD: Central Carolina Shredding, LLC

C.C. MANGUM
6105 Chapel Hill Road
Raleigh, NC
PD: CCM 54, LLC

CAMPBELL-EVERHART SITE
Thurmond Road
New Bern, Craven County
PD: Brice's Creek Bible Church

CANON MILLS VILLAGE WWTP
West "C" St. & Glenn Ave.
Kannapolis, Rowan Co.
PD: Castle & Cooke North Carolina, LLC

CAROLINA COUNTERS
605 Central Ave. N.
Locust, Stanly Co.
PD: Working Dog, LLC

CAROLINA CREOSOTING CO.
Eastbrook Drive
Leland, Brunswick Co.
PD: E.G. Dale Enterprises

CARAMONT HEALTH
417 East Charlotte Ave.
Mount Holly, Gaston Co.
PD: CaroMont Health, Inc.

CITY OF WASHINGTON FUTURE DEVELOPMENT
234 Springs Road
Washington, Beaufort Co.
PD: City of Washington

CLARK EQUIPMENT, Former
2169 Hendersonville Rd.
Asheville, Buncombe Co.
PD: Buncombe County

CLASSIC COFFEE CONCEPTS
1016 & 1024 Montana Drive
Charlotte, Mecklenburg Co.
PD: Pearl Pacific Properties

CLEVELAND RIDGE APARTMENTS
East Gold Street
Kings Mountain, Cleveland Co.
PD: Pendergraph Development, LLC

CLIFFSIDE MILLS PROPERTY
272 Main Street
Cliffside, Rutherford County
PD: Cliffside Mills LLC

CLINTON RAIL DISTRIBUTION
100-A Fontana Street
Clinton, Sampson Co.
PD: City of Clinton

CORTINA FABRICS
3165 Viewmont Drive
Swepsonville, Alamance Co.
PD: Farley Greenhill, LLC

DAVIS DRIVE

9 Davis Drive
Research Triangle Park, Durham Co.
PD: Syngenta Biotechnology, Inc.

DAY WAREHOUSE
336 Old Lyman Street
Asheville, Buncombe Co.
PD: BD90, LLC

DURHAM CENTRAL PARK COHOUSING COMMUNITY
128 & 132 Hunt St.
Durham, Durham Co.
PD: Durham Central Park Cohousing Community, LLC

ECUSTA – Tract A
1 Ecusta Road
Brevard, Transylvania Co.
PD: Davidson River Village, LLC

ECUSTA – Tract B
1 Ecusta Road
Brevard, Transylvania Co.
PD: Davidson River Village, LLC

ECUSTA – Tract C
1 Ecusta Road
Brevard, Transylvania Co.
PD: Davidson River Village, LLC

ECUSTA – Tract D
1 Ecusta Road
Pisgah Forest, Transylvania Co.
PD: Davidson River Village, LLC

ECUSTA – Tract E
1 Ecusta Road
Brevard, Transylvania Co.
PD: Davidson River Village, LLC

ECUSTA – Tract F
1 Ecusta Road
Brevard, Transylvania Co.
PD: Davidson River Village, LLC

ECUSTA II
1 Ecusta Road
Brevard, Transylvania Co.
PD: Davidson River Village, LLC

EDACO JUNKYARD
190 Amboy Road
Asheville, Buncombe Co.
PD: RiverLink, Inc.

EDMUNDS MANUFACTURING
1016 Battleground Avenue
Greensboro, Guilford County
PD: Carroll Investment Properties, LLC

EDWARDS PROPERTY
10211-10311 Rozzelle's Ferry Rd.
Charlotte, Mecklenburg Co.
PD: Anne Edwards

ELKINS CHRYSLER MITSUBISHI
905 East Jackie Robinson Dr.
Durham, Durham Co.
PD: Van Alen Associates, LLC

FABRICTEX
376 Clarks Creek Road
Lincolnton, Lincoln County
PD: CCR Real Estate Holdings, LLC

FAIRVIEW ROAD
6 Fairview Road
Asheville, Buncombe Co.
PD: M. Realty, LLC

FLETCHER OUTPATIENT MEDICAL FACILITY
2765 Hendersonville Road
Fletcher, Henderson Co.
PD: Mission Health, Inc.

FLOWSERVE FACILITY
264 Wilson Park Road
Statesville, Iredell Co.
PD: Big Top, LLC

GASTONIA POPLAR INV
1925 W. Poplar St.
Gastonia, Gastonia Co.
PD: Gastonia Poplar Investments, LLC

GELTMAN
1703 Pineview Street, SE
Conover, Catawba Co.
PD: GWCW Properties, LLC

GLEN RAVEN MILLS
114 Raven Circle
Kings Mountain, Cleveland Co.
PD: Consortium for Progress

GOLDTEX PLANT FACILITY
401 Patetown Road
Goldsboro, Wayne Co.
PD: Scouts, LLC

GREEN VALLEY OFFICE PARK
706, 708, 802, 804 & 806 Green Valley Rd.
Greensboro, Guilford Co.
PD: SL Green Valley, LLC

GREY HOSIERY MILL
Fourth & Laurel Streets
Hendersonville, Henderson Co.
PD: Old Mill Arts Committee

GROVER MILLS DEVELOPMENT
St. address unknown
Lynn, Polk Co.
PD: Grover Mills Development Center

GUILFORD ORTHOPAEDIC PROPERTY
809 Green Valley Rd.
Greensboro, Guilford Co.
PD: Kotis Holdings, LLC

HAMILTON BEACH
234 Springs Road
Washington, Beaufort Co.
PD: Beaufort County Committee of 100

HANESBRANDS INDUSTRIAL FACILITY
700 South Stratford Road
Winston-Salem, Forsyth Co.
PD: 700 South Stratford, LLC

HAWKINS STREET PROPERTY
2171 Hawkins St.
Charlotte, Mecklenburg Co.
PD: BHA Investors, LLC

HEATCRAFT FACILITY
602 Sunnyvale Drive
Wilmington, New Hanover Co.
PD: Port City Distribution, LLC

HERITAGE SQUARE
401 E. Lakewood Ave.
Durham, Durham Co.
PD: Woodlake Avenue Partners, LLC

HIGH PENN OIL REFINERY
PPG Road
Greensboro, Guilford Co.
PD: Sunoco, Inc (R&M)

HISTORIC BILTMORE VILLAGE II
One Fairview Road
Asheville, Buncombe Co.
PD: Historic Biltmore Village II, LLC

HOLLAR HOSIERY MILL
883 Highland Ave.
Hickory, Catawba Co.
PD: Hollar Hosiery Investments, LLC

HOLMES PROPERTY
450 & 498 Carolina Pines Avenue, and
500 Granite Road
Raleigh, Wake County
PD: South Saunders Redevelopment LLC

HOME INNOVATIONS SITE
Hwy 52 S & Ratliff Gin Road
Morven, Anson Co.
PD: Dan River Inc.

HUNT MANUFACTURING
2301 Speedball Road
Statesville, Iredell County
PD: Speedball Road LLC

IDAHO TIMBER OF NC
1431 Nicholas Street
Henderson, Vance Co.
PD: Idaho Timber of NC, LLC

JDS UNIPHASE (CREE)
3026 Cornwallis Road
Research Triangle Park, Wake County
PD: Cree, Inc.

KINGS ARMS APARTMENTS
1209 Charles Blvd.

Greenville, Pitt Co.
PD: University Residences – ECU, LLC

KNOB CREEK PROPERTY
1185-1190 Drexel; Road
Morganton, Burke Co.
PD: McCrorie Properties, LLC

McGILL PROPERTY
5860-5866 Yadkin Rd.
Fayetteville, Cumberland Co.
PD: Yadkin Road Land Co., LLC

MOTOR WERKS
410 Oberlin Road
Raleigh, Wake Co.
PD: Crescent Cameron Village, LLC

NACCO MATERIALS
2040 Morganton Boulevard SW
Lenoir, Caldwell Co.
PD: SV Lim Holdings, LLC

NATURE'S EARTH PELLETS
16900 Aberdeen Rd.
Laurinburg, Scotland Co.
Scotland Holdings, LLC

NORFOLK SOUTHERN INTERMODAL FACILITY
N. Brevard St. & 401 Parkwood Ave.
Charlotte, Mecklenburg Co.
PD: City of Charlotte

NORTH TRYON COMMERCIAL
2205-2221 & 2229 N. Tryon St.
Charlotte, Mecklenburg Co.
PD: MV Tryon II, LLC

NU-TREAD TIRE COMPANY
545 Foster Street
Durham, Durham Co.
PD: Durham CREDO-1, LLC

OLD WNC FAIRGROUNDS
Intersection of James Street and Mill Street
East Flat Rock, Henderson County
PD: Henderson County Public Schools

PACE BOAT AND RV PARK
Freedom Park Road
Beaufort, Carteret Co.
PD: Blue Treasure, LLC

PARK BOAT COMPANY
Intersection of W. Third and Van Norden Streets
Washington, Beaufort County
PD: Washington Center, LLC

PARNELL MARTIN FACILITY
1315 N. Graham St.
Charlotte, Mecklenburg Co.
PD: City of Charlotte

PENNSTON SITE
3600 Reedy Creek Parkway
Greensboro, Guilford Co.
PD: Reedy Creek Investments, LLC

PIEDMONT TRIAD RESEARCH PARK CENTRAL DISTRICT
Various properties south of Third St and north of Bus I-40
Winston-Salem, Forsyth Co.
PD: PTRP Holdings, LLC

PLANTERS OIL MILL
1004 Cokey Rd.
Rocky Mount, Edgecombe Co.
PD: City of Rocky Mount

POND ROAD LANDFILL
PD: Sonia Gribble
79 Pond Road
Asheville, Buncombe County

PROGRESS ENERGY
305 & 327 South Wilmington St.
Raleigh, Wake Co.
PD: Hamilton Merritt, Inc.

PROVIDENCE PLACE
207 Coxe Avenue
Asheville, Buncombe Co.
PD: Asheville Buncombe Community Christian Ministry

RALEIGH CONVENTION CENTER
600, 602 & 616 South Salisbury St.
Raleigh, Wake Co.

PD: Empire Historic Development, LLC

RALEIGH MGP
600 West Cabarrus Street
Raleigh, Wake Co.
PD: Clancy & Theys Construction Co.

RETREAT AT RALEIGH
5801 Hillsborough St.
Raleigh, Wake County
PD: Retreat at Raleigh, LLC

ReVENTURE EAST
Mount Holly Rd.
Charlotte, Mecklenburg Co.
PD: ReVenture Park Investments I, LLC

ReVENTURE WEST
Mt. Holly Rd., Belmeade Dr; & Hawfield Rd
Charlotte, Mecklenburg Co.
PD: ReVenture Park Investments I, LLC

RIVERLINK OUTDOOR ADVENTURE
704 Riverside Drive
Asheville, Buncombe Co.
PD: Riverlink, Inc

S & W CHEMICALS, Inc. FACILITY
1530 1st Avenue, SW
Hickory, Catawba Co.
PD: Western Piedmont Regional Transit Authority

SCOTT AVIATION
309/310 W. Crowell Street
Monroe, Union County
PD: City of Monroe

SILVERMAN PROJECT
48 Swannanoa River Road
Asheville, Buncombe Co.
PD: AWANASA. LLC

SOUTH ELM STREET
44 properties along South Elm St.
Greensboro, Guilford County
PD: City of Greensboro, Dept. of Housing and Urban Development

SOUTHERN FURNITURE
415 Peanut Road
Elizabethtown, Bladen Co.
PD: Town of Elizabethtown

SPARTA TEAPOT MUSEUM
48, 90, 114 West Whitehead St; and 111 West Doughton Street
Sparta, Alleghany County
PD: New River Community Partners

STANLEY FURNITURE
Intersection NC Hwy 73 and 211
West End, Moore Co.
PD: JR Square, LLC

STEVCOKNIT FABRICS
615 Old Wilmington Road
Wallace, Duplin Co.
PD: Four Points Land Development, LLC

STRATFORD METAL FINISHING
807 S. Marshall Street
Winston-Salem, Forsyth County
PD: City of Winston-Salem

TEXFI – HAW RIVER
105 Stone St.
Haw River, Alamance Co.
PD: Haw River Historic Development

TEXFI INDUSTRIES – FAYETTEVILLE
601 Hoffer Dr.
Fayetteville, Cumberland Co.
PD: City of Fayetteville

TEXFI – NEW BERN
Bosch Boulevard
New Bern, Craven County
PD: MGR, LLC

TFI FINISHING BUILDING WEST
1200 Patterson Avenue

Winston-Salem, Forsyth Co.
PD: City of Winston-Salem

THE OLD WOOD COMPANY
99 Riverside Drive
Asheville, Buncombe Co.
PD: The Old Wood Company

TOWN OF SWEPSONVILLE
2701 Darrell Newton Dr.
Graham, Alamance Co.
PD: Town of Swepsonville

TYNER STREET REDEVELOPMENT
7810-7842 Tyner St.
Charlotte, Mecklenburg Co.
PD: Tyner Street Investments, LLC

UNION CARBIDE
5400 Hovis Road
Charlotte, Mecklenburg Co.
PD: CSX Transportation, Inc.

UNITED METAL
133 Blue Bell Road
Greensboro, Guilford Co.
PD: Henron Bay Acquisition, LLC

WESLEY VILLAGE II
2000 Wesley Village Rd & 2000 Ru
Charlotte, Mecklenburg Co.
PD: Wesley Village, LLC

WEST MOREHEAD HEADQUARTERS UPFIT
2401 W. Morehead St, 2225 & 22215 Arty Ave, 2300 Wilkerson Blvd.
Charlotte, Mecklenburg Co.
PD:D & R Properties of Charlotte, LLC

WESTERN ELECTRIC – WINSTON-SALEM
800 Chatham Road
Winston-Salem, Forsyth Co.
PD: Chatham Mill Lofts, LLC

WILLARD LEAD – Right-of-Way
122 New Bern St.
Charlotte, Mecklenburg Co.
PD: New Bern Station Holdings, LLC

WILMA DYKEMAN RIVERWAY
14 Riverside Drive
Asheville, Buncombe Co.
PD: City of Asheville

WILMINGTON SCRAP IRON & METAL
710 S. 6th Street
Wilmington, New Hanover Co.
PD: Indie Ice Company, LLC

WNC STOCKYARD
157-165 Craven Street
Asheville, Buncombe Co.
PD: French Broad River Group, LLC

PROJECTS PENDING ELIGIBILITY (15)

Project Name	City	County
BASF Facility Pender County	Wilmington	Pender
Cone Mills Plant	Greensboro	Guilford
High Point South Center	High Point	Guilford
Honeywell, Former	Mars Hill	Madison
Interpane Glass	Clinton	Sampson
J. G. Harrison Site	Roxboro	Person
Pace Conservation Center	Beaufort	Carteret
Riverside Drive	Asheville	Buncombe
Scotts & Roberts	Durham	Durham
Sears Service Center	Charlotte	Mecklenburg
Spectrum Mills	Kings Mountain	Cleveland
Town of Cary Public Works Facility	Cary	Wake
Tyson Williams Project	Fuquay Varina	Wake
Webster Property	Mebane	Alamance
West Morgan	Raleigh	Wake

The Dry-Cleaning Solvent Cleanup Act Program



NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Pete Doorn, Head
Special Remediation Branch
Superfund Section
Division of Waste Management
http://portal.ncdenr.org/web/wm/dsca

Program Elements

- State-Funded, Voluntary Cleanup Program for Contaminated Dry-Cleaning Sites and Wholesale Solvent Distribution Sites

- Compliance Program to Prevent Future Releases at Operating Dry-Cleaners

Brief History

1997 Dry-Cleaning Solvent Cleanup Act

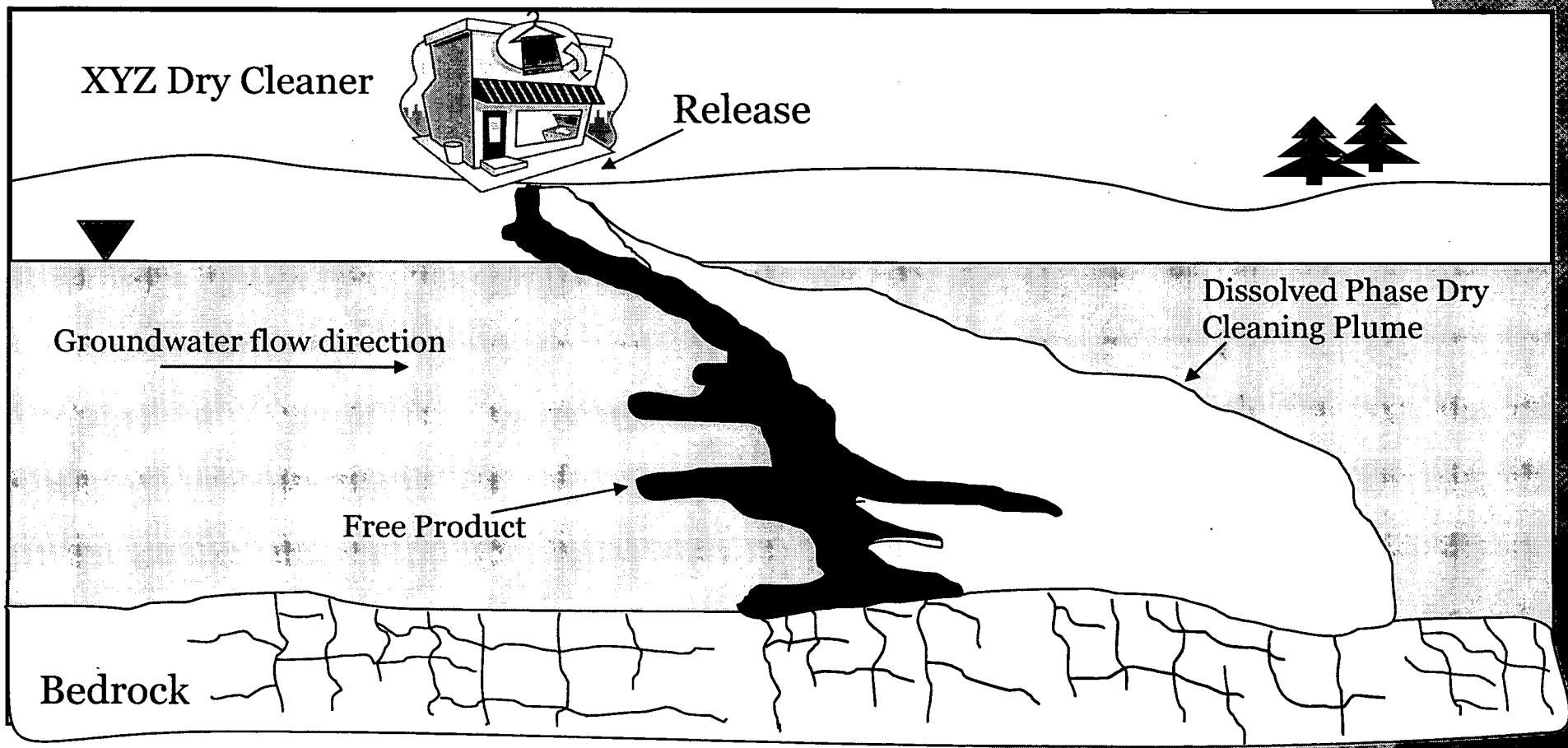
2000 Minimum Management Practices and funding changes adopted

2003 Dry-cleaning services sales tax receipts

2007 Risk-based rules adopted

2010 Program and funding re-authorized

Why is a cleanup program needed?



Dry-Cleaners in North Carolina

- Active Dry-Cleaners: 705
- Estimated # of Active & Abandoned Dry-Cleaners: 2000
- Estimated Percentage of Dry-Cleaners with Contamination: 75%
- Estimated # of Contaminated Dry-Cleaning Sites in NC: 1500

Cleanup Program Features

- Voluntary
- Environmental Work by State-Lead Independent Contractors
- Risk-Based Cleanup Goals
- Liability Protection
- Fund Pays Majority of Cleanup Costs
  - Assessment
  - Remediation
  - Actions to Protect Public Health

How it Works

- A dry-cleaner or property owner is eligible to petition a site into the Program
- The Petitioner agrees to:
  - Pay the application fee ($1000) and 1%-2% of the site costs to the Fund
  - Secure access to the site
  - Abide by the dry-cleaning minimum management practices
- An agreement is executed with the eligible Petitioner(s) and site assessment work begins

Cleanup Program Site Statistics

- 357 Identified Contaminated Sites
- 280 Sites Certified in Program
  - 233 sites undergoing Assessment/Remediation
  - 21 sites are No Further Action
  - 26 sites are being prepared for No Further Action

FY 2010-11 Funding Stats

Receipts

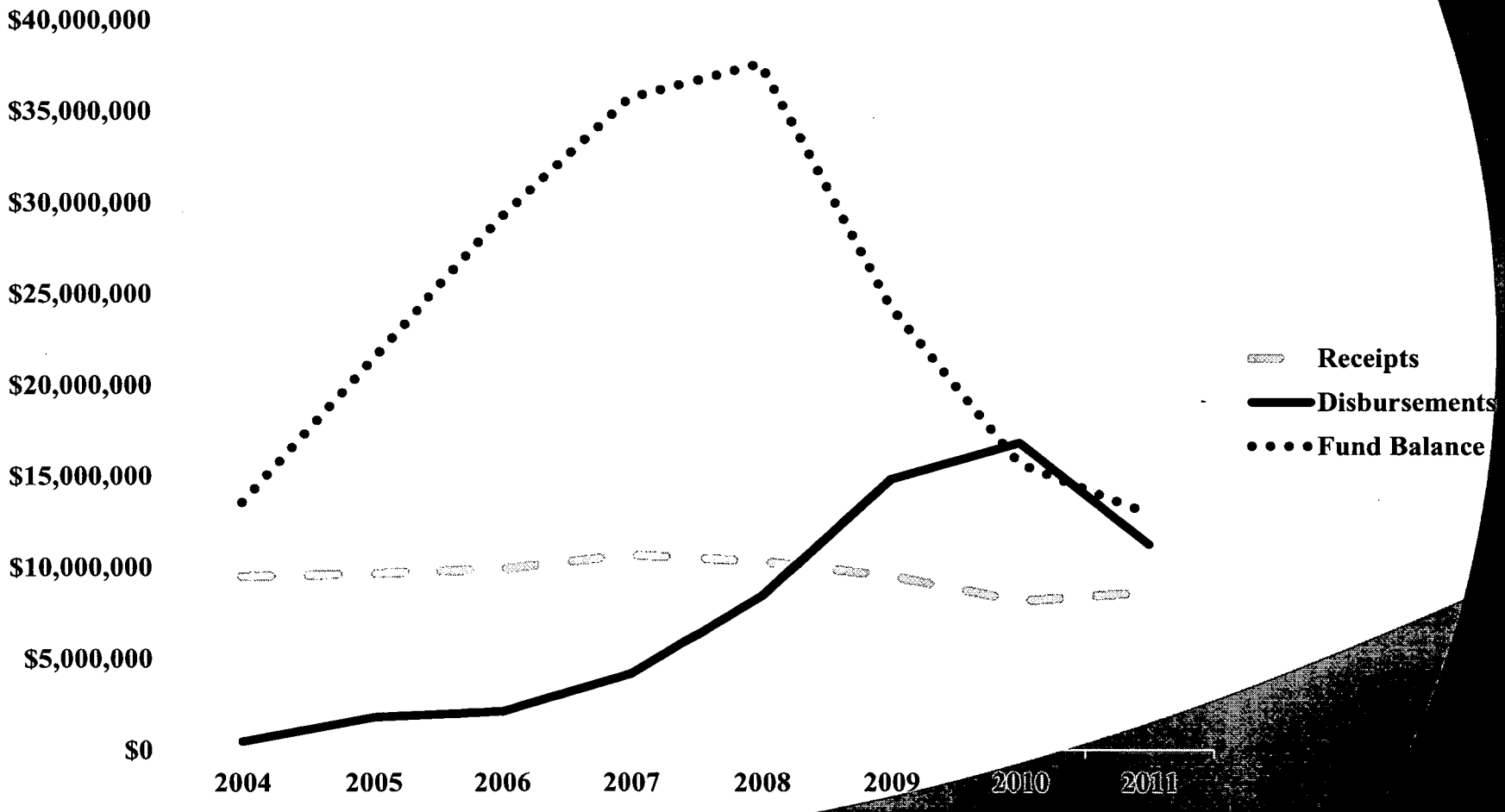
Solvent Tax Revenue:	$424,212
Sales Tax Revenue:	$7,820,356
Petitioner Payments	$233,957
Misc (file copying)	$265
Interest	$149,014
Total	$8,627,804

FY 2010-11 Funding Stats

Disbursements

Contracts	$9,402,961
Well Permit Fees	$48,890
Hazardous Waste Fees	$329,793
Transfer	$149,014
DENR Administration	$1,440,497
Total	$11,371,155

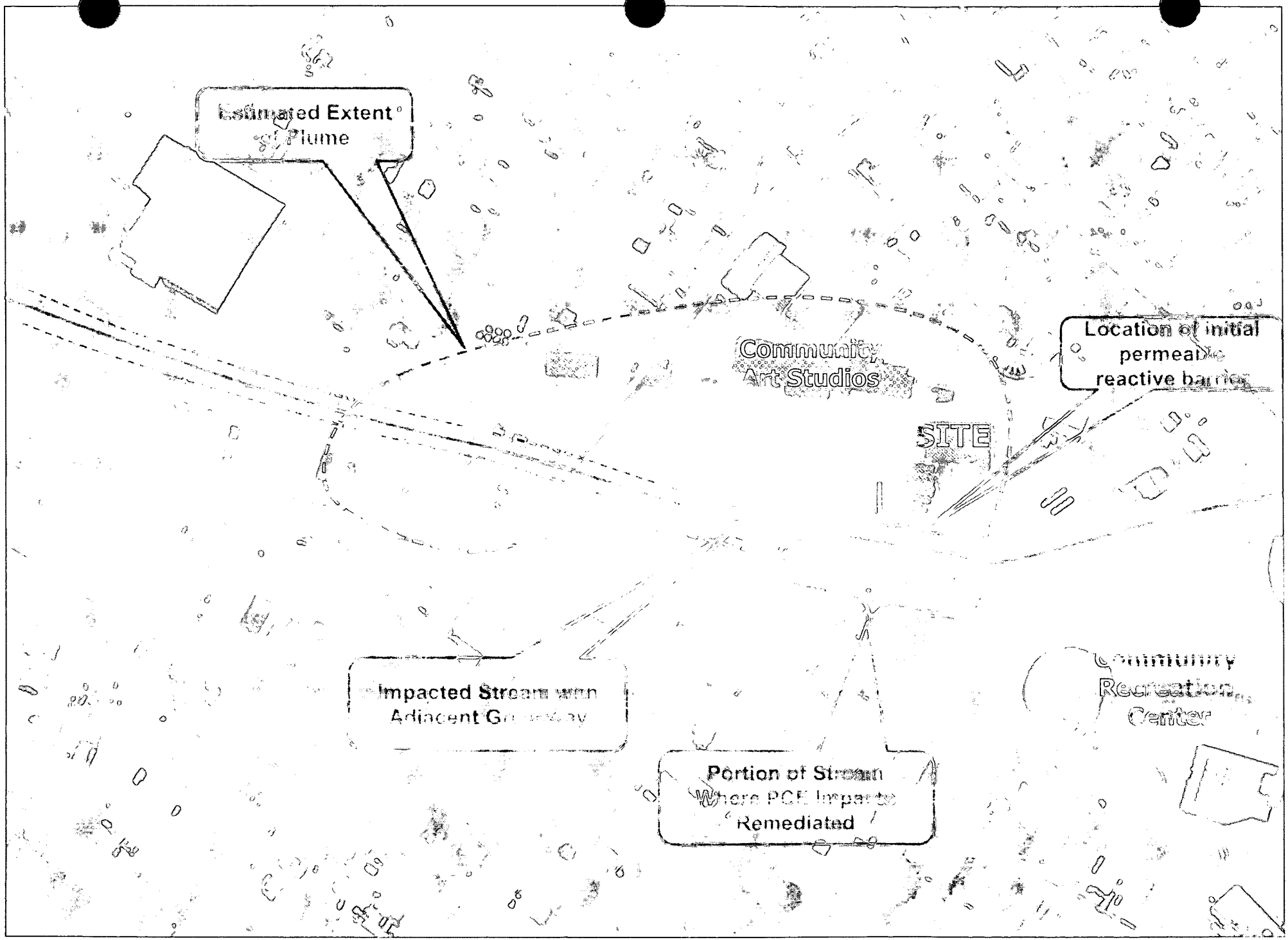
Fund History



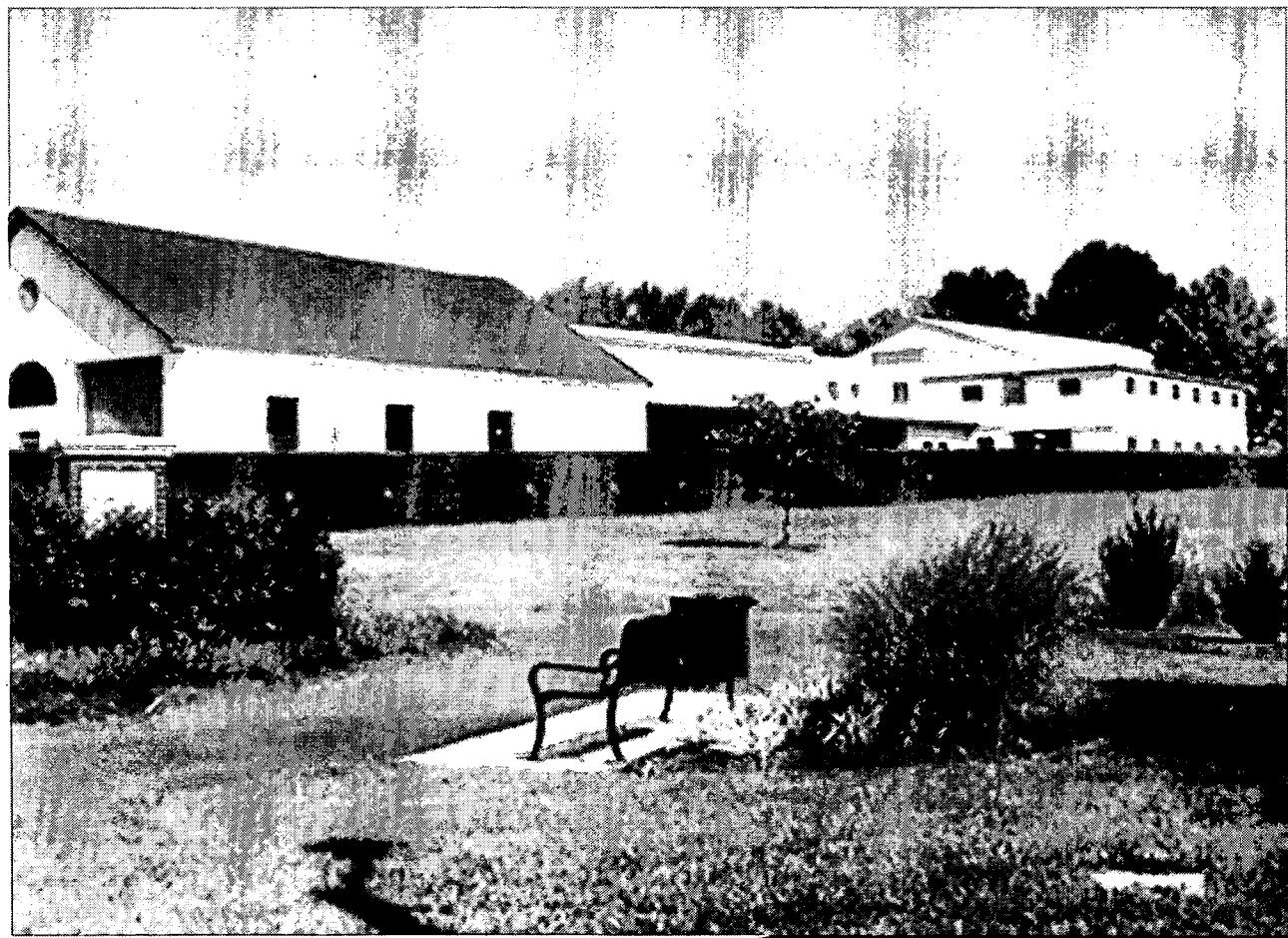
Accomplishments

- 21 cleanup sites closed (No Further Action)
- 26 additional cleanup sites ready for closure
- 34 residences and nine businesses connected to clean water supply
- Four residences and 30 businesses mitigated due to intrusion of vapors into structures
- 51 cleanup sites with soil remediation performed
- 34 cleanup sites with groundwater remediation performed

Addressing Immediate Threats to Public Health


Estimated Extent of Plume
Community Art Studios
Location of initial permeable reactive barrier
SITE
Impacted Stream with Adjacent Greenway
Portion of Stream Where PCE Impacts Remediated
Community Recreation Center

Community Benefit from Protection of Stream



Compliance Mission:

Preventing Future Releases

Compliance

- Minimum Management Practices
- Compliance Staff
- Multimedia Inspectors
  - MMPs
  - Hazardous Waste
  - Air Quality
- Compliance Assistance



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NCDENR
North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

October 12, 2011

MEMORANDUM

To: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FROM: Kari Barsness KKB
Director of Legislative and Intergovernmental Affairs

SUBJECT: Dry-Cleaning Solvent Cleanup Act Program Report (Division of Waste Management)

Pursuant to G. S. 143-215.104U, the Division of Waste Management shall submit to the Environmental Review Commission a report on the Dry-Cleaning Solvent Cleanup Act Program by October 1st of each year. Please consider the Dry-Cleaning Solvent Cleanup Act Program 2011 Annual Report attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 715-4189 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Assistant Secretary for Environment, Robin W. Smith
Dexter R. Matthews, Director, Division of Waste Management
Kristin Walker, Fiscal Research Division
Lanier McRee, Fiscal Research Division
Claire Hester, Fiscal Research Division
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Annual Report to the Environmental Review Commission North Carolina General Assembly

The Dry-Cleaning Solvent Cleanup Act Program

October 2011

NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

Division of Waste Management
Superfund Section

Department of Environment and Natural Resources

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(Our main telephone number will change to (919)707-8200 effective Monday, October 24, 2011.)

http://portal.ncdenr.org/web/wm/dsca

DRY-CLEANING SOLVENT CLEANUP ACT ANNUAL REPORT

Executive Summary

As required by the Dry-Cleaning Solvent Cleanup Act (DSCA) of 1997 and amendments (G.S. 143-215.104A *et seq.*), this report provides an annual update on activities conducted in the DSCA Program in fiscal year (FY) 2010-11. The DSCA of 1997 and its amendments created a fund for assessment and cleanup of dry-cleaning solvent environmental contamination at dry-cleaning and wholesale distribution facilities and also authorized the program to develop and enforce rules relating to the prevention of dry-cleaning solvent releases at operating facilities.

Since the start of the DSCA Program, the N.C. Department of Environment and Natural Resources' (DENR) Division of Waste Management (DWM) has identified 351 operating or abandoned dry-cleaning facilities with environmental contamination by dry-cleaning solvent. Of these, 270 have been certified into the DSCA Program.

During the life of the DSCA Program, significant progress has been made in all aspects of program implementation. The following accomplishments are noted for site remediation and protection of human health:

- 19 sites closed,
- 25 sites identified as ready for closure,
- 11 sites (including 34 residences and 9 businesses) connected to clean water supplies,
- 26 sites (including four residences and 30 businesses) mitigated due to migration of contaminant vapors into occupied buildings,
- 51 sites with soil cleanup performed, and
- 34 sites with groundwater remediation initiated.

DWM has performed educational outreach at 705 active dry-cleaning facilities in North Carolina. This educational assistance provided owners and operators with training and information to help them comply with environmental regulations. Full compliance inspections are now being performed at facilities where violations were identified during the educational outreach visits to ensure corrections were made.

The DSCA Fund continues to be solvent, with a fund balance of approximately $12.9 million and encumbered funds totaling $9.7 million. While the fund balance is lower than last year, the annual fund expenditures were reduced to help ensure that the DSCA Fund remains solvent. Based on an average site cleanup cost of $330,000, approximately $90 million will be needed to address the 270 sites currently certified in the program. DENR estimates there may be as many as 1,500 contaminated dry-cleaning sites in North Carolina. Projected costs to clean up 50 percent of those sites would exceed $250 million. The declining fund balance has required the program to ensure that funds are obligated to sites in order of priority.

Program Activity

The General Assembly enacted DSCA to: 1. cleanup contamination from dry-cleaning solvents at both retail dry-cleaners and wholesale solvent distribution sites; and 2. protect human health and the environment by preventing future dry-cleaning solvent contamination. DENR made significant progress during fiscal year 2010-11 in implementing the cleanup and compliance components of DSCA.

Site Cleanups

During the past fiscal year, DWM directed significant energy towards assessment and remediation of sites with contamination from dry-cleaning solvents. DWM also undertook new initiatives related to vapor intrusion (indoor air pollution from solvent contamination in the soil or groundwater) and revised the system for prioritizing sites for cleanup.

Sites in Program

Table 1 provides the current statistics for sites certified into the DSCA Program. A site becomes certified when a petitioner enters into an assessment and remediation agreement with DWM. A list of certified sites along with current site status is shown in Appendix A. During FY 2010-11, DWM staff and the program's five independent contractors performed the following activities:

- screening of sites for imminent hazards such as threatened water supply wells and vapor intrusion into buildings,
- abatement of indoor vapor hazards from contaminated soils and groundwater,
- comprehensive site assessments delineating extent of contamination,
- removal and remediation of contaminated soil,
- groundwater remediation, and
- demolition and removal of a former dry-cleaning facility building that was condemned due to high solvent vapor concentrations in indoor air.

Rules that establish a risk-based approach to assessing and cleaning up certified sites in the DSCA Program became effective on Oct. 1, 2007. These rules and associated guidance allow program staff to determine the risk posed to human health and the environment at each site and, if necessary, to calculate the appropriate cleanup levels for soil and groundwater.

Since the start of the DSCA Program, 19 DSCA sites have been closed. DWM has determined that no further remediation will be required at an additional 25 sites (see "Sites Pending Closure" in Table 1). The closure process consists of the preparation of a risk management plan that typically includes land-use restrictions and a plat map of the site. DSCA requires that these documents be provided to the appropriate local governments (counties and municipalities) and also made available to the public through publication in local newspapers, direct mailings to property owners on or adjacent to the contamination site and by posting a notice at the site.

At 11 sites, DWM took immediate action to connect 34 residences and nine businesses with contaminated water supply wells to municipal water lines. DWM installed vapor control systems at 26 sites to prevent the infiltration of contaminant vapors into four residences and 30 businesses.

Soil and/or groundwater cleanup will be needed at many DSCA sites to protect human health and the environment. Soil excavation and, where necessary, soil-vapor extraction has been conducted at 51 sites to remove contaminant sources that threaten indoor air in buildings and cause further degradation of groundwater. Remediation of groundwater has been initiated at 34 locations.

Alternative Solvent Study

In April 2009, the DSCA Program discovered high indoor air concentrations of the most common dry-cleaning solvent, perchloroethylene (PERC), in an occupied building that last operated as a dry cleaner in 1975. DWM determined that the high levels of indoor air pollution came from severely contaminated soil, groundwater and building materials that are currently being remediated by the program. Following this discovery, the DSCA Program became concerned that vapor intrusion may be a significant problem at DSCA sites with buildings that are or were occupied by PERC dry cleaners. As a result, DWM issued a policy memorandum on September 10, 2009 outlining the procedures that staff and DSCA assessment and remediation contractors must follow to ensure appropriate testing and evaluation of potential indoor air pollution. The policy required collection of indoor air and sub-slab vapor samples during the initial phase of site assessment in spaces that formerly housed PERC dry-cleaners and in units located immediately adjacent to operating PERC cleaners that share a common roof with the cleaner.

Understanding and addressing indoor air pollution from PERC releases continues to be a high priority for the DSCA Program, since many DSCA sites have occupied structures on or adjacent to the PERC contamination. Testing has identified a number of buildings where soil and/or groundwater contamination has produced unacceptably high concentrations of PERC vapor in indoor air that required mitigation. In some commercial buildings that house both operating PERC dry cleaners and other businesses, elevated PERC levels in some tenant spaces appear to be caused by vapors from the normal operations of the dry cleaner rather than from contaminated soil or groundwater. While the concentrations found are below Occupational Safety and Health Administration (OSHA) permissible exposure limits for the work place, in some locations the PERC vapors exceed the level that would require remediation under the DSCA Program .[1]

In 2000, the North Carolina General Assembly directed the formation of a working group to study dry-cleaning processes and equipment that could be implemented as potential alternatives to the predominant existing dry-cleaning technologies, especially those that use PERC. This group consisted of a variety of stakeholders, including representatives from conservation groups, the dry-cleaning industry, dry-cleaning equipment and solvent

[1] The OSHA standards for work place exposure have not been updated in a number of years and allow a much higher level of exposure than EPA's more recent health-based remediation standards.

manufacturers, researchers and government agencies. The group submitted a final report to the General Assembly in 2001 detailing findings and offering recommendations for consideration. This report did not evaluate the health effects of solvent vapors to people in other businesses co-located with dry cleaners.

In June 2008, the U.S. Environmental Protection Agency (EPA) released a draft toxicological review of PERC that included a proposed modification of PERC's cancer risk classification from a possible carcinogen to a probable carcinogen. In light of the EPA review and new information obtained from the DSCA Program's vapor intrusion investigations, the N.C. Occupational and Environmental Epidemiology Branch (part of the N.C. Department of Health and Human Services) is revisiting its conclusion, presented in the 2001 report, that PERC, as currently used in the dry-cleaning industry, does not pose a significant human health risk to the general population. A new study group, led by DWM and composed of stakeholders representing industry, environmental conservation, government and academic organizations, formed in September 2010 to reevaluate the conclusions of the 2001 alternatives study in light of this new information. The study group hopes to complete a report of its findings and recommendations in March of 2012.

New Site Prioritization System

DSCA requires that site cleanup disbursements be made on higher priority sites first. Recent information obtained from the program's vapor intrusion investigations indicates that this type of direct human exposure may be occurring at a number of DSCA sites. To ensure that this particular health concern receives appropriate attention, the program has revised its method for assigning priority ranking to take these risks into consideration. A new system has been developed, and DSCA is currently establishing a process to incorporate the new system into its planning and budgeting of available funds.

DSCA Amendment

Many sites with dry-cleaning solvent contamination require land-use restrictions to prevent use or installation of water supply wells on the property because of groundwater contamination that remains even after remediation has been completed. S.L 2011-186 included a provision requiring DENR to send a notice to owners of property subject to land-use restrictions applied pursuant to a DSCA cleanup if the owners failed to provide an annual certification that the restrictions were being maintained. The notice would allow 30 calendar days for the owners to respond before enforcement actions could be taken.

Investigation of Potential New Sites

An amendment to DSCA that went into effect in 2007 allowed the program to spend up to one percent of the DSCA fund balance each year to identify active and abandoned dry-cleaning sites that the program believes may be contaminated. If contamination is found that is attributed to a facility, the potential responsible party may be given the choice of entering the

program as a petitioner or allowing the site to be addressed under the Inactive Hazardous Sites Program. If they choose the latter, the responsible party may be required to reimburse the program for all of the investigation costs. The program has either completed or is performing this type of investigation at 30 sites. Twenty-four of those sites have been certified into the DSCA Program.

The program is using a variety of sources to identify new sites across the state. Data from the Inactive Hazardous Sites Program, the Underground Storage Tank Program and the Public Water Supply Program reveal water supply well samples containing contaminants that may have originated from dry-cleaning operations. The locations of more than 2,000 active and abandoned dry-cleaning facilities are used to identify those that are close to the contaminated wells. Analysis of this data has helped the program identify a number of sites where DSCA contractors will perform sampling using the one percent investigative allowance.

DSCA Contracts

The program currently is managing five contracts, with a total encumbrance of $8.8 million. The purpose of the contracts is to establish terms and conditions by which qualified environmental engineering firms assess and remediate contaminated dry-cleaning sites in the DSCA Program.

Identified Contamination Sites

A total of 351 sites contaminated by dry-cleaning solvents have been reported to DWM. As noted in Table 1, 270 of these sites have been certified into the program. Appendix A provides a list, by county, of all of the 351 known sites contaminated with dry-cleaning solvent and the subset that have been certified into the program. A total of 19 new dry-cleaning solvent releases were reported to DWM in 2011. As noted above, the program anticipates that additional contamination sites will be identified using the one percent investigative allowance in 2012.

Outreach

DWM staff continue to provide training on the cleanup program when requested. A brochure describing the program has been produced. Letters have been sent to property owners of former dry-cleaning facilities to inform them of the potential for contamination and the benefits that are provided by the program. The DSCA website continues to be used to distribute program documents and data to the public.

Table 1. Cumulative DSCA Site Statistics (for the life of the program)

Certification Status	Number	Percent of Total
Contaminated Sites	351	---
Sites Certified	270	77
Sites Determined Ineligible	21	6
Sites not Certified	60	17
Site Status		
Sites Certified	270	---
Certified Sites in Assessment and Remediation	226	84
Certified Sites Pending Closure	25	9
Certified Sites Closed	19	7
Site Classification of Certified Sites		
Abandoned	177	65
Wholesale Distribution	2	1
Operating	91	34
Size Distribution of Operating Sites		
Small Size (1-4 employees)	47	52
Medium Size (5 - 9 employees)	24	26
Large Size (> 10 employees)	20	22

Facility Compliance

The Environmental Management Commission has been authorized under DSCA to develop rules that operating dry-cleaning facilities must follow to prevent environmental contamination by dry-cleaning solvents. These rules, or Minimum Management Practices (MMPs), were adopted in 2001 as temporary rules and approved as permanent rules in 2002. In 2005, the DSCA Program created and filled a new position that coordinates compliance assistance visits and formal inspections of facilities and also serves as the lead for enforcement actions where necessary.

In addition to the program's MMP regulations, DWM also entered into a memorandum-of-agreement with the N.C. Division of Air Quality that enables DWM staff to perform compliance inspections for air quality regulations that are applicable to dry-cleaning facilities. Enforcement authority is delegated to the DWM for violations of the air quality rules. This allows one program in DENR to ensure compliance with all environmental regulatory requirements and give dry cleaners and the public a single DENR point-of-contact for compliance questions or concerns.

Educational Assistance Visits

DWM inspectors have provided educational assistance to 705 active dry-cleaning facilities, many of which had never been inspected by a DENR program. This outreach trains owners and operators regarding the MMPs, hazardous waste managment and air quality regulations. Inspectors also use these visits to thoroughly document all compliance issues that are observed.

Inspections and Enforcement

Full compliance inspections are now being conducted at facilities where violations were identified during the outreach visits to ensure that sufficient corrections have been made. During 2011, full inspections were performed at 273 facilities, and outreach visits performed at 21 facilities. Violations identified included discharge of solvent-containing water; failure to install a spill containment pan under the dry-cleaning machine; failure to use a closed solvent connection to transfer new solvent into the machine; and failure to properly containerize and store waste solvent in spill containment.

Additional Compliance Outreach

Since 2007, the DSCA Program has produced a PERC compliance calendar that provides all applicable rules, recordkeeping, guidance and reference information in one document for the convenience of facility owners and operators. Mailed or hand-delivered to more than 500 facilities across the state, the calendar has received positive reviews from both dry-cleaners in North Carolina and industry officials in other states, where it has been praised for its comprehensive scope and functionality.

Program Financial Status and Projections

Fund Receipts and Disbursements

The primary funding sources for the dry-cleaning solvent cleanup fund are a tax on dry-cleaning solvents, the state portion of the current sales tax on dry-cleaning, deductible payments from petitioners participating in the cleanup program and interest earned on the account. Disbursements consist primarily of payments to the program's independent contractors for site assessment and remediation, reimbursements to petitioners for past-cost claims and program administration costs.

The DSCA Fund's finances through fiscal 2010-11 (ending June 30, 2011) are summarized below:

Receipts	**FY 2010-11**	**Duration of Program (through 6/30/11)**
Solvent Tax Revenue	$ 424,211.90	$ 10,259,580.03
Sales Tax Revenue	7,820,355.81	63,238,692.13
Petitioner Payments	233,957.39	951,660.58
Miscellaneous (file copying)	264.89	311.93
Rebate	18,133.69	28,794.34
Interest	149,013.93	7,311,146.72
Total	$ 8,645,937.61	$ 81,790,185.98
Disbursements		
Dept. of Revenue[1]	$ 0	$ 57,272.02
Reimbursements to Petitioners	0	1,905,566.88
Contracts	9,402,961.03	49,718,007.57
Well Permit Fees	48,890.00	119,370.00
Hazardous Waste Fees	329,792.77	649,117.61
Transfer to Inactive Haz Sites	0	400,000.00
Transfer to Green Square Proj.	0	1,291,035.00
Transfer – Budget Shortfall	149,013.93	6,475,812.93
DENR Administration	1,440,496.79	8,229,915.22
Total	$ 11,371,154.52	$ 68,846,097.23

Total Receipts	$ 81,790,185.98
Total Disbursements	-68,846,097.23
Fund Balance	**$ 12,944,088.75**
Funds Encumbered in Contracts	$ 9,684,111.20

1 This represents the actual amount charged by the Department of Revenue for its expenses. The Department of Revenue is authorized by DSCA to charge no more than $125,000 per year.

Two transfers from the DSCA Fund totaling $149,013.93 were made in fiscal year 2010-11 to address the budgetary shortfall.

Estimated Future Assessment and Remediation Expenditures

During fiscal year 2010-11, fund expenditures directly related to implementation of DSCA decreased from previous years (see DSCA Related Disbursements in Table 2 and Figure 1). This reduction resulted from the need to balance expenditures with incoming receipts in combination with implementing a revised prioritization system to ensure that available funds are spent properly. Site work expenditures have reduced the fund balance from its peak of $37.6 million in 2008 to $12.9 million in 2011. Fund receipts increased approximately $0.5 million from 2010 to 2011, primarily due to the one percent sales tax increase in 2009, which

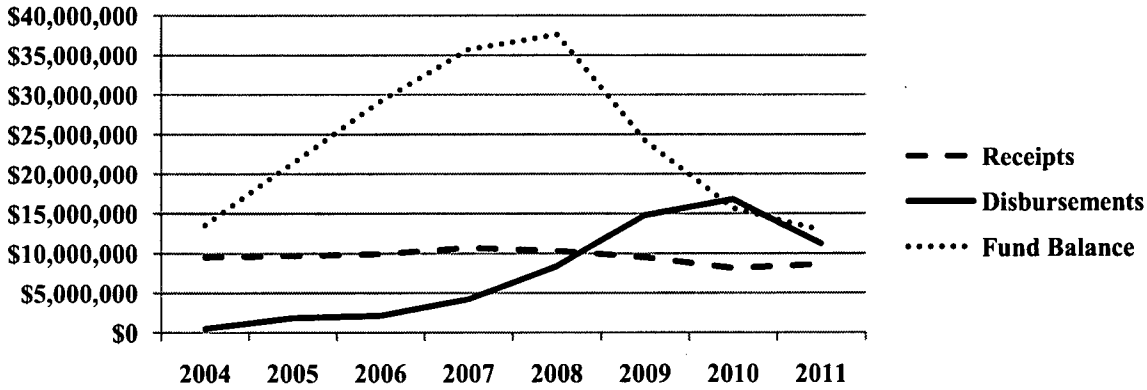
accrued in 2010 and is now reflected in the incoming receipts. However, revenues from the dry-cleaning solvent tax have steadily declined since 2004.

Table 2: Historic DSCA Fund Statistics

Year	Receipts	Total Disbursements	DSCA-Related Disbursements	Fund Balance
2004	9,487,233.94	489,024.96	489,024.96	13,547,987.50
2005	9,660,612.84	1,806,911.93	1,806,911.93	21,401,688.41
2006	9,913,615.29	2,126,835.62	2,126,835.62	29,188,468.08
2007	10,687,669.06	4,184,051.63	4,184,051.63	35,692,085.50
2008	10,307,540.95	8,413,240.75	8,413,240.75	37,586,385.71
2009	9,513,473.12	*22,818,089.84	14,803,890.84	24,323,877.49
2010	8,147,167.40	**16,812,337.01	16,808,702.01	15,669,305.66
2011	8,645,937.61	***11,371,154.52	11,222,140.59	12,944,088.75

* Includes $8,014,199 for non-DSCA related transfers
** Includes $3,635 for non-DSCA related transfers
*** Includes $149,013.93 for non-DSCA related transfers

Figure 1: DSCA Fund Trends



Based on cost figures provided by other states, DSCA can calculate an approximate total cleanup cost for those sites that have been certified into the program. Using an average total cleanup cost of $330,000 per site, approximately $90 million (not including DENR's administrative costs) will be needed to address the 270 sites currently certified in the program. Based on data from the N. C. Department of Labor, there are at least 2,000 active and abandoned dry-cleaning facilities in the state. Investigations performed across the nation indicate that contamination is present in about 75 percent of all dry-cleaning operations. Applying this percentage to the number of current and former facilities in North Carolina, a total of 1,500 contaminated sites may be present, equaling an estimated $500 million in cleanup costs. If only 50 percent of these contaminated sites are accepted into the DSCA Program, the projected total cleanup cost (adjusted for inflation) would be approximately $250 million.

DSCA Administrative Costs

According to DSCA, up to 20 percent of annual revenues deposited into the fund may be used by DENR and the North Carolina Attorney General's Office to administer the program. The decline in annual receipts since 2008 combined with the gradual growth of the program have resulted in the administrative costs-to-revenue ratio increasing from 10.5 percent to 16.7 percent. This ratio has remained unchanged over the past two years.

Recommendations to Ensure Fund Solvency

Increased expenditures on site cleanup actions have substantially reduced the fund balance since 2008. As a result, funds must be carefully administered to ensure that sites are addressed in priority order. Lower priority sites requiring remediation are now being placed on hold until funds become available for those sites.

As noted above, total collections for fiscal 2010-11 were approximately $8.6 million. The fund has a balance of approximately $12.9 million, with encumbered monies totaling $9.7 million. The DSCA Fund is solvent.

Appendix A
Sites with Dry-Cleaning Solvent Contamination by County and City and Sites Certified into the DSCA Program by County and City
(Certified Sites are *bold*, Site Status definitions follow Appendix A)

County, City, ID	Name and Address	Site Status
Alamance (9)		
Burlington		
001-0002	Workman Property, 1361 N Church St	
001-0003	***A Cleaner World, 2781 S Church St***	***Interim Action***
001-0004	***RE Boone Cleaners, 306 N Main ST***	***Assessment***
001-0006	***McPherson Cleaners, 2469 S Church ST***	***NFA***
001-0008	***Norge Laundry & Cleaning Village, 2102 W Webb AVE***	***Assessment***
001-0009	***Boston Cleaners, 2182 N Church ST***	***Assessment***
001-0010	***Regal Cleaners, 1603 S Church ST***	***Assessment***
Graham		
001-0001	***Harden Cleaners, 218 W Harden St***	***Closure***
001-0005	***Impressive Cleaners, 226 W Harden ST***	***Assessment***
Beaufort (1)		
Washington		
007-0001	$2.99 A Cleaner, 180 W 15th ST	
Brunswick (2)		
Calabash		
010-0002	***Love Cleaners, Inc., 9956 Beach Dr***	***NFA***
Southport		
010-0001	***Towngate Cleaners, 715 N Howe St***	***Monitoring***
Buncombe (6)		
Asheville		
011-0001	***Swannanoa Laundry, 22 Church St***	***Interim Action***
011-0004	***Swannanoa Cleaners, 712 Merrimon Ave***	***Assessment***
011-0005	***Nu-Way Cleaners, 171 Patton Ave***	***Interim Action***
011-0006	***Blue Ridge Cleaners, 1378 Hendersonville Rd***	***NFA***
011-0007	***Swannanoa Cleaners, 1336 Patton AVE***	***Interim Action***
011-0008	Crisp One Hour Cleaners, 121 Biltmore AVE	
Burke (3)		
Morganton		
012-0001	***Ferree Cleaners, 406 S Sterling St***	***Assessment***
012-0002	***Jordan's Cleaners, 302 College St***	***Monitoring***
012-0003	Superior Cleaners, 242 W Fleming DR	
Cabarrus (4)		
Concord		
013-0001	***Fuller Supply Company, 191 NW Crowell Dr***	***Interim Action***
013-0002	***Caldwell Cleaners, 800 N Church St***	***Assessment***
013-0004	Sunrise Cleaners, 14 E Cabarrus AVE	
Kannapolis		
013-0003	Jaye's One-hour Cleaners, 1803 N Main St	

Appendix A
Sites with Dry-Cleaning Solvent Contamination by County and City and Sites Certified into the DSCA Program by County and City
(Certified Sites are *bold*, Site Status definitions follow Appendix A)

County, City, ID	Name and Address	Site Status
Carteret (2)		
Morehead City		
016-0001	***Coastal Dry Cleaners, 3000 Arendell St***	***Monitoring***
016-0002	***Sunshine Cleaners, 1612 Bridges ST***	***Monitoring***
Catawba (2)		
Conover		
018-0001	***Conover Cleaners, 430 Conover Blvd***	***Interim Action***
Hickory		
018-0002	***One Hour Cleaners, 1925 NE 12th AVE***	***Assessment***
Chatham (1)		
Chapel Hill		
019-0001	***Cole Park Cleaners, 11552 A US Hwy 15 501 N***	***Monitoring***
Cleveland (3)		
Shelby		
023-0001	***Folks Dry Cleaners, 1165 E Marion St***	***Closure***
023-0002	***Folk's Cleaners, 200 W Marion ST***	***Assessment***
023-0003	Bills One Hour Cleaners, 410 S Lafayette ST	
Cumberland (12)		
Fayetteville		
026-0001	***Mayflower Laundry And Dry Cleaning, 512 W Russell St***	***Monitoring***
026-0002	***Easy Wash Dry Cleaners, 5308 Bragg Blvd***	***Assessment***
026-0003	***Smittys Cleaners, 3060 Owen Dr***	***Assessment***
026-0004	***Kore-o-mat Laundromat, 3311 Bragg Blvd***	***Assessment***
026-0005	***Davis Cleaners, 1672 Owen Dr***	***Assessment***
026-0006	***One Hour Koretizing Cleaners, 4924 Raeford Rd***	***Assessment***
026-0007	***Parker Cleaners, 4950 Bragg BLVD***	***Assessment***
026-0008	***Verne's Cleaners, 6341 Bragg BLVD***	***Assessment***
026-0010	***Highland Cleaners, 2609 Raeford RD***	***Assessment***
026-0012	Hamont Cleaners, 5228 Bragg BLVD	
026-0013	A&H Cleaners, 4515 Bragg BLVD	
Spring Lake		
026-0009	***Crown Cleaners, 115 S Main ST***	***Interim Action***
Dare (3)		
Kitty Hawk		
028-0003	Outer Banks Cleaners, Inc., 5593 N Croatan HWY	
Manteo		
028-0001	***Ange Speed Wash, 118 US 64***	***Assessment***
028-0002	***Outer Banks Cleaners, 414 US HWY 64***	***Assessment***
Davidson (2)		
Lexington		
029-0001	***Country Club Cleaners, 972 S Main St***	***Certified***

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County, City, ID	Name and Address	Site Status
Davidson (2)		
Thomasville		
029-0002	***Young's Cleaners, 501 Randolph ST***	***Assessment***
Davie (2)		
Advance		
030-0002	***K&R Cleaners, 5289 US 158 HWY***	***Investigation***
Mocksville		
030-0001	***Fallies Dry Cleaning, 899 S Main St***	
Durham (19)		
Chapel Hill		
032-0016	***Carolina Cleaners, 2214 Nelson HWY***	***Closure***
Durham		
032-0001	***One Hour Koretizing, 4404 N Roxboro ST***	***Interim Action***
032-0002	***Plants Unlimited, 3535 Hillsborough Rd***	***Assessment***
032-0003	***Triangle Square Cleaners, 4871 Apex Hwy***	***Assessment***
032-0004	Eakes Cleaners, 827 W Morgan St	
032-0005	***American Dry Cleaners, 4711 Hope Valley Rd***	***Assessment***
032-0006	American Drycleaners, 700 Mallard Ave	
032-0007	***Model Laundry, 1001 Holloway St***	***Assessment***
032-0008	***W.P. Ballard, 639 Junction Rd***	***Interim Action***
032-0009	***TNT Cleaners, 5314 N Roxboro Rd***	***Monitoring***
032-0010	***Weavers Cleaners, 1212 Fayetteville St***	***Interim Action***
032-0011	***Scott And Roberts Dry Cleaners, 733 Foster St***	***Assessment***
032-0012	***Shannon Dry Cleaning and Laundromat, 3710 Shannon Rd***	***Monitoring***
032-0013	***BB&T, 1103 West Club Blvd***	***Remediation***
032-0014	***Hollywood Dry Cleaners, 3823 Guess Rd***	***Closure***
032-0015	***Durham Dry Cleaners, 2526 B Erwin RD***	***Assessment***
032-0017	***Durham Animal Clinic, 4306 North Roxboro RD***	***Assessment***
032-0018	H & S Cleaners, 105 W NC Highway 54, Suite 201	
032-0019	***New Method Laundry & Dry Cleaners, 1201 W Chapel Hill ST***	***Certified***
Edgecombe (2)		
Rocky Mount		
033-0002	***Thorne's Dry Cleaners, 502 Rose ST***	***Assessment***
033-0003	Prestige Cleaners, 620 E Thomas ST	
Forsyth (26)		
Kernersville		
034-0004	Hooker Furniture, 210 N Main St	
034-0007	***Camelot Cleaners, 820 S Main St***	***Assessment***
034-0021	***Modern Cleaners, 211 N Main ST***	***Assessment***
034-0022	Warren Dry Cleaners, 129 Church LN	
034-0023	Classic Cleaners, 205 Bodenhamer ST	
034-0031	A Cleaner World #175, 611 N Main ST	

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County, City, ID	Name and Address	Site Status
Forsyth (26)		
Winston-Salem		
034-0002	***Shores Cleaners, 692 Hanes Mall Blvd***	***Assessment***
034-0003	A Cleaner World, 1221 W Academy St	
034-0005	***$2.75 Cleaners, 1322 S Hawthorne Rd***	***Monitoring***
034-0006	Young Cleaners, 4309 N Liberty St	
034-0008	***Hour Glass Cleaners, 5955 University Pky***	***Monitoring***
034-0009	***Smith Dry Cleaners, 310 N Martin Luther King Jr Dr***	***Assessment***
034-0011	***Camelot Cleaners, 1218 Waughtown St***	***Assessment***
034-0012	***A Cleaner World, 3251 Healy Dr***	***Assessment***
034-0013	***A Cleaner World #161, 101 S Peacehaven Rd***	***NFA***
034-0014	***Camel City Cleaners, 2808 Reynolda Rd***	***Assessment***
034-0015	***Camel City Laundry, 501 E 3rd St***	***Monitoring***
034-0016	***$2.50 Krystal Cleaners, 357 Jonestown Rd***	***Monitoring***
034-0017	***Trade Street Cleaners, 426 N Trade Street***	***Monitoring***
034-0018	***U.S. $2.09 Cleaners, 3915 Country Club Rd***	***Assessment***
034-0020	***XL Cleaners, 3001 Unviversity Pky***	***Assessment***
034-0024	***Sunshine Cleaners, 5013 Country Club RD***	***Assessment***
034-0025	Smith Cleaners, Inc., 2802 University PKY	
034-0027	***Davis-Frye Cleaners, 704 Waughtown ST***	***Assessment***
034-0028	***One Hour Martinizing, 4332 Old Walkertown RD***	***Assessment***
034-0029	***One Hour Martinizing, 4001 Country Club RD***	***Assessment***
Gaston (6)		
Belmont		
036-0001	Untz Drycleaners, 514 Woodlawn Ave	
036-0005	***Prestown Cleaners & Laundry, 91 McAdenville RD***	***Interim Action***
Gastonia		
036-0002	Carsons Drycleaners, 401 N CHESTER St	
036-0003	***De-lux Cleaners, 2529 W Franklin Blvd***	***Assessment***
036-0004	***Union Road Cleaners, 2210 Union Rd***	***NFA***
036-0006	***One Hour Martinizing, 143 E Franklin BLVD***	***Assessment***
Granville (1)		
Oxford		
039-0001	Oxford Dry Cleaners, 700 Hillsboro St	
Guilford (35)		
Greensboro		
041-0001	***Cleaner Image, 4711 Lawndale Dr***	***Monitoring***
041-0002	***Cinderella Cleaners, 2043 Martin Luther King Jr Dr***	***Assessment***
041-0003	***U.S. $1.75 Cleaners, 2900 Randleman Rd***	***Closure***
041-0004	Columbia Laundry Corp, 2507 Battleground Ave	
041-0007	***Master Kleen, 5324 Liberty Rd***	***Monitoring***
041-0009	***Everhart Dry Cleaners, 1000 Summit Ave***	***Assessment***
041-0010	Glam-o-rama, 719 E Market St	

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County, City, ID	Name and Address	Site Status
Guilford (35)		
Greensboro		
041-0011	O Henry Cleaners, 3210 Summit Ave	
041-0014	***Master Kleen Cleaners, 3402 High Point Rd***	***Assessment***
041-0015	***Quality Cleaners, 4117 Spring Garden St***	***Certified***
041-0017	***Premier Cleaners, 513 Summit Ave***	***Assessment***
041-0018	***Dry Clean America, 403 W Meadowview Rd***	***Assessment***
041-0019	***Burnetts Cleaner And Laundry, 1932 E Market St***	***Assessment***
041-0022	Fordhams Cleaners, 1900 Spring Garden St	
041-0023	***A Cleaner City, 2804 Battleground Ave***	***Assessment***
041-0024	***A Cleaner World #162, 4506 High Point Rd***	***Assessment***
041-0025	Cleaner, 611 S Eugene St	
041-0026	***A Cleaner World #168, 1949 Battleground Ave***	***Assessment***
041-0028	***Columbia Laundry, 920 E Bessemer Ave***	***Closure***
041-0029	***Presto Cleaners, 4625 High Point Rd***	***Assessment***
041-0033	***A Cleaner World #182, 531 College RD***	***Assessment***
041-0034	***Village Laundry, 707 College RD***	***Assessment***
041-0035	The Cleaners, 829 W Lee ST	
041-0036	New Era Cleaners, 954 E Bessemer AVE	
041-0038	***Phoenix Supply Company, 2701 Branchwood DR***	***Assessment***
041-0039	One Hour Martinizing, 2519 High Point RD	
High Point		
041-0005	Dutch Cleaners, 800 S Main St	
041-0006	***Eastgate Cleaners, 101 Greensboro Rd***	***Assessment***
041-0013	***Banner Laundry, 2117 N Main St***	***Assessment***
041-0016	$2.50 Pro Cleaners, 2406 N Main St	
041-0021	***Gingiss Formal Wear, 906 N Main St***	***Assessment***
041-0030	***$2.50 Cleaners, 1310 N Centennial St***	***On Hold***
041-0031	***A Cleaner World #102, 2517 S Main ST***	***Assessment***
Jamestown		
041-0008	***A Cleaner World, 102 W Main St***	***Assessment***
Stokesdale		
041-0032	***Stokesdale Cleaners, 8604 Ellisboro RD***	***Assessment***
Haywood (1)		
Waynesville		
044-0001	*Central Cleaners, 44 Church ST*	*Certified*
Henderson (2)		
Hendersonville		
045-0001	***Blue Ridge Cleaners, 503 E Seventh Ave***	***NFA***
045-0002	***Carolina Cleaners, 120 N Barnwell St***	***Assessment***
Hoke (1)		
Raeford		
047-0001	***Smitty's Cleaners, 214 N Main St***	***Assessment***

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Iredell (5)		
Statesville		
049-0001	Smiths Dry Cleaners, 225 Gordon St	
049-0002	***Johnson Cleaners, Inc., 1563 E Broad St***	***NFA***
049-0003	***Brookdale Cleaners, 975 Davie Ave***	***Assessment***
049-0006	Campbell Cleaners, 634 S Center ST	
Troutman		
049-0004	***Campbell's Cleaners, 171 Wagner St***	***Closure***
Johnston (1)		
Smithfield		
051-0002	***Glam-O-Rama Cleaners, 716 E Market St***	***Assessment***
Lee (1)		
Sanford		
053-0001	***Dryclean Express, 1117 Spring Ln***	***Remediation***
Lenoir (2)		
Kinston		
054-0001	***Vicks Cleaners, 2405 N Heritage St***	***Assessment***
La Grange		
054-0002	***The Cleaners, 603 E Washington ST***	***Assessment***
Lincoln (3)		
Denver		
055-0003	***Lowe's Cleaners, 3866 Hwy 16 North***	***Interim Action***
055-0004	US $2.50 Cleaners, 7558 NC 73 HWY	
Lincolnton		
055-0002	***Lincoln Laundry and Dry Cleaners, 1220 E Main ST***	***Assessment***
Martin (2)		
Robersonville		
059-0001	***Williford Cleaners, 203 E Academy St***	***Assessment***
Williamston		
059-0002	Town & Country Cleaners, 617 Washington St	
Mcdowell (1)		
Old Fort		
056-0001	***Nichols Laundry And Dry Cleaning, 91 Catawba Ave***	***Assessment***
Mecklenburg (65)		
Charlotte		
060-0001	***A Cleaner, 5333 Monroe Rd***	***Assessment***
060-0002	***American Dry Cleaning Company, 309 E Morehead St***	***Monitoring***
060-0004	***Minute Man Cleaners, 3042 Eastway Dr***	***Assessment***
060-0005	***Mitchells Formal Wear Warehouse, 115 Scaleybark Rd***	***Interim Action***
060-0006	Peoples Cleaners, 1930 Beatties Ford Rd	
060-0007	***Quail Dry Cleaners, 8538 Park Rd***	***Closure***
060-0008	***Sno-white Cleaners And Launderers, 4400 Sharon Rd***	***Monitoring***

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County, City, ID	Name and Address	Site Status
Mecklenburg (65)		
Charlotte		
060-0009	***Springfresh Cleaner, 9800 Monroe Rd***	***Assessment***
060-0010	***Boggs And Company, 3931 Glenwood Dr***	***Interim Action***
060-0011	***Sno-white Cleaners, 7629 Pineville-Matthews Rd***	***Closure***
060-0012	***Domestic Laundry - CAMDUS site, 801 S Mcdowell St***	***Assessment***
060-0013	Cunningham Cleaners, 104 S Sharon Amity Rd	
060-0014	***One Price Drycleaning, 816 E Arrowood Rd***	***Closure***
060-0015	***Carriage Fine Dry Cleaning, 8020 Providence Rd***	***NFA***
060-0016	***60 Minute Cleaners, 9100 S Tryon St***	***Assessment***
060-0017	Gateway Village Development, 700 W Trade St	
060-0018	Dynasty Cleaners and Laundry, 3145 N Sharon Amity Rd	
060-0019	Cunningham Cleaners, 2901 N Davidson St	
060-0020	Midtown Square One Hour Valet Dry Cleaners, 401 S Independence Blvd	
060-0022	***Rainbow Cleaners, 8500 Pineville-matthews Rd***	***Certified***
060-0023	***Prestown Laundry And Cleaners, 6214 Idlewild Rd***	***Assessment***
060-0024	***60 Minute Cleaners, 4447 The Plaza***	***Assessment***
060-0026	***Sno-white Cleaners, 901 E 4th St***	***Assessment***
060-0027	Charlie Browns Dry Cleaners, 3701 Freedom Dr	
060-0028	***Sharon Cleaners, 4724 Sharon Rd***	***Remediation***
060-0029	***Abra Costumes, 1611 Central Ave***	***On Hold***
060-0030	***Village Cleaners, 7221 Albemarle Rd***	***Monitoring***
060-0031	***Sno-white Cleaners, 5669 Farm Pond Lane Four Seasons Shopping***	***Assessment***
060-0032	***Eastway Quick Clean Service, 3052 Eastway Dr***	***Closure***
060-0033.	***Jones Dry Cleaning, 1601 E 4th St***	***Assessment***
060-0035	***Ivory Cleaners, 2511 Westerly Hills Dr***	***Assessment***
060-0036	***Faulk Cleaners, 2615 Westerly Hills Dr***	***Assessment***
060-0037	***Dryclean Carolinas, 2508 South Blvd***	***Assessment***
060-0039	***Providence Cleaners, 631 S Sharon Amity Rd***	***Assessment***
060-0040	***People's Dry Cleaners, 2133 Beatties Ford Rd***	***Assessment***
060-0041	***Holiday Cleaners, 2241 Beatties Ford Rd***	***Assessment***
060-0042	***Holiday Cleaners, 3221 Monroe Rd***	***Assessment***
060-0043	***Douglas Furrier and Cleaners, 1200 Charlottetown AVE***	***Assessment***
060-0044	***Gay Laundry and Cleaners, 1101 N Brevard ST***	***NFA***
060-0045	***Carillon Building, 227 W Trade ST***	***Assessment***
060-0046	Arrow Laundry & Cleaners, 4735 Monroe Rd	
060-0048	***Dan Meigs Cleaners, 1101 Central Ave***	***Closure***
060-0049	***Starmount Cleaners, 6215 South Blvd***	***Assessment***
060-0050	***Plaza Cleaners, 9002 JM Keynes DR***	***Monitoring***
060-0051	60 Minute Cleaners, 6315 South BLVD	
060-0052	***JFR Cleaners, 9710 Monroe RD***	***Assessment***
060-0053	***Prosperity Cleaners, 3020 Prosperity Church RD***	***Monitoring***
060-0056	***Zenith Cleaners, 2301 South BLVD***	***Monitoring***
060-0057	***Myers Park Cleaners, 1027 Providence RD***	***Assessment***

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Mecklenburg (65)		
Charlotte		
060-0058	***Seneca Dry Cleaning, 5020 South BLVD***	***Assessment***
060-0059	***Coachman Cleaners, 4001 Park RD***	***Certified***
060-0060	Arrow Laundry & Cleaners, 1933 E 7th ST	
060-0061	***Derita Dry Cleaners & Laundry, 2414 W Sugar Creek RD***	***Assessment***
060-0063	***King's Cleaner, 632 W Sugar Creek RD***	***Assessment***
060-0064	New Image Cleaners, 5655 E N Tryon ST	
060-0065	Tryon Mall Cleaning Center, 451 E Sugar Creek RD	
060-0066	Hickory Square Cleaners, 5724 E WT Harris BLVD	
060-0067	Blue Band 1 Hour Cleaners, 2216 Statesville AVE	
060-0068	Swan Cleaners, 7201 E Independence BLVD	
060-0069	Coleman Dry Cleaners, 2557 West BLVD	
060-0070	Segrest's Cleaners, 915 W Fifth ST	
Matthews		
060-0003	***Crossroads Dry Cleaners, 3607 Matthews-Mint Hill Rd***	***Assessment***
060-0025	***Ho Cleaners, 3116 Weddington Rd***	***Closure***
060-0034	Ho Cleaners, 10420 E Independence Blvd	
Pineville		
060-0021	***Hearts Dry Cleaners, 9101 Pineville-Matthews Rd***	***Closure***
Moore (5)		
Aberdeen		
063-0002	Carters Laundry and Cleaning, 1389 N Sandhills Blvd	
063-0004	***Soapy Bubbles, 1906 Poplar St***	***NFA***
Pinehurst		
063-0001	***Pinehurst Hotel Cleaners, 270 Mccaskill Rd***	***Monitoring***
Southern Pines		
063-0003	***Carters Laundry And Cleaning, 155 W New York Ave***	***Assessment***
063-0005	***Dry Clean Express, 1930 N Poplar St***	***NFA***
Nash (3)		
Rocky Mount		
064-0001	Clean-clean Dry Cleaners, 120 Winstead Ave	
064-0002	Clean-clean Dry Cleaners, 2408 Sunset Ave	
064-0003	***One Hour Koretizing Cleaners, 129 S Church ST***	***Assessment***
New Hanover (11)		
Wilmington		
065-0001	Modern Dry Cleaners And Laundry, 1104 Fordham Rd	
065-0002	***Coastal Dry Cleaners, 4414 Shipyard Blvd***	***Monitoring***
065-0003	***Coastal Dry Cleaners And Coin Laundry, 4701 Oleander Dr***	***Monitoring***
065-0004	***Coastal Dry Cleaners, 2629 Carolina Beach Rd***	***Closure***
065-0005	***Williams Cleaners, 6845 Market St***	***Monitoring***
065-0006	***Williams Fabricare Inc, 5521 Carolina Beach Rd***	***Closure***

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New Hanover (11)		
Wilmington		
065-0007	***Coastal Dry Cleaners - Ogden Plaza, 6840 Market St***	***Monitoring***
065-0008	***Kings Laundry, 4615 Market St***	***Monitoring***
065-0009	***Coastal Cleaners, 7 S Kerr Ave***	***Assessment***
065-0010	***Modern Laundry & Dry Cleaners, 118 S 17th ST***	***Assessment***
065-0011	***$2.50 Cleaners at University Square, 810 S College RD***	***Assessment***
Onslow (8)		
Jacksonville		
067-0001	Abc One Hour Cleaners, 2127 Lejeune	
067-0002	***Southern Cleaners And Laundry, 820 Court St***	***Interim Action***
067-0004	***Coastal Dry Cleaners, 1170 Henderson Dr***	***Assessment***
067-0006	***A1 Cleaners, 327 Henderson Dr***	***Assessment***
067-0007	***Quality Cleaners and Laundry, 701 New Bridge St***	***Monitoring***
067-0008	Center Laundromat and Cleaners, 237 A New River DR	
Midway Park		
067-0005	***Village Cleaners, 175 Freedom Way***	***Interim Action***
Swansboro		
067-0003	***Coastal Dry Cleaners, 628 W Corbett Ave***	***Interim Action***
Orange (9)		
Carrboro		
068-0007	***Hangers Cleaners, 127 Fidelity St***	***Interim Action***
068-0008	Jack's Cleaners, 302 E Main ST	
068-0009	***MEM One Hour Martinizing, 408 W Weaver ST***	***Assessment***
Chapel Hill		
068-0001	***KSP Cleaners, 1490 FORDHAM Blvd***	***Remediation***
068-0002	***American Dry Cleaners, 201 S Estes Dr***	***Interim Action***
068-0003	***Deluxe Cleaners, 227 S Elliott Rd***	***Closure***
068-0005	***Midtown Shops, 750 Martin Luther King Jr Blvd***	***Interim Action***
068-0006	***One Hour Koretizing Cleaners, 301 W Franklin St***	***Remediation***
068-0010	***Chapel Hill Cleaners, 422 W Franklin ST***	***Certified***
Pasquotank (1)		
Elizabeth City		
070-0001	***Southgate Koretizing, 1409 W Ehringhaus St***	***Remediation***
Pender (1)		
Hampstead		
071-0001	Hampstead Village Dry Cleaners, 102 Hampstead Village	
Pitt (7)		
Ayden		
074-0002	***Ayden Plaza, 144 Third St***	***NFA***
Greenville		
074-0001	Koretizing Cleaners, 2105 Charles St	

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Pitt (7)		
Greenville		
074-0003	Better Look Garment Care, 600 SE.Greenville Blvd	
074-0004	***Bowen Cleaners, 2480 Stantonsburg Rd***	***Monitoring***
074-0005	***Bowen Cleaners, 3114 S Evans St***	***Interim Action***
074-0006	Rabo Cleaners, 701 Hooker Rd	
074-0007	***One Hour Martinizing, 111 E 10th ST***	***Assessment***
Polk (1)		
Tryon		
075-0001	***Brocks Cleaners, 46 Maple St***	***Interim Action***
Randolph (1)		
Asheboro		
076-0001	Hillside Laundromat, 1007 S Fayetteville St	
Robeson (1)		
Fairmont		
078-0001	Stevens Dry Cleaners, 117 Center St	
Rockingham (2)		
Reidsville		
079-0001	***Hicks Poly Clean Center Self Service Laundry, 812 S Scales St***	***Remediation***
079-0002	***Penrose Mall, 1601 S Scales St***	***Assessment***
Rowan (7)		
Rockwell		
080-0007	Rockwell Dry Cleaners, Depot ST	
Salisbury		
080-0002	***Avalon Cleaners, 124 Avalon Dr***	***Interim Action***
080-0003	***WMS Cleaners, 712 W Jake Alexander Blvd***	***Monitoring***
080-0005	***M&S Cleaners, 1729 W Innes St***	***Assessment***
080-0006	Highlander Center Laundry, 2000 Statesville BLVD	
080-0008	***Vogue Cleaners, 106 N Long ST***	***Assessment***
Spencer		
080-0001	***Shuping Cleaners, 21 Park Plaza Park Plaza Shopping Center***	***Interim Action***
Rutherford (1)		
Forest City		
081-0001	Cone Mills, 139 Depot St	
Sampson (1)		
Clinton		
082-0001	***Acme Cleaners, 209 Beaman ST***	***Assessment***
Scotland (2)		
Laurinburg		
083-0001	***One Hour Cleaners, 1514 S Main St***	***Interim Action***
083-0002	Village Cleaners, 1691 S Main ST	

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Stanly (2)		
Albemarle		
084-0001	***Dry Clean Express, 636 E Highway 24/27 Byp***	***NFA***
Norwood		
084-0002	***Garment Care Center, 560 Fork RD***	***NFA***
Stokes (1)		
Walnut Cove		
085-0001	***Klean Rite Cleaners, 318 N Main ST***	***Monitoring***
Surry (3)		
Elkin		
086-0002	White Swan Rentals, 204 E Market ST	
086-0003	Lawrence Dry Cleaners, 221 W Main ST	
Mount Airy		
086-0001	***Modern Laundry And Dry Cleaners, 526 W Lebanon St***	***On Hold***
Transylvania (1)		
Brevard		
088-0001	***Rainbow Cleaners, 249 Caldwell St***	***Assessment***
Union (1)		
Monroe		
090-0001	***Prestown Presto Clean, 405 N Sutherland Ave***	***Assessment***
Wake (44)		
Apex		
092-0030	***Best Dry Cleaners, 1781 W William St***	***NFA***
Cary		
092-0004	***Medlin-Davis Cleaners, 1207 Kildaire Farm Rd***	***NFA***
092-0011	***Medlin-Davis Cleaners, 107 S Edinburgh Dr***	***Assessment***
092-0029	***Galaxy Cleaners, 101 New Waverly Pl***	***Closure***
092-0037	***Avalon Cleaners, 686 Cary Towne Blvd***	***Monitoring***
092-0038	***Medlin Davis- Shoppes at Kildaire, 173 Cary Pky***	***Assessment***
092-0040	***Village Cleaners, 6420 Tryon Rd***	***NFA***
092-0041	***Martinizing Dry Cleaners, 4246 NW Cary Pky***	***NFA***
Fuquay-Varina		
092-0044	Tops Cleaners, 534 N Main ST	
Knightdale		
092-0009	***Knightdale Cleaners, 1013 N Smithfield Rd***	***Assessment***
Raleigh		
092-0001	***Pro Cleaners, 8377 N Creedmoore Rd***	***Interim Action***
092-0003	***Rainbow Cleaners And Laundry, 2915 Essex Cir***	***Closure***
092-0005	***DJ Cleaners, 3591 Maitland Dr***	***On Hold***
092-0006	***Hilkers Cleaners, 4043 Wake Forest Rd***	***Assessment***

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Sites with Dry-Cleaning Solvent Contamination by County and City and Sites Certified into the DSCA Program by County and City
(Certified Sites are *bold*, Site Status definitions follow Appendix A)

County, City, ID	Name and Address	Site Status
Wake (44)		
Raleigh		
092-0007	***Brothers Cleaners, 6144 Falls Of The Neuse Rd***	***Interim Action***
092-0008	***Johnsons Dry Cleaners, 3534 Wade Ave***	***Interim Action***
092-0010	***Fuller Supply Company, 421 Eby Dr***	***Assessment***
092-0012	***Newtons Cleaners, 2023 Cameron St***	***Closure***
092-0013	***Medlin-Davis Cleaners, 2028 Cameron St***	***Assessment***
092-0014	***Glam-o-rama Cleaners, 3165 Capital Blvd***	***Assessment***
092-0015	***Emporium Cleaners, 3501 Capital Blvd***	***Assessment***
092-0016	***New Hope Cleaners And Tailors, 3901 Capital Blvd***	***Closure***
092-0017	***Brothers Cleaners, 4221 Six Forks Rd***	***Monitoring***
092-0018	***Ace Dry Cleaners, 4701 Atlantic Ave***	***Closure***
092-0019	***Sanitary Laundry, 417 Mcdowell St***	***Certified***
092-0020	***Sherrill's Dry Cleaning And Laundry, 7463 Six Forks Rd***	***Monitoring***
092-0021	***T And J Cleaners, 2423 Crabtree Blvd***	***Interim Action***
092-0022	***Medlin Davis Cleaners, 4434 Creedmore Rd***	***Monitoring***
092-0023	***Popes Dry Cleaners, 7713 Lead Mine Rd***	***Monitoring***
092-0024	***Pleasant Valley Cleaners, 4112 Pleasant Valley Rd***	***Monitoring***
092-0025	***Hilkers Cleaners, 6325 Falls Of Neuse Rd***	***Closure***
092-0026	***Ideal Cleaners, 7209 Sandy Forks Rd***	***Closure***
092-0027	***Eagle Cleaners, 900 Spring Forest Rd***	***Monitoring***
092-0028	***Joy Cleaners, 4503 Fayetteville Rd***	***Assessment***
092-0031	***The Cleaners, 3209 Avent Ferry Rd***	***Closure***
092-0032	***Greenbrier Cleaners, 4207 Fayetteville Rd***	***Monitoring***
092-0033	***Courtesy Cleaners, 8111 Creedmoor Rd***	***Interim Action***
092-0034	***S & S Cleaning, 425 Chapanoke Rd***	***Monitoring***
092-0035	***Sherrill's Dry Cleaners, 5563 Western Blvd***	***Assessment***
092-0036	***North Boulevard Cleaners, 5141 New Hope Rd***	***NFA***
092-0039	***Brookside Dry Cleaners & Laundry, 1028 Brookside Dr***	***Monitoring***
092-0043	***Ideal Cleaners, 2403 Wake Forest RD***	***Assessment***
092-0045	Holden Cleaners, 702 E Martin ST	
092-0046	***Flints Laundry and Dry Cleaning, 430 N Salisbury ST***	***Assessment***
Warren (1)		
Manson		
093-0001	Boyd's Cleaners, 295 Manson Drewry RD	
Watauga (2)		
Boone		
095-0001	***High Country Cleaners, 396 E King ST***	***Assessment***
095-0002	***Trailway Laundry, 320 E King ST***	***Assessment***
Wayne (3)		
Goldsboro		

Appendix A
Sites with Dry-Cleaning Solvent Contamination by County and City and Sites Certified into the DSCA Program by County and City
(Certified Sites are *bold*, Site Status definitions follow Appendix A)

County, City, ID	Name and Address	Site Status
096-0001	Penny Dry Cleaners, 212 E Ash St	
096-0002	***Penny One Hour Cleaners and Laundry, 433 N Berkeley Blvd***	***Monitoring***
Wayne (3)		
Goldsboro		
096-0004	***Paramount Cleaners, 225 E Walnut ST***	***Assessment***
Wilson (7)		
Wilson		
098-0001	***Koretizing Cleaners, 1313 Ward Blvd***	***Monitoring***
098-0002	***Discount Cleaners, 700 Highway 301 Blvd***	***Monitoring***
098-0003	***Exclusive Cleaners, 725 S Goldsboro St***	***Assessment***
098-0004	***Exclusive Cleaners, 1513 Ward Blvd***	***Monitoring***
098-0005	Friendly Cleaners, 605 S Pender St	
098-0006	***Exclusive Cleaners, 1673 Parkwood Blvd***	***Monitoring***
098-0007	***Exclusive Cleaners, 2700 Ward Blvd***	***Assessment***

351 Identified Sites

270 Certified Sites

DSCA Site Status Definitions

Certified: The DSCA Program has entered into an agreement with a petitioner and is in the process of assigning a state-hired, independent environmental contractor to conduct a prioritization assessment.

Assessment: The DSCA Program's independent environmental contractor is currently determining the extent of soil and groundwater contamination at the site.

Monitoring: The DSCA Program's independent environmental contractor is currently monitoring the levels of contaminants in the groundwater.

Remediation: The DSCA Program's independent environmental contractor is currently performing cleanup at the site.

Interim Action: Site conditions are favorable for source removal or conducting a pilot study for remediation.

Emergency: The DSCA Program has determined there is an immediate need for corrective action to abate a potential hazard to human health or the environment.

On Hold: Please contact the site's project manager for more details.

Closure: The extent of contamination has been defined and is considered stable. The DSCA Program is in the process of developing and implementing a risk management plan to protect human health and the environment from remaining contamination.

NFA: No Further Action Required.

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

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COMMISSION CLERKS

January 26, 2012

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on December 14, 2011. All reports are available online on the Commission website: **(http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received)**. If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or **mariahm@ncleg.net** for assistance.

A. The following reports have been submitted by the Department of Environment and Natural Resources (DENR) and are being distributed in connection with today's agenda as follows:

a. Annual solid waste management report. January 15, 2012. Statutory Authority: G.S. 130A-309.12(c), G.S. 130A-309.14, G.S. 130A-309.06(c)(6), G.S. 130A-309.06(c)(8), G.S. 130A-309.06(c)(9), G.S. 130A-309.06(c)(10), G.S. 130A-309.06(c)(11), G.S. 130A-309.06(c)(12), G.S. 130A-309.06(c)(14), G.S. 130A-309.63(e), G.S. 130A-309.85, G.S. 130A-309.140, G.S. 136-28.8(g). ***Agenda Item #5***

b. Annual report on the Inactive Hazardous Sites Program. October 1, 2011. Statutory Authority: G.S. 130A-310.10. ***Agenda Item #6***

c. Annual report on the Effectiveness of the Brownfields Property Reuse Act. October 1, 2011. Statutory Authority: G.S. 130A-310.40. ***Agenda Item #7***

d. Annual report on the Dry-Cleaning Solvent Cleanup Act of 1997. October 1, 2011. Statutory Authority: G.S. 143-215.104U. ***Agenda Item #8***

B. The following report has been submitted by DENR and may be distributed in conjunction with a presentation at a future meeting of the Commission.

Biennial report on the state of the environment. February 15, 2011. Statutory Authority: G.S. 143B-279.5(a).

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
February 23, 2012

The Environmental Review Commission (ERC or Commission) met on Thursday, February 23, 2012 at 9:00 a.m. in Room 643 of the Legislative Office Building. Representative Samuelson presided.

The following members were present: Representative Mitch Gillespie Co-Chair, Senators Stan Bingham, Daniel Clodfelter, Brent Jackson, Representatives Joe Hackney, Pat McElraft, and Roger West. Also present were: Mr. Jeff Hudson, Ms. Jennifer McGinnis, and Ms. Susan Iddings, Commission Counsels; Ms. Jennifer Mundt, Commission Analyst; Ms. Mariah Matheson, Research Assistant; Ms. Susan Phillips, Commission Clerk; and Sergeants-at-Arms John Brand, Reggie Sills, Martha Gaddison, Ken Kirby, John Fitchett and Ernie Sherrell. (Attendance Attachment 1).

On February 9, 2012, notice was sent to members and interested parties via e-mail. A copy of this notice is incorporated into these minutes as Attachment #2. Copies of the agenda for the meeting and visitor registration sheets are included as Attachment #3 and Attachment #4.

Representative Samuelson called the meeting to order and welcomed members, staff, and visitors in attendance. There were no introductory remarks made by the Commission Co-Chairs. Representative Samuelson recognized Representative Mitch Gillespie for a discussion of the State Air Toxics Program.

Representative Gillespie provided a draft bill for discussion only (State Air Toxics Reform Bill Draft 2011-SBz-25[v.14] (11/28)) and explained the process used to draft this bill. Representative Gillespie discussed the meetings held with stakeholders to find common ground for reforming air toxic laws in North Carolina.

Representative Samuelson asked Commission Counsel, Jeff Hudson, to explain the draft bill to the Commission.

Mr. Hudson explained the statutory basis for the State Air Toxics Program, which was created by the Environmental Management Commission (EMC) after it was statutorily directed to establish such a program. The related statutes include just a few sentences while the administrative code consists of at least 30 pages of rules. The program is largely in the rules and this legislative draft is an interplay between changes to the statutory language and these associated rules. This legislative proposal directs the Department of Environment and Natural Resources (DENR) to implement the air toxic rules as provided in the new language. Section 1 of the draft legislation would (1) provide that the State Air Toxics Program would not apply to any air emission source that is subject to certain federal emission requirements under the Clean Air Act and (2) codifies the "Director's Call" to authorize DENR, upon a written finding that a source or facility presents or will present an unacceptable risk to human health, to require the

owner or operator of a facility to submit a permit application for any or all emissions that eliminates the unacceptable risk to human health.

Section 2 of the proposed legislation directs the Division of Air Quality (DAQ) of DENR to review the adoption and implementation of toxic air pollutant rules to determine if changes could be made to reduce unnecessary regulatory burden and increase efficient use of DAQ resources, while maintaining public health. DAQ must conduct this review in consultation with interested stakeholders and report the results to the Commission no later than November 30, 2012.

Representative Hackney asked if this bill would end fence line monitoring for air toxics in North Carolina. Mr. Hudson answered that the exception only applies to sources that are covered by the federal MACT standards or if those standards haven't been adopted by a particular deadline, then the State can enforce it. There are certain air toxics not identified under federal law that would still be subject to the State program, as they are detrimental to public health.

Representative Hackney requested additional information on fence line monitoring Mr. Hudson replied that the proposed legislation would not change fence line monitoring, as DENR will continue to look at ambient standards.

Ms. Sheila Holman, the Director of DAQ in DENR stated that the rules currently do not require fence line "monitoring," rather the rules require fence line "modeling" requirements. If a source wants to change its operation and increase air toxic emissions, new modeling may be required. The legislation would exempt those units from fence line modeling.

Representative Hackney asked what portion of the current fence line modeling would this bill exclude. Is it 25%, 1%, 75%, or 50% ?

Ms. Holman replied that she didn't have those figures with her; however, she would get them to Representative Hackney. Ms. Holman said that federal standards cover a significant portion of air toxics emissions, which she believes is more than 50%.

Representative Hackney said that he wanted the Commission to be aware of the potential widespread impact of the proposed legislation.

Representative Gillespie commented that Representative Hackney had a valid concern. Representative Gillespie asked Ms. Holman to clarify. He reiterated that DENR would continue to do some modeling, although some of the fence line testing would be eliminated. Representative Gillespie said that DENR will continue to monitor the facilities; however, they would not require modeling from those facilities. DENR would still be aware if there was a threat to public health at the fence line of those facilities. At that point DENR could use the Director's Call. Representative Gillespie asks Ms. Holman if that is correct?

Sheila Holman stated that Representative Gillespie was correct. According to Ms. Holman, DENR would continue to conduct facility-wide modeling for emission units not subject to federal standards. DENR would continue to look at the overall emissions at a given facility to determine if there is an unacceptable health risk. If DENR believed additional information was

required to ensure the public health is not at risk, they would have the ability to require that. That is in the second paragraph of the proposed legislation.

Representative Hackney asked is there would be an opportunity for public comment? Mr. Hudson stated that the legislation asks for a written finding that can be based on many sources, not just modeling data.

Representative McElraft asked for a comparison of what other states have done when they changed their air toxics programs. Ms. Holman stated that they have detailed information on what Virginia and South Carolina have done and they will provide it to the Commission.

Representative Samuelson recognized Mr. Chuck Wakild, Director of the Division of Water Quality (DWQ), DENR, for a report on the implementation and application of the Neuse and Tar-Pamlico Riparian Buffer Rules. Mr. Wakild provided a full copy of the report to the Commission (Attachment 5) and a copy of his PowerPoint presentation to the Commission (Attachment 6). Mr. Wakild gave an overview of the report including DENR's conclusions and recommendations:

- Scientific literature indicates that a 50 foot buffer provides for effective nutrient removal from existing landscapes to protect the water quality in the Neuse and Tar-Pamlico River Basins.
- DENR does not recommend removing the existing riparian buffer requirements because of the significant nutrient removal that buffers perform and it would place an increased burden for nutrient reductions on wastewater treatment plants, agriculture, and development.
- DENR does recommend expanding the flexibility provided to coastal counties outlined in Session Law 2011-394 to all single family residential lots throughout the Neuse and Tar-Pamlico River Basins.

Representative Samuelson asked if the riparian buffers were removed would that increase the burden on the other three sources by 30%? Mr. Wakild replied that it would be more than 30%. It would add an additional 30% from all nitrogen sources combined. That's why it is a much bigger number. It increases the total loading to the rivers by 30% of the total that currently exists.

Representative Samuelson asked if it would increase the amount of nitrogen that the other three source categories would have to reduce by even more. Mr. Wakild responded that it would.

Representative Hackney asked if most people did not object to buffers between their buildings/construction and the river? Mr. Wakild said that was a fair characterization. There are many things people can do in their buffers.

Representative Hackney asked if most welcome vegetation between themselves and the rivers? And if so, doesn't that increase the value of their lot? Mr. Wakild replied that he would hope it would. The buffer rules have been in effect for more than 10 years and people see the value in the rules.

Representative Hackney asked what was the number one objection to the buffers? Mr. Wakild said that people want a view of the water, and we are trying to accommodate this and help when we can.

Representative McElraft asked if you wanted to build a walkway, a gazebo, or a boat dock at your property, would you to? Mr. Wakild responded yes.

Representative McElraft asked how much are you allowed to disturb in the buffer? Is there a limit on how big the gazebo can be?

Ms. Amy Chapman, DWQ, DENR, said that there is not a minimum/maximum limitation. You have to show that you have avoided and minimized the impact on the buffer zone as much as possible, submit your plans for approval, and then build when the plans are approved.

Representative McElraft asked how much of nitrogen pollution is from wildlife? Mr. Wakild responded that DWQ does not know for sure, but it comes from everywhere.

Representative McElraft asked how much can you top off trees for a water view on a sound front or a riverfront lot? Mr. Wakild said it is not so much an issue with topping off trees, as it is with pruning them. Mr. Wakild said that the guidelines are listed in the rules and available on the website.

Representative McElraft asked if an owner of a heavily wooded riverfront lot could cut down any trees? Mr. Wakild responded that trees cannot be cut down in the buffer zone, as you cannot clear the buffer zone. According to Mr. Wakild, the 50 foot buffer zone is divided; the 30 feet closest to the river must be kept in an undisturbed state, the remaining 20 feet can be managed vegetation such as grass or landscaping.

Senator Bingham asked for a comparison of the problems with agricultural sources versus stormwater sources and waste water treatment plants and a brief history of how that has occurred? Senator Bingham said that he was under the impression that agriculture was a major nitrogen source because of the concentration of farming near rivers and other bodies of water. Mr. Wakild said that he hesitated to make a broad generalization and that nitrogen problems are location specific. Depending upon the location, some sites are heavily impacted by agriculture versus urban stormwater or by some other source. What the EMC tried to do in establishing these rules was to review all of the factors and receive input from various interest groups in order to find what was fair, reasonable, and generally proportionate. It depends on the location as to determining the dominant source of nitrogen.

Senator Bingham asked for data on where some of the larger farms are? Mr. Wakild said that in recent studies they have developed more sophisticated land use models in order to identify the different types of land uses, particularly in Falls Lake. There is scientific literature that predicts how much nitrogen will leave particular types of land use. The federal government then decides how much nitrogen is allowed. There is also data in certain areas of the Upper Neuse, but when these rules were being developed, DENR didn't have such precise information.

Representative Samuelson recognized Ms. Edythe McKinney, Director of the Division of Environmental Assistance and Outreach, DENR, to present a report on the results of customer surveys and listening sessions conducted by DENR during the fall of 2011. A copy of Ms. McKinney's PowerPoint presentation on DENR Customer Feedback for Regulatory Improvement is included (Attachment 7). The major topics of the survey were customer service, internal processes, outreach and communication, and permit review. Ms. McKinney said that out of 200 respondents, three out of five respondents gave DENE a score of five on a five-point scale. The survey determined that improvement was need in the areas of training, E-permitting, and customer service.

Ms. McKinney said that the survey information was shared with the division directors and policy makers earlier this year and steps are being taken to improve those areas. A follow-up report on progress in these areas will be made in May 2012.

Representative Samuelson asked how participants were invited to take part in the survey and if critics of DENR were invited to take part? Ms. McKinney responded that originally invitees were primarily chosen through the regional offices and were identified by staff as having experience with DENR. Ms. McKinney said that DENR publicized the surveys, talked to a number of associations, and realized that DENR may have missed people. They tried to get a cross-section of people who had permits, including farmers, small businesses, and people who were unhappy with DENR. Then once it was publicized and announced, we had the survey include people who were not invited. Ms. McKinney said that in at least one instance she heard that some people were not represented enough. Upon hearing that, DENR followed-up with those customers. Ms. McKinney acknowledged that there are always some people who didn't participate, but she is receptive to talking to them if a group feels excluded.

Representative Samuelson asked how the information was distributed (ie. via mail, email, public service announcement, internet, newspaper ads, etc.). Ms. McKinney said that the invitations were sent primarily via email and personal follow up. There were no public service announcements or newspaper advertisements; however, there was a press release. DENR was trying to limit the listening sessions to about 25 to 35 people. There had been a whole series of larger groups and we wanted to have some of those people come talk about specific things.

Senator Bingham asked about the industrial perspective. He noted that Representative Gillespie had mentioned permitting and the length of time it took. Senator Bingham has heard complaints from the industrial community about the length of time the process takes as well. He asked if something was falling through the cracks or if other states were doing things differently? Ms. McKinney said that the timeliness of a permit was one of the reasons why they reviewed internal processes and permit review. One of the things to come out of the listening sessions was that one reason the process takes so long is because DENR can receive the wrong information from a customer and does not communicate that fact effectively to the applicant. The listening sessions helped both sides know more about communication and training and sitting down across the table and knowing what the expectations were and how they apply to you. Issues like timeliness came up, as did ways our customers and staff suggested that we might approach things better.

Senator Bingham inquired about the second most prominent question he hears, which is regarding the fines and fees. For example, DENR can levy a large fine against someone with a small farm, which may make people reluctant to talk to DENR, maybe because they are concerned about not having legal representation, what to say/what not to say. Thus, some people may not wish to participate in the listening sessions, as they are afraid they'd be penalized for it. Ms. McKinney said that that was one of the things that DENR tried to be sensitive of, which is why they didn't put participant's comments beside what they said. She continued that there was one group that was very concerned that what they said would get back to the regulators, which is why there were no regulators at these meetings. Ms. McKinney said that her staff coordinated these meetings because DENR wanted the participants to feel free to discuss things with us. She noted that part of the process was to meet with the regulatory division staff to discuss the comments about their agencies, because DENR wants to improve.

Senator Jackson, Representative Gillespie, and Representative McElraft all commented that the study was a good first step toward improving the customer service of the department.

There being no further business, the meeting was adjourned at 10:28 AM.

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Susan Phillips, Commission Clerk

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

9:00 a.m. Thursday, February 23, 2012
Room 643 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Ruth Samuelson, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Discussion of the State Air Toxics Program *(20 minutes)*
   Representative Mitch Gillespie

   Jeff Hudson, Commission Counsel

4. Report on the implementation and application of the Neuse and Tar-Pamlico Riparian Buffer Rules *(30 minutes)*
   Chuck Wakild, Director
   Division of Water Quality, Department of Environment and Natural Resources (DENR)

5. Report on results of customer surveys and listening sessions conducted by the Department of Environment and Natural Resources during the fall of 2011 *(30 minutes)*
   Edythe McKinney, Director
   Division of Environmental Assistance and Outreach, DENR

6. Commission discussion and announcements

7. Adjourn

FUTURE MEETINGS:

The Environmental Review Commission will meet as follows in the Legislative Office Building (LOB), Raleigh, North Carolina. **This schedule is tentative and subject to adjustment.** For planning purposes, however, please reserve these dates.

Thursday, March 22, 2012 at 9:00 a.m. in Room 544 LOB.
Thursday, April 26, 2012 at 9:00 a.m. in Room 544 LOB.

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

ATTENDANCE

Environmental Review Commission

2011-2012

DATES	1/26/2012	2/23/2012													
Rep. Mitch Gillespie, Co-Chair	X	X													
Sen. David Rouzer, Co-Chair															
Rep. Ruth Samuelson, Co-Chair	X	X													
Sen. Stan Bingham	X	X													
Rep. William D. Brisson	X														
Sen. Daniel Clodfelter		X													
Sen. Don East	X														
Rep. Joe Hackney	X	X													
Sen. Fletcher Hartsell	X														
Sen. Brent Jackson	X	X													
Rep. Carolyn Justice	X														
Rep. Pat McElraft	X	X													
Rep. Chuck McGrady	X														
Sen. Bill Rabon															
Sen. Michael Walters	X														
Rep. Roger West		X													
Jeff Hudson, Committee Counsel	X	X													
Jennifer McGinnis, Committee Counsel	X	X													
Jennifer Mundt, Legislative Analyst	X	X													
Mariah Matheson, Research Assistant	X	X													
Susan Iddings, Drafting	X	X													
Sarah Neunzig, Committee Assistant															
Cindy Hobbs, Committee Assistant															
Susan Phillips, Committee Assistant	X	X													

VISITOR REGISTRATION SHEET

Environmental Review Commission
Name of Committee

February 23, 2012
Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Joe McClees	McClees Consulting
Dan Conrad	NCCN
Mary Maclean Abell	SELC
Margaret Hartzell	Environment North Carolina
Tom Beason	EDF, NCWF
Diana Kees	DENR
Trina Ozer	DENR
Robin Smith	DENR
Kari Barsness	DENR
Chuck Wakild	DENR/DWQ
Amy Chapman	DENR/DWQ
Cyndi Karoly	DENR/DWQ

VISITOR REGISTRATION SHEET

Environmental Review Commission
Name of Committee

February 23, 2012
Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Sheila Holman	NCDENR
Edythe McKinney	NCDENR
George Matthis	Neuse Riverkeeper Foundation
Alex Miller	KLG
Deatrice Williams	CUCA
Veronica Butler Shingleton	office of Governor
Donna S. Cox	OSBM
Beth Warren	AG's office
Katy Hendrick	Duke Energy
Rick Lecl[illegible]	Progress Energy
Kristen Laster	Fetzer Strategic

VISITOR REGISTRATION SHEET

Environmental Review Commission — February 23, 2012

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
J Goodman	NC CHAMBER
Elizabeth Ramsey	NCICUA
Andy Ellen	NORMA
Jim Johnson	BSA
Lu Ann [illegible]	CSS
Nancy Thompson	Weyerhaeuser
Bob [illegible]	FLST
Jon Chatkiewicz	NVPIA
Tom Dodge	PS, NCUC
Dean Plunkett	PS.

VISITOR REGISTRATION SHEET

Environmental Review Commission — February 23, 2012

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
CHRIS DILLON	NCWRC
DAVID BARNES	PS
Patrick Buffkin	NCAEC
CHUCK NOBLE	WM
George Everett	Duke Energy
Preston Howard	MCIC
Doug Lassiter	NCSTA
Daniel Auburn	NCLM
Kelly Houston	AEC&L, LLC
Bill Schrum	Republic Services
Allen Hardison	CRSWMA

VISITOR REGISTRATION SHEET

Environmental Review Commission — **Name of Committee**

February 23, 2012 — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Louise Slate	Amec
Don Safrit	McKim & Creed
Tad Boggs	NCDENR
Phil Carter	Waste Industries
Kevin Whitehead	Glover
Chris Caldwell	DuPont
Heather Barrett	Williams Mullen
Allison Walter	Nelson Mullins
R Rogers	NCCWMTF
Ken McHan	K.M.A.
CJ Hollis	TSS

VISITOR REGISTRATION SHEET

Environmental Review Commission — **Name of Committee**

February 23, 2012 — **Date**

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BILL DRAFT 2011-SBz-25 [v.14] (11/28)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
2/8/2012 11:04:48 AM

Short Title: State Air Toxics Program Reforms. (Public)

Sponsors: .

Referred to:

A BILL TO BE ENTITLED

AN ACT TO EXEMPT FROM STATE AIR TOXICS EMISSIONS CONTROLS THOSE SOURCES OF EMISSIONS THAT ARE SUBJECT TO FEDERAL EMISSIONS REQUIREMENTS, TO AUTHORIZE THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES TO REQUIRE PERMIT CONDITIONS THAT ELIMINATE UNACCEPTABLE RISKS TO HUMAN HEALTH, AND TO DIRECT THE DIVISION OF AIR QUALITY TO REVIEW THE STATE AIR TOXICS PROGRAM.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 143-215.107(a) reads as rewritten:

"(a) Duty to Adopt Plans, Standards, etc. – The Commission is hereby directed and empowered, as rapidly as possible within the limits of funds and facilities available to it, and subject to the procedural requirements of this Article and Article 21:

...

(5) To develop and adopt emission control standards as in the judgment of the Commission may be necessary to prohibit, abate, or control air pollution commensurate with established air quality standards. ~~This subdivision does not apply to that portion of the National Emission Standards for Hazardous Air Pollutants for asbestos that governs demolition and renovation as set out in 40 C.F.R. § 61.141, 61.145, 61.150, and 61.154 (1 July 1993 edition).~~ The Department shall implement rules adopted pursuant to this subsection as follows:

a. Except as provided in sub-subdivision b. of this subdivision, rules adopted pursuant to this subdivision that control emissions of toxic air pollutants shall not apply to any air emission source that is subject to any requirement under 40 C.F.R. Parts 61 and 63 (as amended) or 42 U.S.C. § 7412(j) (as amended).

b. Upon making a written finding that a source or facility presents or will present an unacceptable risk to human health, the Department may require the owner or operator of the source or facility to submit a permit application for any or all emissions of toxic air pollutants from the facility that eliminates the unacceptable risk to human health. The written finding may be based on modeling, epidemiological studies, actual monitoring data, or other information that indicates an unacceptable health risk. If the Department requires

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the owner or operator of a source or facility to submit a permit application pursuant to this sub-subdivision, the Department shall report to the Chairs of the Environmental Review Commission on the circumstances surrounding the permit requirement, including a copy of the written finding.

...."

SECTION 2. The Division of Air Quality of the Department of Environment and Natural Resources shall review toxic air pollutant rules adopted pursuant to G.S. 143-215.107(a) and the implementation of those rules to determine if changes could be made to the rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining protection of public health. The Division shall conduct this review in consultation with interested parties. The Division shall report the results of its review, including recommendations, if any, to the Environmental Review Commission no later than November 30, 2012.

SECTION 3. This act is effective when it becomes law.

Bill Draft 2011-SBz-25 [v.14]: State Air Toxics Program Reforms.

2011-2012 General Assembly

Committee:	Environmental Review Commission	**Date:**	February 23, 2012
Introduced by:		**Prepared by:**	Jeff Hudson
Analysis of:	Legislative Proposal 2011-SBz-25 [v.14]		Commission Counsel

SUMMARY: Legislative Proposal 2011-SBz-25 [v.14] would provide that State Air Toxics Program rules that control emissions of toxic air pollutants will not apply to any air emission source that is subject to federal emissions standards for toxic air pollutants.

BACKGROUND AND CURRENT LAW:

The State Air Toxics Program (Program) is a regulatory program administered by the Division of Air Quality (Division) in the Department of Environment and Natural Resources (Department). The Program is designed to control emissions of toxic air pollutants in order to protect human health.

The statute upon which the State Air Toxics Program is based, G.S. 143-215.107, was enacted in 1973. Current G.S. 143-215.107 directs the Environmental Management Commission (Commission) to develop and adopt air quality standards and to develop and adopt emission control standards necessary to prohibit, abate, or control air pollution in compliance with the air quality standards. The current air quality and emission control standards adopted by the Commission are found in 15A NCAC 02Q .0701 et seq. (Toxic Air Pollutant Procedures) and 15A NCAC 02D .1101 (Control of Toxic Air Pollutants).

BILL ANALYSIS: Legislative Proposal 2011-SBz-25 [v.14] would provide that State Air Toxics Program rules that control emissions of toxic air pollutants will not apply to any air emission source that is subject to any requirement under either:

- 40 C.F.R. Parts 61 and 63 (as amended): These regulations established by the United States Environmental Protection Agency (USEPA) require sources of toxic air pollutants to control emissions of toxic air pollutants through the use of maximum achievable control technologies or MACT.
- 42 U.S.C. § 7412(j) (as amended): This section of the federal Clean Air Act provides that if the USEPA fails to establish toxic air pollutant regulations for a particular category of sources subject to the federal program, a state must establish controls for sources within the category on a case by case basis.

Legislative Proposal 2011-SBz-25 [v.14] would also codify a provision of the State Air Toxics Program rules, the "Director's Call" provision, 15A NCAC 02Q .0712. This codified provision would authorize the Department of Environment and Natural Resources, upon a written finding that a source or facility presents or will present an unacceptable risk to human health, to require the owner or operator of the source or facility to submit a permit application for any or all emissions of toxic air pollutants from the facility that eliminates the unacceptable risk to human health. This provision would apply to any source or facility, including those that would otherwise be exempt from the State Air Toxics Program. If the Department requires the owner or operator of a source or facility to submit a permit application pursuant to this provision, the Department must report to the Chairs of the Environmental Review Commission on the circumstances surrounding the permit requirement, including a copy of the written finding.

Legislative Proposal 2011-SBz-25 [v.14] would direct the Division of Air Quality to review the air toxics rules adopted pursuant to G.S. 143-215.107(a) and the implementation of those rules to determine if changes could be made to the rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining protection of public health. The Division will conduct this review in consultation with interested parties. The Division will report the results of its review, including recommendations, if any, to the Environmental Review Commission no later than November 30, 2012.

EFFECTIVE DATE: An act based upon this legislative proposal would become effective when it becomes law.

2011-SBz-25 v14-SMSB-57 v4

§ 143-215.107. Air quality standards and classifications.

(a) Duty to Adopt Plans, Standards, etc. – The Commission is hereby directed and empowered, as rapidly as possible within the limits of funds and facilities available to it, and subject to the procedural requirements of this Article and Article 21:

(1) To prepare and develop, after proper study, a comprehensive plan or plans for the prevention, abatement and control of air pollution in the State or in any designated area of the State.

(2) To determine by means of field sampling and other studies, including the examination of available data collected by any local, State or federal agency or any person, the degree of air contamination and air pollution in the State and the several areas of the State.

(3) To develop and adopt, after proper study, air quality standards applicable to the State as a whole or to any designated area of the State as the Commission deems proper in order to promote the policies and purposes of this Article and Article 21 most effectively.

(4) To collect information or to require reporting from classes of sources which, in the judgment of the Environmental Management Commission, may cause or contribute to air pollution. Any person operating or responsible for the operation of air contaminant sources of any class for which the Commission requires reporting shall make reports containing such information as may be required by the Commission concerning location, size, and height of contaminant outlets, processes employed, fuels used, and the nature and time periods or duration of emissions, and such other information as is relevant to air pollution and available or reasonably capable of being assembled.

(5) To develop and adopt emission control standards as in the judgment of the Commission may be necessary to prohibit, abate, or control air pollution commensurate with established air quality standards. This subdivision does not apply to that portion of the National Emission Standards for Hazardous Air Pollutants for asbestos that governs demolition and renovation as set out in 40 C.F.R. § 61.141, 61.145, 61.150, and 61.154 (1 July 1993 edition).

(6) To adopt motor vehicle emissions standards; to adopt, when necessary and practicable, a motor vehicle emissions inspection and maintenance program to improve ambient air quality; to require manufacturers of motor vehicles to furnish to the Equipment and Tool Institute and, upon request and at a reasonable charge, to any person who maintains or repairs a motor vehicle, all information necessary to fully make use of the on-board diagnostic equipment and the data compiled by that equipment; to certify to the Commissioner of Motor Vehicles that ambient air quality will be improved by the implementation of a motor vehicle emissions inspection and maintenance program in a county. The Commission shall implement this subdivision as provided in G.S. 143-215.107A.

(7) To develop and adopt standards and plans necessary to implement programs for the prevention of significant deterioration and for the attainment of air quality standards in nonattainment areas.

(8) To develop and adopt standards and plans necessary to implement programs to control acid deposition and to regulate the use of sulfur dioxide (SO2) allowances and oxides of nitrogen (NOx) emissions in accordance with Title IV and implementing regulations adopted by the United States Environmental Protection Agency.

(9) To regulate the content of motor fuels, as defined in G.S. 105-449.60, to require use of reformulated gasoline as the Commission determines necessary, to implement the requirements of Title II and implementing regulations adopted by the United States Environmental Protection Agency, and to develop standards and plans to implement this subdivision. Rules may authorize the use of marketable oxygen credits for gasoline as provided in federal requirements.

(10) To develop and adopt standards and plans necessary to implement requirements of the federal Clean Air Act and implementing regulations adopted by the United States Environmental Protection Agency.

(11) To develop and adopt economically feasible standards and plans necessary to implement programs to control the emission of odors from animal operations, as defined in G.S. 143-215.10B.

(12) To develop and adopt a program of incentives to promote voluntary reductions of emissions of air contaminants, including, but not limited to, emissions banking and trading and credit for voluntary early reduction of emissions.

(13) To develop and adopt rules governing the certification of persons who inspect vehicle-mounted tanks used to transport motor fuel and to require that inspection of these tanks be performed only by certified personnel.

(14) To develop and adopt rules governing the sale and service of mobile source exhaust emissions analyzers and to require that vendors of these analyzers provide adequate surety to purchasers for the performance of the vendor's contractual or other obligations related to the sale and service of analyzers.

(b) Criteria for Standards. – In developing air quality and emission control standards, motor vehicle emissions standards, motor vehicle emissions inspection and maintenance requirements, rules governing the content of motor fuels or requiring the use of reformulated gasoline, and other standards and plans to improve ambient air quality, the Commission shall consider varying local conditions and requirements and may prescribe uniform standards and plans throughout the State or different standards and plans for different counties or areas as may be necessary and appropriate to improve ambient air quality in the State or within a particular county or area, achieve attainment or preclude violations of state or national ambient air quality standards, meet other federal requirements, or achieve the purposes of this Article and Article 21.

(c) Chapter 150B of the General Statutes governs the adoption and publication of rules under this Article.

(d), (e) Repealed by Session Laws 1987, c. 827, s. 205.

(f), (g) Repealed by Session Laws 1995, c. 507, s. 27. (1973, c. 821, s. 6; c. 1262, s. 23; 1975, c. 784; 1979, c. 545, s. 1; c. 931; 1987, c. 827, ss. 154, 205; 1989, c. 132; c. 168, s. 48; 1991, c. 403, s. 3; c. 552, s. 9; c. 761, s. 40; 1991 (Reg. Sess., 1992), c. 889, s. 3; 1993, c. 400, s. 7; 1993 (Reg. Sess., 1994), c. 686, s. 6; 1995, c. 123, s. 9; c. 507, s. 27.8(s); 1997-458, s. 3.1; 1999-328, s. 3.12; 2000-134, s. 1; 2002-4, s. 3; 2002-165, s. 1.7.)

ATTACHMENT 7: NORTH CAROLINA STATE AIR TOXICS RULES

SECTION .0700 - TOXIC AIR POLLUTANT PROCEDURES

15A NCAC 02Q .0701 APPLICABILITY

(a) With the exceptions in Rule .0702 of this Section, no person shall cause or allow any toxic air pollutant named in 15A NCAC 02D .1104 to be emitted from any facility into the atmosphere at a rate that exceeds the applicable rate(s) in Rule .0711 of this Section without having received a permit to emit toxic air pollutants as follows:

(1) new facilities according to Rule .0704 of this Section;
(2) existing facilities according to Rule .0705 of this Section;
(3) modifications according to Rule .0706 of this Section.

(b) The Division shall assess risks from all existing exempt combustion sources using exposure and risk assessment methodologies and information and report findings to the EMC no later than July 1, 2014, and every five years thereafter. Based on these findings, the EMC shall determine if amendments to this Section are appropriate and necessary.

(c) Facilities required to comply with MACT standards under 15A NCAC 02D .1109, .1111, or .1112 or 40 CFR Part 63 shall be deemed in compliance with this Subchapter and 15A NCAC 02D .1100 unless the Division determines that modeled emissions result in one or more acceptable ambient levels in 15A NCAC 02D .1104 being exceeded. This review shall be made according to the procedures in 15A NCAC 02D .1106. Once a facility demonstrates compliance with the acceptable ambient levels in 15A NCAC 02D .1104, future demonstrations shall only be required on a five-year basis. When an acceptable ambient level for a toxic air pollutant in 15A NCAC 02D .1104 is changed, any condition that has previously been put in a permit to protect the previous acceptable ambient level for that toxic air pollutant shall not be changed until the permit is renewed, at which time the owner or operator of the facility shall submit an air toxic evaluation showing that the new acceptable ambient level will not be exceeded.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; February 1, 2005.

15A NCAC 02Q .0702 EXEMPTIONS

(a) A permit to emit toxic air pollutants shall not be required under this Section for:

(1) residential wood stoves, heaters, or fireplaces;
(2) hot water heaters that are used for domestic purposes only and are not used to heat process water;
(3) maintenance, structural changes, or repairs that do not change capacity of that process, fuel-burning, refuse-burning, or control equipment, and do not involve any change in quality or nature or increase in quantity of emission of any regulated air pollutant or toxic air pollutant;
(4) housekeeping activities or building maintenance procedures, including painting buildings, resurfacing floors, roof repair, washing, portable vacuum cleaners, sweeping, use and associated storage of janitorial products, or non-asbestos bearing insulation removal;
(5) use of office supplies, supplies to maintain copying equipment, or blueprint machines;
(6) paving parking lots;
(7) replacement of existing equipment with equipment of the same size, type, and function if the new equipment:
    (A) does not result in an increase to the actual or potential emissions of any regulated air pollutant or toxic air pollutant;
    (B) does not affect compliance status; and
    (C) fits the description of the existing equipment in the permit, including the application, such that the replacement equipment can be operated under that permit without any changes to the permit;
(8) comfort air conditioning or comfort ventilation systems that do not transport, remove, or exhaust regulated air pollutants to the atmosphere;
(9) equipment used for the preparation of food for direct on-site human consumption;
(10) non-self-propelled non-road engines, except generators, regulated by rules adopted under Title II of the federal Clean Air Act;

(11) stacks or vents to prevent escape of sewer gases from domestic waste through plumbing traps;
(12) use of fire fighting equipment;
(13) the use for agricultural operations by a farmer of fertilizers, pesticides, or other agricultural chemicals containing one or more of the compounds listed in 15A NCAC 02D .1104 if such compounds are applied according to agronomic practices acceptable to the North Carolina Department of Agriculture;
(14) asbestos demolition and renovation projects that comply with 15A NCAC 02D .1110 and that are being done by persons accredited by the Department of Health and Human Services under the Asbestos Hazard Emergency Response Act;
(15) incinerators used only to dispose of dead animals or poultry as identified in 15A NCAC 02D .1201(c)(4) or incinerators used only to dispose of dead pets as identified in 15A NCAC 02D .1208(a)(2)(A);
(16) refrigeration equipment that is consistent with Section 601 through 618 of Title VI (Stratospheric Ozone Protection) of the federal Clean Air Act, 40 CFR Part 82, and any other regulations promulgated by EPA under Title VI for stratospheric ozone protection, except those units used as or with air pollution control equipment;
(17) laboratory activities:
    (A) bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments;
    (B) bench scale experimentation, chemical or physical analyses, training or instruction from nonprofit, non-production educational laboratories;
    (C) bench scale experimentation, chemical or physical analyses, training or instruction from hospital or health laboratories pursuant to the determination or diagnoses of illnesses; and
    (D) research and development laboratory activities that are not required to be permitted under Section .0500 of this Subchapter provided the activity produces no commercial product or feedstock material;
(18) combustion sources as defined in 15A NCAC 02Q .0703 except new or modified combustion sources permitted on or after July 10, 2010.

The DAQ shall review and recommend to the EMC no later than July 1, 2014, and every five years thereafter, whether the exemption shall remain in place or be removed.

(19) storage tanks used only to store:
    (A) inorganic liquids with a true vapor pressure less than 1.5 pounds per square inch absolute;
    (B) fuel oils, kerosene, diesel, crude oil, used motor oil, lubricants, cooling oils, natural gas, liquefied petroleum gas, or petroleum products with a true vapor pressure less than 1.5 pounds per square inch absolute;
(20) dispensing equipment used solely to dispense diesel fuel, kerosene, lubricants or cooling oils;
(21) portable solvent distillation systems that are exempted under 15A NCAC 02Q .0102(c)(1)(I).
(22) processes:
    (A) electric motor burn-out ovens with secondary combustion chambers or afterburners;
    (B) electric motor bake-on ovens;
    (C) burn-off ovens for paint-line hangers with afterburners;
    (D) hosiery knitting machines and associated lint screens, hosiery dryers and associated lint screens, and hosiery dyeing processes where bleach or solvent dyes are not used;
    (E) blade wood planers planing only green wood;
    (F) saw mills that saw no more than 2,000,000 board feet per year provided only green wood is sawed;
    (G) perchloroethylene drycleaning processes with 12-month rolling total consumption of:
        (i) less than 1366 gallons of perchloroethylene per year for facilities with dry-to-dry machines only;
        (ii) less than 1171 gallons of perchloroethylene per year for facilities with transfer machines only; or
        (iii) less than 1171 gallons of perchloroethylene per year for facilities with both transfer and dry-to-dry machines;

(23) wood furniture manufacturing operations as defined in 40 CFR 63.801(a) that comply with the emission limitations and other requirements of 40 CFR Part 63 Subpart JJ, provided that the terms of this exclusion shall not affect the authority of the Director under 15A NCAC 02Q .0712;

(24) wastewater treatment systems at pulp and paper mills for hydrogen sulfide and methyl mercaptan only;

(25) gasoline dispensing facilities or gasoline service station operations that comply with 15A NCAC 02D .0928 and .0932 and that receive gasoline from bulk gasoline plants or bulk gasoline terminals that comply with 15A NCAC 02D .0524, .0925, .0926, .0927, .0932, and .0933 via tank trucks that comply with 15A NCAC 02D .0932;

(26) the use of ethylene oxide as a sterilant in the production and subsequent storage of medical devices or the packaging and subsequent storage of medical devices for sale if the emissions from all new and existing sources at the facility described in 15A NCAC 02D .0538(d) are controlled at least to the degree described in 15A NCAC 02D .0538(d) and the facility complies with 15A NCAC 02D .0538(e) and (f);

(27) bulk gasoline plants, including the storage and handling of fuel oils, kerosenes, and jet fuels but excluding the storage and handling of other organic liquids, that comply with 15A NCAC 02D .0524, .0925, .0926, .0932, and .0933; unless the Director finds that a permit to emit toxic air pollutants is required under Paragraph (b) of this Rule or Rule .0712 of this Section for a particular bulk gasoline plant; or

(28) bulk gasoline terminals, including the storage and handling of fuel oils, kerosenes, and jet fuels but excluding the storage and handling of other organic liquids, that comply with 15A NCAC 02D .0524, .0925, .0927, .0932, and .0933 if the bulk gasoline terminal existed before November 1, 1992; unless:

(A) the Director finds that a permit to emit toxic air pollutants is required under Paragraph (b) of this Rule or Rule .0712 of this Section for a particular bulk gasoline terminal, or

(B) the owner or operator of the bulk gasoline terminal meets the requirements of 15A NCAC 02D .0927(i).

(b) Emissions from the activities identified in Subparagraphs (a)(25) through (a)(28) of this Rule shall be included in determining compliance with the toxic air pollutant requirements in this Section and shall be included in the permit if necessary to assure compliance. Emissions from the activities identified in Subparagraphs (a)(1) through (a)(24) of this Rule shall not be included in determining compliance with the toxic air pollutant requirements in this Section.

(c) The addition or modification of an activity identified in Paragraph (a) of this Rule shall not cause the source or facility to be evaluated for emissions of toxic air pollutants.

(d) Because an activity is exempted from being required to have a permit does not mean that the activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; April 1, 2005; July 1, 2002; July 1, 2000.

15A NCAC 02Q .0703 DEFINITIONS

For the purposes of this Section, the following definitions apply:

(1) "Actual rate of emissions" means:

(a) for existing sources:

(i) for toxic air pollutants with an annual averaging period, the average rate or rates at which the source actually emitted the pollutant during the two-year period preceding the date of the particular modification and that represents normal operation of the source. If this period does not represent normal operation, the Director may allow the use of a different, more representative, period.

(ii) for toxic air pollutants with a 24-hour or one-hour averaging period, the maximum actual emission rate at which the source actually emitted for the applicable averaging period during the two-year period preceding the date of the particular modification and that represents normal operation of the source. If this period does not represent

normal operation, the Director may require or allow the use of a different, more representative, period.

(b) for new or modified sources, the average rate or rates, determined for the applicable averaging period(s), that the proposed source will actually emit the pollutant as determined by engineering evaluation.

(2) "Applicable averaging period" means the averaging period for which an acceptable ambient limit has been established by the Commission and is listed in 15A NCAC 02D .1104.

(3) "Bioavailable chromate pigments" means the group of chromium (VI) compounds consisting of calcium chromate (CAS No.13765-19-0), calcium dichromate (CAS No. 14307-33-6), strontium chromate (CAS No. 7789-06-2), strontium dichromate (CAS No. 7789-06-2), zinc chromate (CAS No. 13530-65-9), and zinc dichromate (CAS No. 7789-12-0).

(4) "CAS Number" means the Chemical Abstract Service registry number identifying a particular substance.

(5) "Chromium (VI) equivalent" means the molecular weight ratio of the chromium (VI) portion of a compound to the total molecular weight of the compound multiplied by the associated compound emission rate or concentration at the facility.

(6) "Combustion sources" means boilers, space heaters, process heaters, internal combustion engines, and combustion turbines, which burn only unadulterated wood or unadulterated fossil fuel. It does not include incinerators, waste combustors, kilns, dryers, or direct heat exchange industrial processes.

(7) "Creditable emissions" means actual decreased emissions that have not been previously relied on to comply with Subchapter 15A NCAC 02D. All creditable emissions shall be enforceable by permit condition.

(8) "Cresol" means o-cresol, p-cresol, m-cresol, or any combination of these compounds.

(9) "Evaluation" means:

(a) a determination that the emissions from the facility, including emissions from sources exempted by Rule .0702 (a) (24) through (27) of this Section, are less than the rate listed in Rule .0711 of this Section; or

(b) a determination of ambient air concentrations as described under 15A NCAC 02D .1106, including emissions from sources exempted by Rule .0702 (24) through (27) of this Section.

(10) "GACT" means any generally available control technology emission standard applied to an area source or facility pursuant to Section 112 of the federal Clean Air Act.

(11) "Hexane isomers except n-hexane" means 2-methyl pentane, 3-methyl pentane, 2,2-dimethyl butane, 2,3-dimethyl butane, or any combination of these compounds.

(12) "MACT" means any maximum achievable control technology emission standard applied to a source or facility pursuant to Section 112 federal Clean Air Act.

(13) "Maximum feasible control" means the maximum degree of reduction for each pollutant subject to regulation under this Section using the best technology that is available taking into account, on a case-by-case basis, human health, energy, environmental, and economic impacts and other costs.

(14) "Modification" means any physical changes or changes in the methods of operation that result in a net increase in emissions or ambient concentration of any pollutant listed in Rule .0711 of this Section or that result in the emission of any pollutant listed in Rule .0711 of this Section not previously emitted.

(15) "Net increase in emissions" means for a modification the sum of any increases in permitted allowable and decreases in the actual rates of emissions from the proposed modification from the sources at the facility for which the air permit application is being filed. If the net increase in emissions from the proposed modification is greater than zero, all other increases in permitted allowable and decreases in the actual rates of emissions at the facility within five years immediately preceding the filing of the air permit application for the proposed modification that are otherwise creditable emissions may be included.

(16) "Nickel, soluble compounds" means the soluble nickel salts of chloride ($NiCl_2$, CAS No. 7718-54-9), sulfate ($NiSO_4$, CAS No. 7786-81-4), and nitrate ($Ni(NO_3)_2$, CAS No. 13138-45-9).

(17) "Non-specific chromium (VI) compounds" means the group of compounds consisting of any chromium (VI) compounds not specified in this Section as a bioavailable chromate pigment or a soluble chromate compound.

(18) "Polychlorinated biphenyls" means any chlorinated biphenyl compound or mixture of chlorinated biphenyl compounds.

(19) "Pollution prevention plan" means a written description of current and projected plans to reduce, prevent, or minimize the generation of pollutants by source reduction and recycling and includes a site-wide assessment of pollution prevention opportunities at a facility that addresses sources of air pollution, water pollution, and solid and hazardous waste generation.

(20) "SIC" means standard industrial classification code.

(21) "Soluble chromate compounds" means the group of chromium (VI) compounds consisting of ammonium chromate (CAS No. 7788-98-9), ammonium dichromate (CAS No. 7789-09-5), chromic acid (CAS No. 7738-94-5), potassium chromate (CAS No. 7789-00-6), potassium dichromate (CAS No. 7778-50-9), sodium chromate (CAS No. 7775-11-3), and sodium dichromate (CAS No. 10588-01-9).

(22) "Toxic air pollutant" means any of those carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants listed in 15A NCAC 02D .1104.

(23) "Unadulterated wood" means wood that is not painted, varnished, stained, oiled, waxed, or otherwise coated or treated with any chemical. Plywood, particle board, and resinated wood are not unadulterated wood.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. April 1, 2001.

15A NCAC 02Q .0704 NEW FACILITIES

(a) This Rule applies only to facilities that begin construction after September 30, 1993.

(b) The owner or operator of a facility that:

(1) is required to have a permit because of applicability of a Section in Subchapter 2D of this Chapter other than Section .1100 of Subchapter 2D of this Chapter except for facilities whose emissions of toxic air pollutants result only from sources exempted under Rule .0102 of this Subchapter;

(2) has one or more sources subject to a MACT or GACT standard that has previously been promulgated under Section 112(d) of the federal Clean Air Act or established under Section 112(e) or 112(j) of the Clean Air Act; or

(3) has a standard industrial classification code that has previously been called under Rule .0705 of this Section;

shall have received a permit to emit toxic air pollutants before beginning construction, and shall comply with such permit when beginning operation.

(c) The owner or operator of a facility subject to this Rule who has not received a permit to emit toxic air pollutants under Paragraph (b) of this Rule shall apply for a permit to emit toxic air pollutants according to Paragraph (b) or (c) of Rule .0705 of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0705 EXISTING FACILITIES AND SIC CALLS

(a) This Rule applies only to facilities that were in operation or permitted to construct before October 1, 1993 and new facilities subject to Rule .0704(c) of this Section.

(b) For sources at a facility subject to a MACT or GACT standard, or that may be subject to a MACT or GACT standard based on studies required by Section 112(n)(1) of the Clean Air Act, 42 U.S.C. Section 7412(n)(1), the owner or operator of the facility shall comply with 15A NCAC 2D .1100 as follows:

(1) When the owner or operator submits a permit application to comply with the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility, he shall also

submit a permit application to comply with 15A NCAC 2D .1100. The facility shall comply with 15A NCAC 2D .1100 by the same deadline that it is required to comply with the last MACT or GACT.

(2) If the owner or operator does not have to submit a permit application to comply with the last MACT or GACT, excluding the MACT or GACT for combustion sources, he shall submit a permit application to comply with 15A NCAC 2D .1100 within six months after the promulgation of the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility or by January 1, 1999, whichever is later. The facility shall comply with 15A NCAC 2D .1100 by the same deadline that it is required to comply with the last MACT or GACT.

(3) If the owner or operator submitted a permit application for the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility before July 1, 1998, he shall submit a permit application to comply with 15A NCAC 2D .1100 by January 1, 1999. The facility shall comply with 15A NCAC 2D .1100 within three years from the date that the permit is issued.

The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding those sources exempt from evaluation under Rule .0702 of this Section. The owner or operator of a facility whose actual rate of emissions from all sources are not greater than the toxic permitting emissions rates listed in Rule .0711 of this Section does not have to file a permit application to comply with 15A NCAC 2D .1100. He shall provide documentation that the facility=s emissions of toxic air pollutants are below the levels in Rule .0711 of this Section if the Director requests this documentation.

(c) For facilities that will not be subject to a MACT or GACT standard, or that will be subject only to a MACT or GACT standard for unadulterated fuel combustion sources, the owner or operator of the facility shall have 180 days to apply for a permit or permit modification for the emissions of toxic air pollutants after receiving written notification from the Director that such permit or permit modification is required. The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section. Such facilities shall comply with 15A NCAC 2D .1100 within three years from the date that the permit is issued. The Director shall notify facilities subject to this Paragraph by calling for permit applications based on standard industrial classifications, that is, the Director shall call at one time for permits for all facilities statewide that have the same four-digit standard industrial classification code, except those facilities in certified local air pollution control agency areas. (Local air pollution control agencies shall call the standard industrial classification code within their jurisdiction when the Director calls that code. A local air pollution control agency may call a particular standard industrial classification code before the Director calls that code if the Commission approves the call by the local air pollution control agency. In deciding if it shall grant permission to a local air pollution control agency to call a particular standard industrial classification code before the Director calls that code, the Commission shall consider if the call is necessary to protect human health or to allow the local program to better implement these Rules in its jurisdiction.) Facilities with sources that will be subject to MACT that receive an SIC call shall notify the Director and shall comply with 15 NCAC 2D .1100 in accordance with Paragraph (b) of this Rule. All sources, regardless of their standard industrial classification code, excluding sources exempt from evaluation in Rule .0702 of this Section, at the facility shall be included in the call for permit applications. When the Environmental Protection Agency (EPA) promulgates MACT under Section 112(e) of the federal Clean Air Act, excluding cooling towers, the Director shall notify the owners or operators of facilities in the standard industrial classification that best corresponds to the MACT category that they are required to submit a permit application for the emissions of toxic air pollutants from their facilities. If the EPA fails to promulgate a MACT as scheduled, the Director shall notify the owners or operators of facilities 18 months after the missed promulgation date that they are required to submit a permit application for the emissions of toxic air pollutants from their facilities. The owner or operator of a facility whose actual rate of emissions from all sources are not greater than the toxic permitting emissions rates listed in Rule .0711 of this Section does not have to file a permit application to comply with 15A NCAC 2D .1100. He shall provide documentation that the facility=s emissions of toxic air pollutants are below the levels in Rule .0711 of this Section if the Director requests this documentation. The Director may request this documentation if he finds that the facility's potential emissions of toxic air pollutants are above the levels in Rule .0711 of this Section.

(d) The owner or operator of a facility may request a permit to emit toxic air pollutants any time before such application is required. The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0706 MODIFICATIONS

(a) For modification of any facility undertaken after September 30, 1993, that:

(1) is required to have a permit because of applicability of a Section, other than Section .1100, in Subchapter 02D of this Chapter except for facilities whose emissions of toxic air pollutants result only from insignificant activities as defined in 15A NCAC 02Q .0103(20) or sources exempted under Rule .0102 of this Subchapter;

(2) has one or more sources subject to a MACT or GACT standard that has previously been promulgated under Section 112(d) of the federal Clean Air Act or established under Section 112(e) or 112(j) of the Clean Air Act; or

(3) has a standard industrial classification code that has previously been called under Rule .0705 of this Section;

the owner or operator of the facility shall comply with Paragraphs (b) and (c) of this Rule.

(b) The owner or operator of the facility shall submit a permit application to comply with 15A NCAC 02D .1100 if the modification results in:

(1) a net increase in emissions or ambient concentration of any toxic air pollutant that the facility was emitting before the modification; or

(2) emissions of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in Rule .0711 of this Section.

(c) The permit application filed pursuant to this Rule shall include an evaluation for all toxic air pollutants covered under 15A NCAC 02D .1104 for which there is:

(1) a net increase in emissions of any toxic air pollutant that the facility was emitting before the modification; and

(2) emission of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in Rule .0711 of this Section.

All sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section, emitting these toxic air pollutants shall be included in the evaluation. Notwithstanding 02Q .0702(a)(18), on and after July 10, 2010, an evaluation of a modification to a combustion source shall also include emissions from all permitted combustion sources as defined in 02Q .0703. A permit application filed pursuant to Subparagraph (b)(2) of this Rule shall include an evaluation for all toxic air pollutants identified by the Director as causing an acceptable ambient level in 15A NCAC 02D .1104 to be exceeded.

(d) If a source is included in an air toxic evaluation, but is not the source that is being added or modified at the facility, and if the emissions from this source must be reduced in order for the facility to comply with the rules in this Section and 15A NCAC 02D .1100, then the emissions from this source shall be reduced by the time that the new or modified source begins operating such that the facility shall be in compliance with the rules in this Section and 15A NCAC 02D .1100.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, C. 168, S. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; December 1, 2005; April 1, 2005.

15A NCAC 02Q .0707 PREVIOUSLY PERMITTED FACILITIES

Any facility with a permit that contains a restriction based on the evaluation of a source exempted under Rule .0702 of this Section may request a permit modification to adjust the restriction by removing from consideration the portion of emissions resulting from the exempt source unless the Director determines that the removal of the exempt source will result in an acceptable ambient level in 15A NCAC 2D .1104 being exceeded. The Director shall modify the permit to remove the applicability of the air toxic rules to the exempt source. No fee shall be charged solely for such permit modification.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;

Eff. July 1, 1998.

15A NCAC 02Q .0708 COMPLIANCE SCHEDULE FOR PREVIOUSLY UNKNOWN TOXIC AIR POLLUTANT EMISSIONS

(a) The owner or operator of a facility permitted to emit toxic air pollutants shall submit a permit application within six months after the owner or operator learns of an emission of a previously unknown toxic air pollutant from a permitted source that would have been included in the permit when it was issued. The application shall include the information required by Paragraph (b) of this Rule.

(b) When an application to revise a permit is submitted under this Rule, the owner or operator shall in addition to the application, submit to the Director:

(1) an evaluation for the pollutant according to this Section and 15 NCAC 2D .1100 that demonstrates compliance with the acceptable ambient level in 15A NCAC 2D .1104; or

(2) a compliance schedule containing the information required under Paragraph (c) of this Rule for the proposed modifications to the facility required to comply with the acceptable ambient level according to this Section and Section 15A NCAC 2Q .1100.

(c) The compliance schedule required under Subparagraph (b)(2) of this Rule shall contain the following increments of progress as applicable:

(1) a date by which contracts for emission control and process equipment shall be awarded or orders shall be issued for the purchase of component parts;

(2) a date by which on-site construction or installation of the emission control and process equipment shall begin;

(3) a date by which on-site construction or installation of the emission control and process equipment shall be completed; and

(4) the date by which final compliance shall be achieved.

(d) Final compliance shall be achieved no later than:

(1) six months after the permit modification or renewal is issued if construction or installation of emission control or process equipment is not required;

(2) one year after the permit modification or renewal is issued if construction or installation of emission control or process equipment is required; or

(3) the time that is normally required to construct a stack or install other dispersion enhancement modifications but not more than one year after the permit modification or renewal is issued.

(e) The owner or operator shall certify to the Director within 10 days after each applicable deadline for each increment of progress required under Paragraph (c) of this Rule whether the required increment of progress has been met.

History Note: *Authority G.S. 143-215.3(a)(1); 43-215.107(a)(3),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. July 1, 1998.*

15A NCAC 02Q .0709 DEMONSTRATIONS

(a) Demonstrations. The owner or operator of a source who is applying for a permit or permit modification to emit toxic air pollutants shall:

(1) demonstrate to the satisfaction of the Director through dispersion modeling that the emissions of toxic air pollutants from the facility will not cause any acceptable ambient level listed in 15A NCAC 02D .1104 to be exceeded beyond the premises (adjacent property boundary); or

(2) demonstrate to the satisfaction of the Commission or its delegate that the ambient concentration beyond the premises (adjacent property boundary) for the subject toxic air pollutant shall not adversely affect human health (e.g., a risk assessment specific to the facility) though the concentration is higher than the acceptable ambient level in 15A NCAC 02D .1104 by providing one of the following demonstrations:

(A) the area where the ambient concentrations are expected to exceed the acceptable ambient levels in 15A NCAC 02D .1104 is not inhabitable or occupied for the duration of the averaging time of the pollutant of concern, or

(B) new toxicological data that show that the acceptable ambient level in 15A NCAC 02D .1104 for the pollutant of concern is too low and the facility's ambient impact is below the level indicated by the new toxicological data.

(b) Technical Infeasibility and Economic Hardship. This Paragraph shall not apply to any incinerator covered under 15A NCAC 02D .1200. The owner or operator of any source constructed before May 1, 1990, or a perchloroethylene dry cleaning facility subject to a GACT standard under 40 CFR 63.320 through 63.325, or a combustion source as defined in Rule .0703 of this Section permitted before July 10, 2010, who cannot supply a demonstration described in Paragraph (a) of this Rule shall:

(1) demonstrate to the satisfaction of the Commission or its delegate that complying with the guidelines in 15A NCAC 02D .1104 is technically infeasible (the technology necessary to reduce emissions to a level to prevent the acceptable ambient levels in 15A NCAC 02D .1104 from being exceeded does not exist); or

(2) demonstrate to the satisfaction of the Commission or its delegate that complying with the guidelines in 15A NCAC 02D .1104 would result in serious economic hardship. (In deciding if a serious economic hardship exists, the Commission or its delegate shall consider market impact; impacts on local, regional and state economy; risk of closure; capital cost of compliance; annual incremental compliance cost; and environmental and health impacts.)

If the owner or operator makes a demonstration to the satisfaction of the Commission or its delegate pursuant to Subparagraphs (1) or (2) of this Paragraph, the Director shall require the owner or operator of the source to apply maximum feasible control. Maximum feasible control shall be in place and operating within three years from the date that the permit is issued for the maximum feasible control.

(c) Pollution Prevention Plan. The owner or operator of any facility using the provisions of Part (a)(2)(A) or Paragraph (b) of this Rule shall develop and implement a pollution prevention plan consisting of the following minimum elements:

(1) statement of corporate and facility commitment to pollution prevention;
(2) identification of current and past pollution prevention activities;
(3) timeline and strategy for implementation;
(4) description of ongoing and planned employee education efforts;
(5) identification of internal pollution prevention goal selected by the facility and expressed in either qualitative or quantitative terms.

The facility shall submit along with the permit application the pollution prevention plan. The pollution prevention plan shall be maintained on site. A progress report on implementation of the plan shall be prepared by the facility annually and be made available to Division personnel for review upon request.

(d) Modeling Demonstration. If the owner or operator of a facility demonstrates by modeling that no toxic air pollutant emitted from the facility exceeds the acceptable ambient level values given in 15A NCAC 02D .1104 beyond the facility's premises, further modeling demonstration is not required with the permit application. However, the Commission may still require more stringent emission levels according to its analysis under 15A NCAC 02D .1107.

(e) Change in Acceptable Ambient Level. When an acceptable ambient level for a toxic air pollutant in 15A NCAC 02D .1104 is changed, any condition that has previously been put in a permit to protect the previous acceptable ambient level for that toxic air pollutant shall not be changed until:

(1) The permit is renewed, at which time the owner or operator of the facility shall submit an air toxic evaluation showing that the new acceptable ambient level will not be exceeded (If additional time is needed to bring the facility into compliance with the new acceptable ambient level, the owner or operator shall negotiate a compliance schedule with the Director. The compliance schedule shall be written into the facility's permit and final compliance shall not exceed two years from the effective date of the change in the acceptable ambient level.): or

(2) The owner or operator of the facility requests that the condition be changed and submits along with that request an air toxic evaluation showing that the new acceptable ambient level shall not be exceeded.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; February 1, 2005.

15A NCAC 02Q .0710 PUBLIC NOTICE AND OPPORTUNITY FOR PUBLIC HEARING

(a) If the owner or operator of a facility chooses to make a demonstration pursuant to Rule .0709 (a)(2) or (b) of this Section, the Commission or its delegate shall approve or disapprove the permit after a public notice with an opportunity for a public hearing.

(b) The public notice shall be given by publication in a newspaper of general circulation in the area where the facility is located and shall be mailed to persons who are on the Division's mailing list for air quality permit notices.

(c) The public notice shall identify:

(1) the affected facility;
(2) the name and address of the permittee;
(3) the name and address of the person to whom to send comments and requests for public hearing;
(4) the name, address, and telephone number of a Divisional staff person from whom interested persons may obtain additional information, including copies of the draft permit, the application, compliance plan, pollution prevention plan, monitoring and compliance reports, all other relevant supporting materials, and all other materials available to the Division that are relevant to the permit decision;
(5) the activity or activities involved in the permit action;
(6) any emissions change involved in any permit modification;
(7) a brief description of the public comment procedures;
(8) the procedures to follow to request a public hearing unless a public hearing has already been scheduled; and
(9) the time and place of any hearing that has already been scheduled.

(d) The notice shall allow at least 30 days for public comments.

(e) If the Director determines that significant public interest exists or that the public interest will be served, the Director shall require a pubic hearing to be held on a draft permit. Notice of a public hearing shall be given at least 30 days before the public hearing.

(f) The Director shall make available for public inspection in at least one location in the region affected, the information submitted by the permit applicant and the Division=s analysis of that application.

(g) Any persons requesting copies of material identified in Subparagraph (b)(4) of this Rule shall pay ten cents ($0.10) a page for each page copied. Confidential material shall be handled in accordance with Rule .0107 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0711 EMISSION RATES REQUIRING A PERMIT

(a) A permit to emit toxic air pollutants is required for any facility whose actual (or permitted if higher) rate of emissions from all sources are greater than any one of the following toxic air pollutant permitting emissions rates:

Pollutant (CAS Number)	Carcinogens lb/yr	Chronic Toxicants lb/day	Acute Systemic Toxicants lb/hr	Acute Irritants lb/hr
acetaldehyde (75-07-0)				6.8
acetic acid (64-19-7)				0.96
acrolein (107-02-8)				0.02
acrylonitrile (107-13-1)		0.4	0.22	
ammonia (7664-41-7)				0.68
aniline (62-53-3)			0.25	
arsenic and inorganic arsenic compounds	0.016			
asbestos (1332-21-4)	1.9×10^{-6}			
aziridine (151-56-4)		0.13		
benzene (71-43-2)	8.1			
benzidine and salts (92-87-5)	0.0010			

benzo(a)pyrene (50-32-8)	2.2			
benzyl chloride (100-44-7)			0.13	
beryllium (7440-41-7)	0.28			
beryllium chloride (7787-47-5)	0.28			
beryllium fluoride (7787-49-7)	0.28			
beryllium nitrate (13597-99-4)	0.28			
bioavailable chromate pigments, as chromium (VI) equivalent	0.0056			
bis-chloromethyl ether (542-88-1)	0.025			
bromine (7726-95-6)				0.052
1,3-butadiene (106-99-0)	11			
cadmium (7440-43-9)	0.37			
cadmium acetate (543-90-8)	0.37			
cadmium bromide (7789-42-6)	0.37			
carbon disulfide (75-15-0)		3.9		
carbon tetrachloride (56-23-5)	460			
chlorine (7782-50-5)		0.79		0.23
chlorobenzene (108-90-7)		46		
chloroform (67-66-3)	290			
chloroprene (126-99-8)		9.2	0.89	
cresol (1319-77-3)			0.56	
p-dichlorobenzene (106-46-7)				16.8
dichlorodifluoromethane (75-71-8)		5200		
dichlorofluoromethane (75-43-4)		10		
di(2-ethylhexyl)phthalate (117-81-7)		0.63		
dimethyl sulfate (77-78-1)		0.063		
1,4-dioxane (123-91-1)		12		
epichlorohydrin (106-89-8)	5600			
ethyl acetate (141-78-6)			36	
ethylenediamine (107-15-3)		6.3	0.64	
ethylene dibromide (106-93-4)	27			
ethylene dichloride (107-06-2)	260			
ethylene glycol monoethyl ether (110-80-5)		2.5	0.48	
ethylene oxide (75-21-8)	1.8			
ethyl mercaptan (75-08-1)			0.025	
fluorides		0.34	0.064	
formaldehyde (50-00-0)				0.04
hexachlorocyclopentadiene (77-47-4)		0.013	0.0025	
hexachlorodibenzo-p-dioxin (57653- 85-7)	0.0051			
n-hexane (110-54-3)		23		
hexane isomers except n-hexane				92
hydrazine (302-01-2)		0.013		
hydrogen chloride (7647-01-0)				0.18
hydrogen cyanide (74-90-8)		2.9	0.28	
hydrogen fluoride (7664-39-3)		0.63		0.064
hydrogen sulfide (7783-06-4)		1.7		
maleic anhydride (108-31-6)		0.25	0.025	
manganese and compounds		0.63		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		0.013		
manganese tetroxide (1317-35-7)		0.13		

mercury, alkyl		0.0013		
mercury, aryl and inorganic compounds		0.013		
mercury, vapor (7439-97-6)		0.013		
methyl chloroform (71-55-6)		250		64
methylene chloride (75-09-2)	1600		0.39	
methyl ethyl ketone (78-93-3)		78		22.4
methyl isobutyl ketone (108-10-1)		52		7.6
methyl mercaptan (74-93-1)			0.013	
nickel carbonyl (13463-39-3)		0.013		
nickel metal (7440-02-0)		0.13		
nickel, soluble compounds, as nickel		0.013		
nickel subsulfide (12035-72-2)	0.14			
nitric acid (7697-37-2)				0.256
nitrobenzene (98-95-3)		1.3	0.13	
n-nitrosodimethylamine (62-75-9)	3.4			
non-specific chromium (VI) compounds, as chromium (VI) equivalent	0.0056			
pentachlorophenol (87-86-5)		0.063	0.0064	
perchloroethylene (127-18-4)	13000			
phenol (108-95-2)			0.24	
phosgene (75-44-5)		0.052		
phosphine (7803-51-2)				0.032
polychlorinated biphenyls (1336-36- 3)	5.6			
soluble chromate compounds, as chromium (VI) equivalent		0.013		
styrene (100-42-5)			2.7	
sulfuric acid (7664-93-9)		0.25	0.025	
tetrachlorodibenzo-p-dioxin (1746- 01-6)	0.00020			
1,1,1,2-tetrachloro-2,2,- difluoroethane (76-11-9)		1100		
1,1,2,2-tetrachloro-1,2- difluoroethane (76-12-0)		1100		
1,1,2,2-tetrachloroethane (79-34-5)	430			
toluene (108-88-3)		98		14.4
toluene diisocyanate,2,4-(584-84-9) and 2,6- (91-08-7) isomers		0.003		
trichloroethylene (79-01-6)	4000			
trichlorofluoromethane (75-69-4)			140	
1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)				240
vinyl chloride (75-01-4)	26			
vinylidene chloride (75-35-4)		2.5		
xylene (1330-20-7)		57		16.4

(b) For the following pollutants, the highest emissions occurring for any 15-minute period shall be multiplied by four and the product shall be compared to the value in Paragraph (a). These pollutants are:

(1) acetaldehyde (75-07-0);
(2) acetic acid (64-19-7);
(3) acrolein (107-02-8);
(4) ammonia (7664-41-7);
(5) bromine (7726-95-6);
(6) chlorine (7782-50-5);

(7) formaldehyde (50-00-0);
(8) hydrogen chloride (7647-01-0);
(9) hydrogen fluoride (7664-39-3); and
(10) nitric acid (7697-37-2).

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. January 1, 2010; June 1, 2008; April 1, 2005; February 1, 2005; April 1, 2001.

15A NCAC 02Q .0712 CALLS BY THE DIRECTOR

Notwithstanding any other provision of this Section or 15A NCAC 2D .1104, upon a written finding that a source or facility emitting toxic air pollutants presents an unacceptable risk to human health based on the acceptable ambient levels in 15A NCAC 2D .1104 or epidemiology studies, the Director may require the owner or operator of the source or facility to submit a permit application to comply with 15A NCAC 2D .1100 for any or all of the toxic air pollutants emitted from the facility.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0713 POLLUTANTS WITH OTHERWISE APPLICABLE FEDERAL STANDARDS OR REQUIREMENTS

(a) This Rule applies to the establishment of emission limitations or any other requirements pursuant to the requirements of this Section or 15A NCAC 2D .1100 for which a standard or requirement has been promulgated under Section 112 of the federal Clean Air Act including those contained in 15A NCAC 2D .1110 and .1111.

(b) For each facility subject to emission standards or requirements under Section 112 of the federal Clean Air Act, permits issued or revised according to Section .0500 of this Subchapter shall contain specific conditions that:

(1) reflect applicability criteria no less stringent than those in the otherwise applicable federal standards or requirements;
(2) require levels of control for each affected facility and source no less stringent than those contained in the otherwise applicable federal standards or requirements;
(3) require compliance and enforcement measures for each facility and source no less stringent than those in the otherwise applicable federal standards or requirements;
(4) express levels of control, compliance, and enforcement measures in the same form and units of measure as the otherwise applicable federal standards or requirements; and
(5) assure compliance by each affected facility no later than would be required by the otherwise applicable federal standard or requirement.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. July 1, 1998.

15A NCAC 02Q .0714 WASTEWATER TREATMENT SYSTEMS AT PULP AND PAPER MILLS

(a) This Rule applies to wastewater collection and treatment systems at pulp and paper mills that are exempted under Rule .0702 of this Section.

(b) Except for facilities that employ activated sludge type wastewater treatment systems, the owner or operator of a wastewater collection and treatment system covered under this Rule shall:

(1) submit to the Director estimates of hydrogen sulfide, total reduced sulfur, and methyl mercaptan emissions from wastewater collection and treatment systems and components using estimation methods or factors developed through industry testing and analytical studies and approved by the Director by November 1, 2005. In deciding approval of the estimation methods and factors, the Director shall

consider field validation procedures including the number of valid samples taken, when measurements are made, laboratory and field measurement quality assurance procedures, and other information necessary in producing accurate and precise measurements. The Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by January 1, 2006;

(2) using the emission estimates developed under Subparagraph (b)(1), perform air dispersion modeling of all hydrogen sulfide emission sources, including all emissions associated with the wastewater collection and treatment system, as described in 15A NCAC 02D .1106 (a) through (i). If the modeling analysis demonstrates that predicted concentrations of hydrogen sulfide are below the acceptable ambient levels outlined in 15A NCAC 02D .1104, no further plan development, measurement or monitoring action is required to maintain the exemption provided by this Rule. The results of the favorable modeling demonstration must be submitted to the Director by July 1, 2006. The Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by September 1, 2006;

(3) if the dispersion modeling performed under Subparagraph (b)(2) of this rule shows that the acceptable ambient level for hydrogen sulfide is exceeded, submit to the Director, on or before September 30, 2006, for approval by the Director, an ambient air quality monitoring plan designed to assess actual ambient levels of hydrogen sulfide typical of pulp and paper mill operations. The monitoring plan may be undertaken at each of the individual mill sites or, at the option of the affected mill sites, it may be undertaken at a single North Carolina mill site that the Director determines to be representative of the industry. The Director shall complete review and make the decision regarding approval of the monitoring plan by December 31, 2006;

(4) by June 30, 2007, implement the ambient monitoring study plan required in Subparagraph (b)(3) to determine the actual ambient levels of hydrogen sulfide near pulp and paper mills;

(5) complete the ambient hydrogen sulfide monitoring plan and report the results to the Director and to the Chairperson of the Environmental Management Commission by December 31, 2008 and the Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by February 28, 2009 for further consideration.

(c) To perform ambient monitoring for hydrogen sulfide under Subparagraph (b)(3) of this Rule, the owner or operator shall use monitoring methods and procedures approved by the Director. The Director shall approve the monitoring methods and procedures if he determines that they are an appropriate measure of ambient air concentrations of hydrogen sulfide.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143B-282;*
Eff. April 1, 2005.

SECTION .1100 - CONTROL OF TOXIC AIR POLLUTANTS

15A NCAC 02D .1101 PURPOSE

This Section sets forth the rules for the control of toxic air pollutants to protect human health.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(1),(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. May 1, 1990.*

15A NCAC 02D .1102 APPLICABILITY

(a) The toxic air pollutant rules in this Section apply to all facilities that emit a toxic air pollutant that are required to have a permit under 15A NCAC 2Q .0700.

(b) Sources at facilities subject to this Section shall comply with the requirements of this Section as well as with any applicable requirements in Sections .0500, .0900, and .1200 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(1),(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. May 1, 1990;*
Amended Eff. July 1, 1998; December 1, 1991.

15A NCAC 02D .1103 DEFINITION

For the purpose of this Section, the following definitions apply:

(1) "Asbestos" means asbestos fibers as defined in 40 CFR 61.141.

(2) "Bioavailable chromate pigments" means the group of chromium (VI) compounds consisting of calcium chromate (CAS No.13765-19-0), calcium dichromate (CAS No. 14307-33-6), strontium chromate (CAS No. 7789-06-2), strontium dichromate (CAS No. 7789-06-2), zinc chromate (CAS No. 13530-65-9), and zinc dichromate (CAS No. 7789-12-0).

(3) "CAS Number" means the Chemical Abstract Service registry number identifying a particular substance.

(4) "Chromium (VI) equivalent" means the molecular weight ratio of the chromium (VI) portion of a compound to the total molecular weight of the compound multiplied by the associated compound emission rate or concentration at the facility.

(5) "Non-specific chromium (VI) compounds" means the group of compounds consisting of any chromium (VI) compounds not specified in this Section as a bioavailable chromate pigment or a soluble chromate compound.

(6) "Cresol" means o-cresol, p-cresol, m-cresol or any combination of these compounds.

(7) "GACT" means any generally available control technology emission standard applied to an area source or facility pursuant to Section 112 of the federal Clean Air Act.

(8) "Hexane isomers except n-hexane" means 2-methyl pentane, 3-methyl pentane, 2,2-dimethyl butane, 2,3-dimethyl butane, or any combination of these compounds.

(9) "MACT" means any maximum achievable control technology emission standard applied to a source or facility pursuant to Section 112 of the federal Clean Air Act.

(10) "Nickel, soluble compounds" means the soluble nickel salts of chloride ($NiCl_2$, CAS No. 7718-54-9), sulfate ($NiSO_4$, CAS No. 7786-81-4), and nitrate ($Ni(NO_3)_2$, CAS No. 13138-45-9).

(11) "Polychlorinated biphenyls" means any chlorinated biphenyl compound or mixture of chlorinated biphenyl compounds.

(12) "Soluble chromate compounds" means the group of chromium (VI) compounds consisting of ammonium chromate (CAS No. 7788-98-9), ammonium dichromate (CAS No. 7789-09-5), chromic acid (CAS No. 7738-94-5), potassium chromate (CAS No. 7789-00-6), potassium dichromate (CAS No. 7778-50-9), sodium chromate (CAS No. 7775-11-3), and sodium dichromate (CAS No. 10588-01-9).

(13) "Toxic air pollutant" means any of those carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants listed in Rule .1104 of this Section.

History Note: *Authority G.S. 143-213; 143-215.3(a)(1); 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. May 1, 1990;
Amended Eff. April 1, 2001; July 1, 1998.

15A NCAC 02D .1104 TOXIC AIR POLLUTANT GUIDELINES

A facility shall not emit any of the following toxic air pollutants in such quantities that may cause or contribute beyond the premises (adjacent property boundary) to any significant ambient air concentration that may adversely affect human health. In determining these significant ambient air concentrations, the Division shall be guided by the following list of acceptable ambient levels in milligrams per cubic meter at 77° F (25° C) and 29.92 inches (760 mm) of mercury pressure (except for asbestos):

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
acetaldehyde (75-07-0)				27
acetic acid (64-19-7)				3.7
acrolein (107-02-8)				0.08
acrylonitrile (107-13-1)		0.03	1	
ammonia (7664-41-7)				2.7
aniline (62-53-3)			1	
arsenic and inorganic arsenic compounds	2.3×10^{-7}			
asbestos (1332-21-4)	2.8×10^{-11} fibers/ml			
aziridine (151-56-4)		0.006		
benzene (71-43-2)	1.2×10^{-4}			
benzidine and salts (92-87-5)	1.5×10^{-8}			
benzo(a)pyrene (50-32-8)	3.3×10^{-5}			
benzyl chloride (100-44-7)			0.5	
beryllium (7440-41-7)	4.1×10^{-6}			
beryllium chloride (7787-47-5)	4.1×10^{-6}			
beryllium fluoride (7787-49-7)	4.1×10^{-6}			
beryllium nitrate (13597-99-4)	4.1×10^{-6}			
bioavailable chromate pigments, as chromium (VI) equivalent	8.3×10^{-8}			
bis-chloromethyl ether (542-88-1)	3.7×10^{-7}			
bromine (7726-95-6)				0.2
1,3-butadiene (106-99-0)	4.4×10^{-4}			
cadmium (7440-43-9)	5.5×10^{-6}			
cadmium acetate (543-90-8)	5.5×10^{-6}			
cadmium bromide (7789-42-6)	5.5×10^{-6}			
carbon disulfide (75-15-0)		0.186		
carbon tetrachloride (56-23-5)	6.7×10^{-3}			
chlorine (7782-50-5)		0.0375		0.9
chlorobenzene (108-90-7)		2.2		
chloroform (67-66-3)	4.3×10^{-3}			
chloroprene (126-99-8)		0.44	3.5	
cresol (1319-77-3)			2.2	
p-dichlorobenzene (106-46-7)				66

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
dichlorodifluoromethane (75-71-8)		248		
dichlorofluoromethane (75-43-4)		0.5		
di(2-ethylhexyl)phthalate (117-81-7)		0.03		
dimethyl sulfate (77-78-1)		0.003		
1,4-dioxane (123-91-1)		0.56		
epichlorohydrin (106-89-8)	8.3×10^{-2}			
ethyl acetate (141-78-6)			140	
ethylenediamine (107-15-3)		0.3	2.5	
ethylene dibromide (106-93-4)	4.0×10^{-4}			
ethylene dichloride (107-06-2)	3.8×10^{-3}			
ethylene glycol monoethyl ether (110-80-5)		0.12	1.9	
ethylene oxide (75-21-8)	2.7×10^{-5}			
ethyl mercaptan (75-08-1)			0.1	
fluorides		0.016	0.25	
formaldehyde (50-00-0)				0.15
hexachlorocyclopentadiene (77-47-4)		0.0006	0.01	
hexachlorodibenzo-p-dioxin (57653-85-7)	7.6×10^{-8}			
n-hexane (110-54-3)		1.1		
hexane isomers except n-hexane				360
hydrazine (302-01-2)		0.0006		
hydrogen chloride (7647-01-0)				0.7
hydrogen cyanide (74-90-8)		0.14	1.1	
hydrogen fluoride (7664-39-3)		0.03		0.25
hydrogen sulfide (7783-06-4)		0.12		
maleic anhydride (108-31-6)		0.012	0.1	
manganese and compounds		0.031		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		0.0006		
manganese tetroxide (1317-35-7)		0.0062		
mercury, alkyl		0.00006		
mercury, aryl and inorganic compounds		0.0006		
mercury, vapor (7439-97-6)		0.0006		
methyl chloroform (71-55-6)		12		245
methylene chloride (75-09-2)	2.4×10^{-2}		1.7	
methyl ethyl ketone (78-93-3)		3.7		88.5
methyl isobutyl ketone (108-10-1)		2.56		30
methyl mercaptan (74-93-1)			0.05	
nickel carbonyl (13463-39-3)		0.0006		
nickel metal (7440-02-0)		0.006		
nickel, soluble compounds, as nickel		0.0006		
nickel subsulfide (12035-72-2)	2.1×10^{-6}			
nitric acid (7697-37-2)				1
nitrobenzene (98-95-3)		0.06	0.5	

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
n-nitrosodimethylamine (62-75-9)	5.0×10^{-5}			
non-specific chromium (VI) compounds, as chromium (VI) equivalent	8.3×10^{-8}			
pentachlorophenol (87-86-5)		0.003	0.025	
perchloroethylene (127-18-4)	1.9×10^{-1}			
phenol (108-95-2)			0.95	
phosgene (75-44-5)		0.0025		
phosphine (7803-51-2)				0.13
polychlorinated biphenyls (1336-36-3)	8.3×10^{-5}			
soluble chromate compounds, as chromium (VI) equivalent		6.2×10^{-4}		
styrene (100-42-5)			10.6	
sulfuric acid (7664-93-9)		0.012	0.1	
tetrachlorodibenzo-p-dioxin (1746-01-6)	3.0×10^{-9}			
1,1,1,2-tetrachloro-2,2,-difluoroethane (76-11-9)		52		
1,1,2,2-tetrachloro-1,2-difluoroethane (76-12-0)		52		
1,1,2,2-tetrachloroethane (79-34-5)	6.3×10^{-3}			
toluene (108-88-3)		4.7		56
toluene diisocyanate, 2,4- (584-84-9) and 2,6- (91-08-7) isomers		0.0002		
trichloroethylene (79-01-6)	5.9×10^{-2}			
trichlorofluoromethane (75-69-4)			560	
1,1,2-trichloro-1,2,2- trifluoroethane (76-13-1)				950
vinyl chloride (75-01-4)	3.8×10^{-4}			
vinylidene chloride (75-35-4)		0.12		
xylene (1330-20-7)		2.7		65

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. May 1, 1990;*
Amended Eff. September 1, 1992; March 1, 1992;
Temporary Amendment Eff. July 20, 1997;
Amended Eff. March 1, 2010; June 1, 2008; April 1, 2005; April 1, 2001; July 1, 1998.

15A NCAC 02D .1105 FACILITY REPORTING, RECORDKEEPING

The Director may require, according to Section .0600 of this Subchapter, the owner or operator of a source subject to this Section to monitor emissions of toxic air pollutants, to maintain records of these emissions, and to report these emissions. The owner or operator of any toxic air pollutant emission source subject to the requirements of this Section shall comply with the monitoring, recordkeeping, and reporting requirements in Section .0600 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(4),(5); 143B-282;*

Eff. May 1, 1990;
Amended Eff. April 1, 1999; October 1, 1991.

15A NCAC 02D .1106 DETERMINATION OF AMBIENT AIR CONCENTRATION

(a) Modeling shall not be used for enforcement. Modeling shall be used to determine process operational and air pollution control parameters and emission rates for toxic air pollutants to place in the air quality permit for that facility that will prevent any of the acceptable ambient levels in Rule .1104 of this Section from being exceeded, with such exceptions as may be allowed under 15A NCAC 2Q .0700. Enforcing these permit stipulations and conditions shall be the mechanism used to ensure that the requirements of Rule .1104 of this Section, with such exceptions as may be allowed by 15A NCAC 2Q .0700, are met.

(b) The owner or operator of the facility may request the Division to perform a modeling analysis of the facility or provide the analysis himself. If the owner or operator of the facility requests the Division to perform the modeling analysis, he shall provide emissions rates, stack parameters, and other information that the Division needs to do the modeling. The data that the owner or operator of the facility provides the Division to use in the model or in deriving the data used in the model shall be the process, operational and air pollution control equipment parameters and emission rates that will be contained in the facility=s permit. If the Division=s initial review of the modeling request indicates extensive or inappropriate use of state resources or if the Division=s modeling analysis fails to show compliance with the acceptable ambient levels in Rule .1104 of this Section, the modeling demonstration becomes the responsibility of the owner or operator of the facility.

(c) When the owner or operator of the facility is responsible for providing the modeling demonstration and the data used in the modeling, the owner or operator of the facility shall use in the model or in deriving data used in the model the process operational and air pollution control equipment parameters and emission rates that will be contained in his permit. Sources that are not required to be included in the model will not be included in the permit to emit toxic air pollutants.

(d) For the following pollutants, modeled emission rates shall be based on the highest emissions occurring in any single 15 minute period. The resultant modeled 1-hour concentrations shall then be compared to the applicable 1-hour acceptable ambient levels to determine compliance. These pollutants are:

(1) acetaldehyde (75-07-0)
(2) acetic acid (64-19-7)
(3) acrolein (107-02-8)
(4) ammonia (7664-41-7)
(5) bromine (7726-95-6)
(6) chlorine (7782-50-5)
(7) formaldehyde (50-00-0)
(8) hydrogen chloride (7647-01-0)
(9) hydrogen fluoride (7664-39-3)
(10) nitric acid (7697-37-2)

(e) The owner or operator of the facility and the Division may use any model allowed by 40 CFR 51.166(l) provided that the model is appropriate for the facility being modeled. The owner or operator or the Division may use a model other than one allowed by 40 CFR 51.166(l) provided that the Director determines that the model is equivalent to the model allowed by 40 CFR 51.166(l). Regardless of model used, the owner or operator and the Division shall model for cavity effects and shall comply with the modeling requirements for stack height set out in Rule .0533 of this Subchapter.

(f) Ambient air concentrations are to be evaluated for annual periods over a calendar year, for 24-hour periods from midnight to midnight, and for one-hour periods beginning on the hour.

(g) The owner or operator of the facility shall identify each toxic air pollutant emitted and its corresponding emission rate using mass balancing analysis, source testing, or other methods that the Director may approve as providing an equivalently accurate estimate of the emission rate.

(h) The owner or operator of the facility shall submit a modeling plan to the Director and shall have received approval of that plan from the before submitting a modeling demonstration to the Director. The modeling plan shall include:

(1) a diagram of the plant site, including locations of all stacks and associated buildings;
(2) on-site building dimensions;
(3) a diagram showing property boundaries, including a scale, key and north indicator;
(4) the location of the site on a United States Geological Survey (USGS) map;
(5) discussion of good engineering stack height and building wake effects for each stack;

(6) discussion of cavity calculations, impact on rolling and complex terrain, building wake effects, and urban/rural considerations;
(7) discussion of reasons for model selection;
(8) discussion of meteorological data to be used;
(9) discussion of sources emitting the pollutant that are not to be included in the model with an explanation of why they are being excluded (i.e. why the source will not affect the modeling analysis); and
(10) any other pertinent information.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. May 1, 1990;
Amended Eff. July 1, 1998.

15A NCAC 02D .1107 MULTIPLE FACILITIES

(a) If an acceptable ambient level in Rule .1104 of this Section is exceeded because of emissions of two or more facilities and if public exposure is such that the commission has evidence that human health may be adversely affected, then the Commission shall require the subject facilities to apply addition controls or to otherwise reduce emissions. The type of evidence that the Commission shall consider shall include one or more of the following:
(1) emission inventory,
(2) ambient monitoring,
(3) modeling, or
(4) epidemiological study.

(b) The allocation of the additional reductions shall be based on the relative contributions to the pollutant concentrations unless the owners or operators agree otherwise.

(c) The owner or operator of a facility shall not be required to conduct the multi-facility ambient impact analysis described in Paragraph (a) of this Rule. This type of analysis shall be done by the Division of Air Quality. In performing its analysis, the Division shall:
(1) develop a modeling plan that includes the elements set out in Paragraph (f) of Rule .1106 of this Section;
(2) use for the source modeling parameters, the modeling parameters used by the owner or operator of the source in his modeling demonstration, or if a modeling demonstration has not been done or if a needed parameter has not been used in the modeling demonstration, parameters contained in, or derived from data contained in, the source's permit;
(3) use a model allowed by Paragraph (c) of Rule .1106 of this Section;
(4) model for cavity effects and comply with the modeling requirements for stack height set out in Rule .0533 of this Section;
(5) use the time periods required by Paragraph (d) of Rule .1106 of this Section; and
(6) only consider impacts of a facility=s emissions beyond the premises of that facility.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282;*
Eff. May 1, 1990;
Amended Eff. July 1, 1998.

15A NCAC 02D .1108 MULTIPLE POLLUTANTS

If the Commission has evidence that two or more toxic air pollutants being emitted from a facility or combination of facilities act in the same way to affect human health so that their effects may be additive or enhanced and that public exposure is such that human health may be adversely affected, then the Commission will consider developing acceptable ambient levels for the combination of toxic air pollutants or other appropriate control measures.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282;*
Eff. May 1, 1990.

15A NCAC 02D .1109 112(J) CASE-BY-CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

(a) Applicability. This Rule applies only to sources of hazardous air pollutants required to have a permit under 15A NCAC 02Q .0500 and as described in 40 CFR 63.50. This Rule does not apply to research or laboratory activities as defined in Paragraph (b) of this Rule.

(b) Definitions. For the purposes of this Rule, the definitions in 40 CFR 63.2, 63.51, 15A NCAC 02Q .0526, and the following definitions apply:

(1) "Affected source" means the collection of equipment, activities, or both within a single contiguous area and under common control that is in a Section 112(c) source category or subcategory that the Administrator has failed to promulgate an emission standard by the Section 112(j) deadline, and that is addressed by an applicable MACT emission limitation established pursuant to 40 CFR Part 63 Subpart B;

(2) "Control technology" means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants including measures that:
- (A) reduce the quantity, or eliminate emissions, of such pollutants through process changes, substitution of materials, or other modifications;
- (B) enclose systems or processes to eliminate emissions;
- (C) collect, capture, or treat such pollutants when released from a process, stack, storage, or fugitive emission point;
- (D) are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 USC 7412(h); or
- (E) are a combination of Parts (A) through (D) of this definition.

(3) "EPA" means the United States Environmental Protection Agency or the Administrator of U.S. Environmental Protection Agency.

(4) "Hazardous air pollutant" means any pollutant listed under Section 112(b) of the federal Clean Air Act.

(5) "MACT" means maximum achievable control technology.

(6) "Maximum achievable control technology" means:
- (A) for existing sources,
  - (i) a MACT standard that EPA has proposed or promulgated for a particular category of facility or source,
  - (ii) the average emission limitation achieved by the best performing 12 percent of the existing facilities or sources for which EPA has emissions information if the particular category of source contains 30 or more sources, or
  - (iii) the average emission limitation achieved by the best performing five facilities or sources for which EPA has emissions information if the particular category of source contains fewer than 30 sources, or
- (B) for new sources, the maximum degree of reduction in emissions that is deemed achievable but not less stringent than the emission control that is achieved in practice by the best controlled similar source.

(7) "MACT floor" means:
- (A) for existing sources:
  - (i) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which EPA has emissions information) excluding those sources that have, within 18 months before the emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, or would comply if the source is not subject to such standard, with the lowest achievable emission rate (as defined in Section 171 of the federal Clean Air Act) applicable to the source category or subcategory for categories and subcategories with 30 or more sources; or
  - (ii) the average emission limitation achieved by the best performing five sources (for which EPA has emissions or could reasonably obtain emissions information) , in the category or subcategory, for categories or subcategories with fewer than 30 sources;
- (B) for new sources, the emission limitation achieved in practice by the best controlled similar source.

(8) "New affected source" means the collection of equipment, activities, or both, that constructed after the issuance of a Section 112(j) permit for the source pursuant to 40 CFR 63.52, is subject to the applicable MACT emission limitation for new sources. Each permit shall define the term "new affected source," that will be the same as the "affected source" unless a different collection is warranted based on consideration of factors including:

(A) Emission reduction impacts of controlling individual sources versus groups of sources;
(B) Cost effectiveness of controlling individual equipment;
(C) Flexibility to accommodate common control strategies;
(D) Cost/benefits of emissions averaging;
(E) Incentives for pollution prevention;
(F) Feasibility and cost of controlling processes that share common equipment (e.g., product recovery devices); and
(G) Feasibility and cost of monitoring,.

(9) "New facility" means a facility for which construction is commenced after the Section 112(j) deadline, or after proposal of a relevant standard under Section 112(d) or (h) of the Federal Clean Air Act, whichever comes first.

(10) "Research or laboratory activities" means activities whose primary purpose is to conduct research and development into new processes and products; where such activities are operated under the supervision of technically trained personnel and are not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner; and where the source is not in a source category specifically addressing research or laboratory activities, that is listed pursuant to Section 112(c)(7) of the Clean Air Act.

(11) "Section 112(j) deadline" means the date 18 months after the date for which a relevant standard is scheduled to be promulgated under 40 CFR Part 63, except that for all major sources listed in the source category schedule for which a relevant standard is scheduled to be promulgated by November 15, 1994, the Section 112(j) deadline is November 15, 1996, and for all major sources listed in the source category schedule for which a relevant standard is scheduled to be promulgated by November 15, 1997, the Section 112(j) deadline is December 15, 1999.

(12) "Similar source" means that equipment or collection of equipment that, by virtue of its structure, operability, type of emissions and volume and concentration of emissions, is substantially equivalent to the new affected source and employs control technology for control of emissions of hazardous air pollutants that is practical for use on the new affected source.

(c) Missed promulgation dates: 112(j). If EPA fails to promulgate a standard for a category of source under Section 112 of the Federal Clean Air Act by the date established pursuant to Sections 112(e)(1) or (3) of the federal Clean Air Act, the owner or operator of any source in such category shall submit, within 18 months after such date, a permit application, in accordance with the procedures in 15A NCAC 02Q .0526, to the Director and to EPA to apply MACT to such sources. Sources subject to this Paragraph shall be in compliance with this Rule within three years from the date that the permit is issued.

(d) New facilities. The owner or operator of any new facility that is a major source of hazardous air pollutants (HAP) that is subject to this Rule shall apply MACT in accordance with the provisions of Rule .1112 of this Section, 15A NCAC 02Q .0528, and 02Q .0526(e)(2).

(e) Case-by-case MACT determination. The Director shall determine MACT according to 40 CFR 63.55(a).

(f) Monitoring and recordkeeping. The owner or operator of a source subject to this Rule shall install, operate, and maintain monitoring capable of detecting deviations from each applicable emission limitation or other standards with sufficient reliability and timeliness to determine continuous compliance over the applicable reporting period. Such monitoring data may be used as a basis for enforcing emissions limitations established under this Rule.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5), (10);*
Temporary Adoption Eff. March 8, 1994 for a period of 180 days or until the permanent rule is effective, whichever is sooner;
Eff. July 1, 1994;
Amended Eff. February 1, 2004; July 1, 1998; July 1, 1996.

15A NCAC 02D .1110 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

(a) With the exception of Paragraph (b) of this Rule, sources subject to national emission standards for hazardous air pollutants promulgated in 40 CFR Part 61 shall comply with emission standards, monitoring and reporting requirements, maintenance requirements, notification and record keeping requirements, performance test requirements, test method and procedural provisions, and any other provisions, as required therein, rather than with any otherwise-applicable Rule in Section .0500 of this Subchapter that would be in conflict therewith.

(b) Along with the notice appearing in the North Carolina Register for a public hearing to amend this Rule to exclude a standard from this Rule, the Director shall state whether or not the national emission standards for hazardous air pollutants promulgated under 40 CFR Part 61, or part thereof, shall be enforced. If the Commission does not adopt the amendment to this Rule to exclude or amend the standard within 12 months after the close of the comment period on the proposed amendment, the Director shall begin enforcing that standard when 12 months has elapsed after the end of the comment period on the proposed amendment.

(c) New sources of volatile organic compounds that are located in an area designated in 40 CFR 81.334 as nonattainment for ozone or an area identified in accordance with 15A NCAC 02D .0902 as in violation of the ambient air quality standard for ozone shall comply with the requirements of 40 CFR Part 61 that are not excluded by this Rule, as well as with any applicable requirements in Section .0900 of this Subchapter.

(d) All requests, reports, applications, submittals, and other communications to the administrator required under Paragraph (a) of this Rule shall be submitted to the Director of the Division of Air Quality rather than to the Environmental Protection Agency; except that all such reports, applications, submittals, and other communications to the administrator required by 40 CFR 61.145 shall be submitted to the Director, Division of Epidemiology.

(e) In the application of this Rule, definitions contained in 40 CFR Part 61 shall apply rather than those of Section .0100 of this Subchapter.

(f) 15A NCAC 02Q .0102 and .0302 are not applicable to any source to which this Rule applies. The owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or :0500.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107 (a)(5); 150B-21.6;*
Eff. July 1, 1996;
Amended Eff. June 1, 2008; July 1, 1997.

15A NCAC 02D .1111 MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

(a) With the exception of Paragraph (b) or (c) of this Rule, sources subject to national emission standards for hazardous air pollutants for source categories promulgated in 40 CFR Part 63 shall comply with emission standards, monitoring and reporting requirements, maintenance requirements, notification and record keeping requirements, performance test requirements, test method and procedural provisions, and any other provisions, as required therein, rather than with any otherwise-applicable rule in Section .0500 of this Subchapter which would be in conflict therewith.

(b) The following are not included under this Rule:

(1) approval of state programs and delegation of federal authorities (40 CFR 63.90 to 63.96, Subpart E); and

(2) requirements for control technology determined for major sources in accordance with Clean Air Act Sections 112(g) and 112(j) (40 CFR 63.50 to 63.57, Subpart B).

(c) Along with the notice appearing in the North Carolina Register for a public hearing to amend this Rule to exclude a standard from this Rule, the Director shall state whether or not the national emission standard for hazardous air pollutants for source categories promulgated under 40 CFR Part 63, or part thereof, shall be enforced. If the Commission does not adopt the amendment to this Rule to exclude or amend the standard within 12 months after the close of the comment period on the proposed amendment, the Director shall begin enforcing that standard when 12 months has elapsed after the end of the comment period on the proposed amendment.

(d) New sources of volatile organic compounds that are located in an area designated in 40 CFR 81.334 as nonattainment for ozone or an area identified in accordance with 15A NCAC 02D .0902 as being in violation of the ambient air quality standard for ozone shall comply with the requirements of 40 CFR Part 63 that are not excluded by this Rule as well as with any applicable requirements in Section .0900 of this Subchapter.

(e) All requests, reports, applications, submittals, and other communications to the administrator required under Paragraph (a) of this Rule shall be submitted to the Director of the Division of Air Quality rather than to the Environmental Protection Agency; except that all such reports, applications, submittals, and other communications to the

administrator required by 40 CFR Part 63, Subpart M for dry cleaners covered under Chapter 143, Article 21A, Part 6 of the General Statutes shall be submitted to the Director of the Division of Waste Management.
(f) In the application of this Rule, definitions contained in 40 CFR Part 63 shall apply rather than those of Section .0100 of this Subchapter when conflict exists.
(g) 15A NCAC 02Q .0102 and .0302 are not applicable to any source to which this Rule applies if the source is required to be permitted under 15A NCAC 02Q .0500, Title V Procedures. The owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or .0500. Sources that have heretofore been exempted from needing a permit and become subject to requirements promulgated under 40 CFR 63 shall apply for a permit in accordance to 15A NCAC 02Q .0109.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5); 150B-21.6;*
Eff. July 1, 1996;
Amended Eff. January 1, 2007; April 1, 1997.

15A NCAC 02D .1112 112(G) CASE BY CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY
(a) Applicability. This Rule applies to the construction or reconstruction of major sources of hazardous air pollutants unless:
- (1) the major source has been specifically regulated or exempted from regulation under:
  - (A) Rule .1109 or .1111 of this Section; or
  - (B) a standard issued pursuant to Section 112(d), 112(h), or 112(j) of the federal Clean Air Act and incorporated in another Subpart of 40 CFR Part 63; or
- (2) the owner or operator of such major source has received all necessary air quality permits for such construction or reconstruction project before July 1, 1998.

(b) Exclusions. The requirements of this Rule shall not apply to:
- (1) electric utility steam generating units unless and until such time as these units are added to the source category list pursuant to Section 112(c)(5) of the federal Clean Air Act.
- (2) stationary sources that are within a source category that has been deleted from the source category list pursuant to Section 112(c)(9) of the federal Clean Air Act.
- (3) research and development activities.

(c) Definitions. For the purposes of this Rule, the following definitions apply:
- (1) "Affected source" means the stationary source or group of stationary sources that, when fabricated (on site), erected, or installed meets the definition of "construct a major source" or the definition of "reconstruct a major source" contained in this Paragraph.
- (2) "Affected States" means all States or local air pollution agencies whose areas of jurisdiction are:
  - (A) contiguous to North Carolina and located less than D=Q/12.5 from the facility, where:
    - (i) Q = emissions of the pollutant emitted at the highest permitted rate in tons per year, and
    - (ii) D = distance from the facility to the contiguous state or local air pollution control agency in miles; or
  - (B) within 50 miles of the permitted facility.
- (3) "Available information" means, for purposes of identifying control technology options for the affected source, information contained in the following information sources as of the date of approval of the MACT determination by the Division:
  - (A) a relevant proposed regulation, including all supporting information;
  - (B) background information documents for a draft or proposed regulation;
  - (C) data and information available from the Control Technology Center developed pursuant to Section 113 of the federal Clean Air Act;
  - (D) data and information contained in the Aerometric Informational Retrieval System including information in the MACT data base;
  - (E) any additional information that can be expeditiously provided by the Division and EPA; and
  - (F) for the purpose of determinations by the Division, any additional information provided by the applicant or others, and any additional information considered available by the Division.
- (4) "Construct a major source" means:

(A) To fabricate, erect, or install at any greenfield site a stationary source or group of stationary sources which is located within a contiguous area and under common control and which emits or has the potential to emit 10 tons per year of any HAP's or 25 tons per year of any combination of HAP, or

(B) To fabricate, erect, or install at any developed site a new process or production unit which in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, unless the process or production unit satisfies Subparts (i) through (vi) of this Paragraph:

(i) All HAP emitted by the process or production unit that would otherwise be controlled under the requirements of this Rule will be controlled by emission control equipment which was previously installed at the same site as the process or production unit;

(ii) The Division:

(I) has determined within a period of five years prior to the fabrication, erection, or installation of the process or production unit that the existing emission control equipment represented best available control technology (BACT) under Rule .0530 of this Subchapter or lowest achievable emission rate (LAER) under Rule .0531 of this Subchapter for the category of pollutants which includes those HAP's to be emitted by the process or production unit; or

(II) determines that the control of HAP emissions provided by the existing equipment will be equivalent to that level of control currently achieved by other well-controlled similar sources (i.e., equivalent to the level of control that would be provided by a current BACT, LAER, or MACT determination under Rule .1109 of this Section);

(iii) The Division determines that the percent control efficiency for emissions of HAP from all sources to be controlled by the existing control equipment will be equivalent to the percent control efficiency provided by the control equipment prior to the inclusion of the new process or production unit;

(iv) The Division has provided notice and an opportunity for public comment concerning its determination that criteria in Subparts (i), (ii), and (iii) of this Subparagraph apply and concerning the continued adequacy of any prior LAER, BACT, or MACT determination under Rule .1109 of this Section;

(v) If any commenter has asserted that a prior LAER, BACT, or MACT determination under Rule .1109 of this Section determination is no longer adequate, the Division has determined that the level of control required by that prior determination remains adequate; and

(vi) Any emission limitations, work practice requirements, or other terms and conditions upon which the above determinations by the Division are predicated will be construed by the Division as applicable requirements under Section 504(a) of the federal Clean Air Act and either have been incorporated into an existing permit issued under 15A NCAC 2Q .0500 for the affected facility or will be incorporated into such permit upon issuance.

(5) "Control technology" means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants including measures that:

(A) reduce the quantity of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modifications;

(B) enclose systems or processes to eliminate emissions;

(C) collect, capture or treat such pollutants when released from a process, stack, storage or fugitive emissions point;

(D) are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 U.S.C. 7412(h); or

(E) are a combination of Parts (A) through (D) of this definition.

(6) "Electric utility steam generating unit" means any fossil fuel fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A unit that co-generates steam and

electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electric output to any utility power distribution system for sale shall be considered an electric utility steam generating unit.

(7) "Greenfield site" means a contiguous area under common control that is an undeveloped site.

(8) "HAP" means hazardous air pollutants.

(9) "Hazardous air pollutant" means any pollutant listed under Section 112(b) of the federal Clean Air Act.

(10) "List of source categories" means the source category list required by Section 112(c) of the federal Clean Air Act.

(11) "MACT" means maximum achievable control technology.

(12) "Maximum achievable control technology emission limitation for new sources" means the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of reduction in emissions that the permitting authority, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by the constructed or reconstructed major source.

(13) "Process or production unit" means any collection of structures or equipment, that processes, assembles, applies, or otherwise uses material inputs to produce or store an intermediate or final product. A single facility may contain more than one process or production unit.

(14) "Reconstruct a major source" means the replacement of components at an existing process or production unit that in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, whenever:

(A) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit; and

(B) It is technically and economically feasible for the reconstructed major source to meet the applicable maximum achievable control technology emission limitation for new sources established under this Subpart.

(15) "Research and development activities" means activities conducted at a research or laboratory facility whose primary purpose is to conduct research and development into new processes and products, where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for sale or exchange for commercial profit, except in a de minimis manner.

(16) "Similar source" means a stationary source or process that has comparable emissions and is structurally similar in design and capacity to a constructed or reconstructed major source such that the source could be controlled using the same control technology.

(d) Principles of MACT determinations. The following general principles shall be used to make a case-by-case MACT determination concerning construction or reconstruction of a major source under this Rule:

(1) The MACT emission limitation or MACT requirements recommended by the applicant and approved by the Division shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Division.

(2) Based upon available information, the MACT emission limitation and control technology (including any requirements under Subparagraph (3) of this Paragraph) recommended by the applicant and approved by the Division shall achieve the maximum degree of reduction in emissions of HAP that can be achieved by utilizing those control technologies that can be identified from the available information, taking into consideration the costs of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements associated with the emission reduction.

(3) The owner or operator may recommend a specific design, equipment, work practice, or operational standard, or a combination thereof, and the Director may approve such a standard if the Division specifically determines that it is not feasible to prescribe or enforce an emission limitation under the criteria set forth in Section 112(h)(2) of the federal Clean Air Act.

(4) If the EPA has either proposed a relevant emission standard pursuant to Section 112(d) or 112(h) of the federal Clean Air Act or adopted a presumptive MACT determination for the source category that includes the constructed or reconstructed major source, then the MACT requirements applied to the constructed or reconstructed major source shall have considered those MACT emission limitations and requirements of the proposed standard or presumptive MACT determination.

(e) Effective date of MACT determination. The effective date of a MACT determination shall be the date of issuance of a permit under procedures of 15A NCAC 2Q .0300 or .0500 incorporating a MACT determination.
(f) Compliance date. On and after the date of start-up, a constructed or reconstructed major source that is subject to the requirements of this Rule shall be in compliance with all applicable requirements specified in the MACT determination.
(g) Compliance with MACT determinations. The owner or operator of a constructed or reconstructed major source that:

(1) is subject to a MACT determination shall comply with all requirements set forth in the permit issued under 15A NCAC 2Q .0300 or .0500, including any MACT emission limitation or MACT work practice standard, and any notification, operation and maintenance, performance testing, monitoring, reporting, and recordkeeping requirements; or

(2) has obtained a MACT determination shall be deemed to be in compliance with Section 112(g)(2)(B) of the federal Clean Air Act only to the extent that the constructed or reconstructed major source is in compliance with all requirements set forth in the permit issued under 15A NCAC 2Q .0300 or .0500. Any violation of such requirements by the owner of operator shall be deemed by the Division and by EPA to be a violation of the prohibition on construction or reconstruction in Section 112(g)(2)(B) of the federal Clean Air Act for whatever period the owner or operator is determined to be in violation of such requirements, and shall subject the owner or operator to appropriate enforcement action under the General Statutes and the federal Clean Air Act.

(h) Requirements for constructed or reconstructed major sources subject to a subsequently promulgated MACT standard or MACT requirement. If EPA promulgates an emission standard under Section 112(d) or 112(h) of the federal Clean Air Act or the Division issues a determination under Rule .1109 of this Section that is applicable to a stationary source or group of sources that would be deemed to be a constructed or reconstructed major source under this Rule:

(1) before the date that the owner or operator has obtained a final and legally effective MACT determination under 15A NCAC 2Q .0300 or .0500, the owner or operator of the source(s) shall comply with the promulgated standard or determination rather than any MACT determination under this Rule by the compliance date in the promulgated standard; or

(2) after the source has been subject to a prior case-by-case MACT under this Rule, and the owner or operator obtained a final and legally effective case-by-case MACT determination prior to the promulgation date of such emission standard, the Division shall (if the initial permit has not yet been issued under 15A NCAC 2Q .0500) issue an initial permit that incorporates the emission standard or determination, or shall (if the initial permit has been issued under 15A NCAC 2Q .0500) revise the permit according to the reopening procedures in 15A NCAC 2Q .0517, Reopening for Cause, whichever is relevant, to incorporate the emission standard or determination.

(i) Compliance with subsequent 112(d), 112(h),or 112(j) standards. EPA may include in the emission standard established under Section 112(d) or 112(h) of the federal Clean Air Act a specific compliance date for those sources that have obtained a final and legally effective MACT determination under this Rule and that have submitted the information required by 40 CFR 63.43 to EPA before the close of the public comment period for the standard established under section 112(d) of the federal Clean Air Act. Such date shall assure that the owner or operator shall comply with the promulgated standard as expeditiously as practicable, but not longer than eight years after such standard is promulgated. In that event, the Division shall incorporate the applicable compliance date in the permit issued under 15A NCAC 2Q .0500. If no compliance date has been established in the promulgated 112(d) or 112(h) standard or determination under Rule .1109 of this Section, for those sources that have obtained a final and legally effective MACT determination under this Rule, then the Director shall establish a compliance date in the permit that assures that the owner or operator shall comply with the promulgated standard or determination as expeditiously as practicable, but not longer than eight years after such standard is promulgated or a determination is made under Rule .1109 of this Section.
(j) Revision of permit to incorporate less stringent control. Notwithstanding the requirements of Paragraph (h) of this Rule, if the Administrator of EPA promulgates an emission standard under Section 112(d) or Section 112(h) of the federal Clean Air Act or the Division issues a determination under Rule .1109 of this Section that is applicable to a stationary source or group of sources that was deemed to be a constructed or reconstructed major source under this Rule and that is the subject of a prior case-by-case MACT determination pursuant to 40 CFR 63.43, and the level of control required by the emission standard issued under Section 112(d) or 112(h) or the determination issued under Rule .1109 of this Section is less stringent than the level of control required by any emission limitation or standard in the prior MACT determination, the Division is not required to incorporate any less stringent terms of the promulgated standard in the permit issued under 15A NCAC 2Q .0500 applicable to such source(s) and may consider any more stringent provisions of the prior MACT determination to be applicable legal requirements when issuing or revising such an operating permit.

Study of the Neuse Buffer Rules (15A NCAC 02B .0233) and the Tar-Pamlico Buffer Rules (15A NCAC 02B .0259)

Pursuant to Session Law 2011-394(17)(e)

What DENR was to Study

- Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and

- Exempting all single family residence lots platted prior to August 1, 2000.



Photo courtesy of NCDENR



Photo courtesy of NCDENR

N.C. General Assembly took action

June 19, 1996

- SL 1995-572
  - Directed the Environmental Management Commission (EMC) to develop a plan to reduce the average annual load of nitrogen to the Neuse River Estuary by 30%

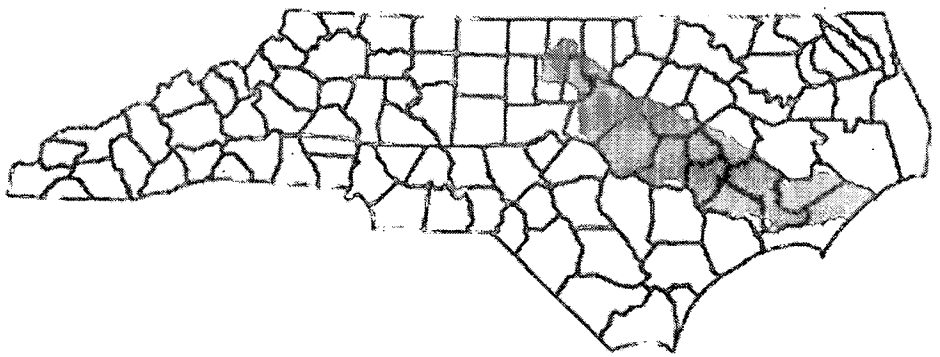




Photos courtesy of NCDENR and UNC-Chapel Hill

Neuse Management Strategy

- The EMC adopted the Neuse River Basin – Nutrient Sensitive Waters Management Strategy for:
  - protection and maintenance of riparian areas
  - wastewater discharges
  - urban stormwater management
  - agricultural nitrogen reduction
  - fertilizer management
  - nitrogen offset fees

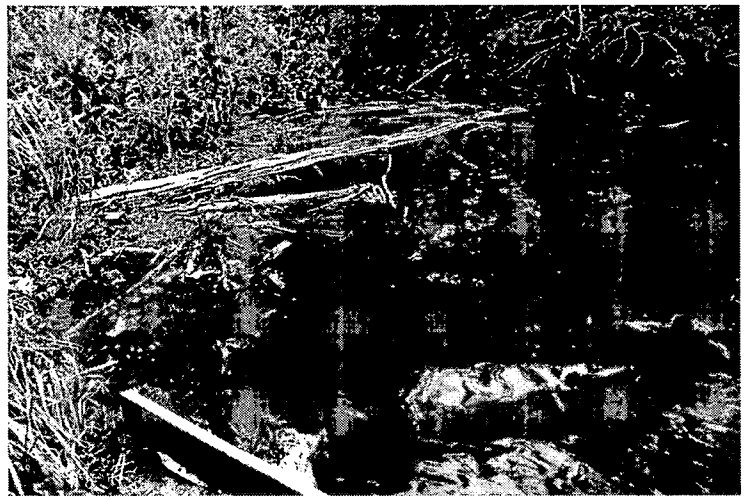


Shifting Burden

- Removing the existing riparian buffer requirements would shift the burden of nutrient reductions to other sources:
  - Agriculture
  - Wastewater treatment plants
  - Stormwater management

Importance of the buffers

- Nutrient, Sediment and Pollutant Removal
- Removal of Pesticides, Heavy Metals, Bacteria and Viruses
- Flood Control
- Streambank Stabilization
- Maintaining Waterfront Property Value
- Lowest Cost Alternative





Photos courtesy of DENR and WakeUp Wake County

How DENR Implemented the Study

- Memo was posted on the Division of Water Quality website and sent to the DWQ 401 and Planning listservs
  - Posted for 30 days
  - Solicited comments from the development community, agricultural community, the forestry industry, environmental groups, local governments, property owners and other interested parties
- Received 37 Letters
  - 27 supported the current buffer rules
  - 10 recommended changes to the current buffer rules

DENR Conclusions

- Scientific literature indicates that a 50-foot buffer provides for effective nutrient removal from existing landscapes to protect the water quality in the Neuse and Tar-Pamlico River Basins.







Photos courtesy of NC DWQ and NC State Parks

DENR Recommendations

- DENR does not recommend removing the existing riparian buffer requirements because of the significant nutrient removal buffers perform and it would place an increased burden for nutrient reductions on wastewater treatment plants, agriculture, and development.

- DENR does recommend expanding the flexibility provided to coastal counties outlined in Session Law 2011-394 to all single family residential lots throughout the Neuse and Tar-Pamlico River Basins.

Questions?

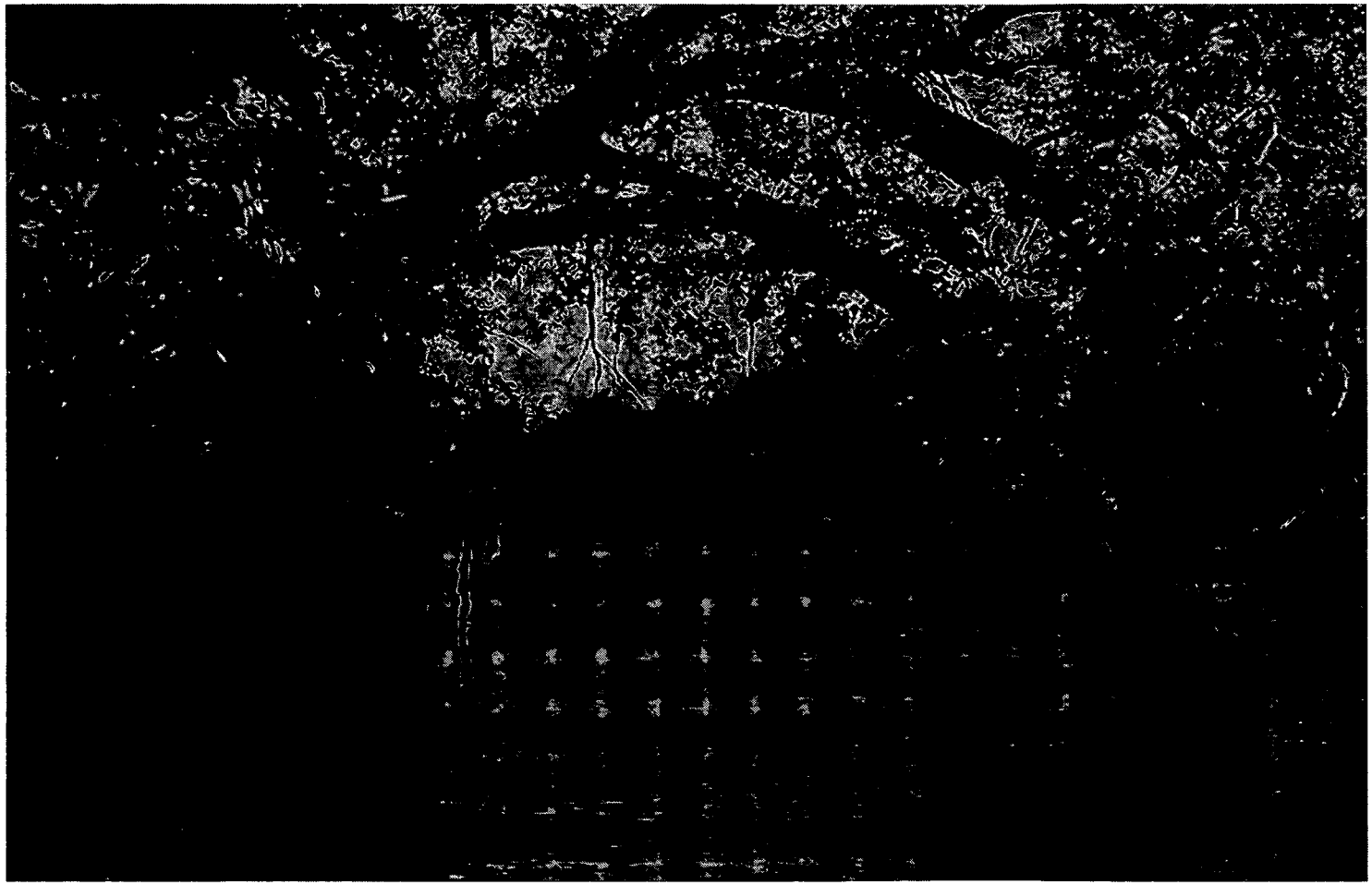


Photo courtesy of NC State Parks

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

To: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FROM: Kari Barsness KKB
Director of Legislative and Intergovernmental Affairs

SUBJECT: Implementation and Application of the Neuse and Tar-Pamlico Riparian Buffer Rules Report

DATE: February 1, 2012

Pursuant to Section 17.(e) of Session Law 2011-394, the department shall study the implementation and application of the Neuse and Tar-Pamlico Riparian Buffer Rules and report to the Environmental Review Commission by February 1, 2012. Please consider the attached report to satisfy this reporting requirement.

If you have any questions or need additional information, please contact me by phone at (919) 707-8618 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Robin W. Smith, Assistant Secretary for Environment
David Knight, Assistant Secretary for Natural Resources
Kristin Walker, Fiscal Research Division
Lanier McRee, Fiscal Research Division
Claire Hester, Fiscal Research Division
Mariah Matheson, Research Division

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EXECUTIVE SUMMARY

Session Law 2011-394 (17)(e), required the Department of Environment and Natural Resources (DENR) to study the application and implementation of the Neuse River Basin Riparian Buffer Rules (15A NCAC 02B .0233) and Tar-Pamlico River Basin Riparian Buffer Rules (15A NCAC 02B .0259). Specifically, DENR considered:

(i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and

(ii) Exempting all single family residence lots (lots of two acres in size or less) platted prior to August 1, 2000.

DENR solicited comments from the development community, the agricultural community, the forestry industry, the environmental community, local governments, property owners and other interested parties through a memo posted on the Division of Water Quality(DWQ) public notice website and the DWQ 401 and Planning listservs. This memo had a 30-day public comment period.

By the end of the comment period, 37 letters were received. 10 of the letters recommended changes to the current buffer rules.

The common themes brought up in the 10 letters recommending changes to the buffer rules included exempting all single family residential lots platted prior to August 1, 2000, including wetlands and other coastal vegetation towards part of the 50-foot protected riparian buffer measurement, and combining the buffer rules made into one comprehensive rule. The 27 letters of support however did not wish to see them revised or weakened.

Scientific literature indicates that a 50-foot buffer, as required by the current Neuse and Tar-Pamlico buffer rules, is necessary for effective nutrient removal from existing landscapes to protect the water quality in the Neuse and Tar-Pamlico River Basins. Removing the existing riparian buffer requirements would place an increased burden for nutrient reductions on other sources, such as wastewater treatment plants, industrial dischargers, local government stormwater systems and agriculture. Getting additional reductions from those sources is typically more costly than maintaining existing riparian buffers.

Under Session Law 2011-394(17), a grandfather provision allows some encroachment into the buffer if that is necessary to construct a residence on a single-family residential lot (two acres in size or less) platted lots prior to Aug. 1, 2000 in the coastal area. The provision allows additional flexibility in siting structures on these small, previously platted lots without having to go through a variance process for impacts in Zone 2 of the protected riparian buffer.

DENR recommends expanding the grandfather provision outlined in Session Law 2011-394 to all single family residential lots (lots of two acres in size or less) throughout the Neuse and Tar-Pamlico River Basins. As provided under S.L. 2011-394, where application of the riparian buffer requirements would preclude construction of a single-family residence and necessary

infrastructure, such as an on-site wastewater system, this would allow a single-family residence to encroach on the buffer if all of the following conditions are met:

(1) The residence is set back the maximum feasible distance from the top of bank, rooted herbaceous vegetation, normal high-water level or normal water level, whichever is applicable, on the existing lot and designed to minimize encroachment into the riparian buffer.

(2) The residence is set back a minimum of 30 feet landward of the top of bank, rooted herbaceous vegetation, normal high-water level or normal water level, whichever is applicable.

(3) Stormwater generated by new impervious surface within the riparian buffer is treated and diffuse flow of stormwater is maintained through the buffer.

(4) If the residence will be served by an on-site wastewater system, no part of the septic tank or drainfield may encroach into the riparian buffer.

STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Study of the Neuse Buffer Rules (15A NCAC 02B .0233) and the Tar-Pamlico Buffer Rules (15A NCAC 02B .0259) Pursuant to SL 2011-394

Feb. 1, 2012

INTRODUCTION

Pursuant to Session Law 2011-394 (17)(e), the Department of Environment and Natural Resources (DENR) conducted a study of the application and implementation of the Neuse River Basin Riparian Buffer Rules (15A NCAC 02B .0233) and Tar-Pamlico River Basin Riparian Buffer Rules (15A NCAC 02B .0259). Specifically, DENR considered:

(i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and

(ii) Exempting all single family residence lots (lots of two acres in size or less) platted prior to Aug. 1, 2000.

DENR solicited comments from the development community, the agricultural community, the forestry industry, the environmental community, local governments, property owners and other interested parties through a memo posted on the Division of Water Quality(DWQ) public notice website and the DWQ 401 and Planning listservs. This memo had a 30-day public comment period.

HISTORY

Neuse

During the summer of 1995, algal blooms and massive fish kills in the Neuse River and the Neuse River estuary led the N.C. General Assembly to pass Session Law 1995-572. The session law directed the Environmental Management Commission (EMC) to develop a plan to reduce the average annual load of nitrogen to the Neuse River estuary by 30 percent from 1991-1995 levels. After an extensive stakeholder process, the EMC adopted the Neuse River Basin - Nutrient Sensitive Waters Management Strategy. To reach the necessary 30% reduction in nutrient loading, the strategy included both stricter limits on nitrogen and phosphorus in wastewater discharges (from wastewater treatment plants and other facilities) and measures to reduce nitrogen loading from non-point sources of nutrients. The non-point sources included runoff from developed areas that carried nitrogen and phosphorus from fertilizer, failing septic systems and other sources into the Neuse River tributaries. The Neuse River Basin Riparian Buffer Rules were developed to reduce the amount of nitrogen and phosphorus carried by runoff from developed areas to the Neuse River system.

Temporary buffer rules were adopted by the EMC on June 11, 1997. Session Law 1998-221 directed the EMC to revise the buffer rules such that they protected and enhanced water quality, but did not impose an undue burden on the regulated public. A stakeholder advisory committee, consisting of 23 organizations that included developers, the agricultural community, local governments, the mining industry, the forestry industry and environmental parties, was formed to revise the rule. Permanent buffer rules were adopted by the EMC and became effective Aug.1, 2000.

Tar-Pamlico

In the late 1980s, the Pamlico estuary experienced increased algal blooms and fish kills that were linked to excessive nutrient levels in the river. The entire Tar-Pamlico River Basin was designated as Nutrient Sensitive Waters (NSW) by the EMC in 1989, which required the state to develop a nutrient management strategy for the basin. This management strategy involved a two-phase approach. The first phase produced an innovative point source/nonpoint source "trading" program that allowed point sources, such as wastewater treatment plants and industry, to achieve reductions in nutrient loading in a more cost-effective way by allowing the trading of nutrient reduction credits between dischargers. The second phase established two goals: a 30 percent reduction in nitrogen loading from 1991 levels and holding phosphorus loading to 1991 levels.

In addition to point sources, the second phase called on nonpoint sources to contribute to the reduction goals, and established a set of nonpoint source rules addressing agriculture, urban stormwater, fertilizer management across all land uses, and riparian buffer protection. After an extensive stakeholder process, the EMC adopted the Tar-Pamlico River Basin: Nutrient Sensitive Waters Management Strategy, which included the Tar-Pamlico River Basin Riparian Buffer Rules. The Tar-Pamlico Buffer Rules went into effect on Jan. 1, 2000, and were revised effective Aug. 1, 2000.

State law directs the EMC to determine the relative contribution of nutrients from different types of sources contributing to excess nutrient loading (wastewater discharges, development activity, agricultural operations, etc.) and develop a nutrient management strategy based on the proportional contribution from each category. DWQ uses water quality monitoring and modeling to determine the allocation of nutrient loading between the different source categories. That information becomes the basis for a nutrient management strategy that -- as directed by the General Assembly -- ensures that all sources jointly share the responsibility of reducing the pollutants in the State's waters in a fair, reasonable and proportionate manner. N.C. General Statute 143-215.8B. The riparian buffer rules are one of the most important tools for addressing nutrient loading from development activity.

IMPORTANCE OF THE RIPARIAN BUFFER

A riparian buffer is a strip of forested or vegetated land bordering a body of water. The riparian buffer performs many natural functions including: filtering sediment, nutrients and other contaminants; reducing the effect of drought on stream flow; supporting aquatic habitat by providing woody debris to the stream, controlling temperature and controlling light; and providing habitat for wildlife (Wenger 1999 and Schueler 1995). Riparian buffers also provide many financial benefits to both the property owner and the community, including: minimizing flood damage; decreasing the need for public investment in stormwater management, flood control and pollution removal; increased property values; and reduced land maintenance costs (compared to formal lawns and other landscaped areas) (Schueler 1995).

Nutrient, Sediment and Pollutant Removal

The Neuse and Tar-Pamlico buffer requirements exist to take advantage of the riparian buffer's ability to reduce the amount of nutrients entering surface waters from developed areas. Riparian buffers slow the flow of stormwater runoff, greatly reducing the amount of sediment entering water bodies. They also maximize filtering of stormwater runoff through the soil, causing excess nutrients to be taken up by plant roots and to bind to soil particles.

Studies show that the first 50 feet adjacent to a body of water provides the highest proportion of water quality functions. They have demonstrated that riparian buffers remove 60-97 percent of sediment, 4-80 percent of nitrogen, and 28-77 percent of phosphorus (Peterjohn and Correll 1984, USEPA 1995 and Lowrance et al. 1995). Dillaha et al. (1988) found that even a fairly narrow buffer of 15 feet removed 76-87 percent of sediment while wider buffers of 30 feet were more effective and removed from 88-95 percent of sediment. Mayer et al. (2007) examined the results of 89 buffers from 45 published studies and concluded that riparian buffers were very effective in removing nitrogen from water flowing through the riparian zone. Specifically, they found that a 50-foot wide riparian buffer removed about 70 percent of the total nitrogen entering the buffer through stormwater. Wenger (1999) reviewed four published studies and found that a 30-foot wide riparian buffer removed 46-79 percent of the total phosphorus.

The Neuse and Tar Pamlico buffer rules were based on science that examined the relationship between buffer width and nutrient removal.

Other Buffer Benefits

Although the Neuse and Tar-Pamlico buffer rules were adopted to reduce excess nutrient loading, riparian buffers have other benefits including:

Removal of Pesticides, Heavy Metals, Bacteria and Viruses

Buffers can also be an effective tool at minimizing pesticides and heavy metals in our waterways. Neary et al. (1993) reviewed several studies in the Southeast and found that high concentrations of pesticides in water only occurred when there was no protected riparian buffer or pesticides were applied within the buffer. A 1992 study by the Metropolitan Seattle Water Pollution Control Department found that riparian buffers were effective at removing/retaining hydrocarbons and metals from stormwater runoff (Herson-Jones et al. 1995).

Buffers have also been shown to be effective at removing pathogens such as bacteria and viruses from stormwater runoff. Trask et al. (2004) reported that buffers were very effective in removing *Cryptosporidium parvum* from simulated runoff. Similarly, Collins et al. (2004) found that fecal bacteria (*E. coli* and *Campylobacter sp.*) were removed by buffer strips and concluded that buffers of at least 15 feet were needed to markedly reduce the levels of fecal bacteria. Finally, Stout et al. (2005) examined runoff transport of fecal bacteria from manure and concluded that buffers are effective at removing these pollutants.

Flood Control

Riparian buffers slow stormwater runoff, allowing water to infiltrate the soil and recharge the groundwater supply. This helps control flooding and maintain stream flow during

dryer times of the year (Connecticut River Joint Commissions 1998). It also replenishes the water supply during periods of lower rainfall (Virginia Department of Forestry 2011).

Streambank Stabilization

Wooded buffers have significant effect on stabilizing stream banks and preventing erosion which can impact downstream waters. A study of more than 700 stream bends found that 67 percent of bends without vegetation eroded during a storm, while only 14 percent of bends with vegetation showed erosion (Beeson and Doyle 1995).

Maintaining Waterfront Property Value

A study done in Craven County found that waterfront property commands a higher premium compared to an otherwise equivalent property (Bin et. al., 2008). The study also found that the mandatory riparian buffer rules did not lower waterfront property values. The benefits that buffers provide in the form of improved water quality and general aesthetics may actually enhance riparian property values.

A study done in Minnesota found that waterfront properties on lakes with better water quality were purchased at a higher price than those on lakes with lower water quality (Krysel et al. 2003). Studies completed in Michigan, Maine and the Chesapeake Bay also found that water quality had a significant effect on residential property values (Brashares 1995; Michael et al. 1996; Boyle et al. 1998, and Leggett & Bockstael 2000).

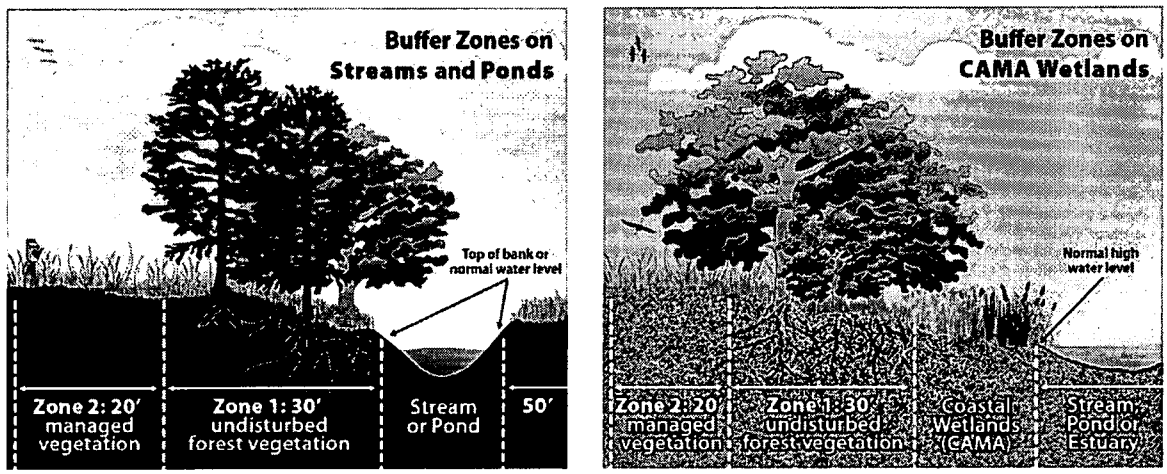
Lower Cost Alternative

According to USDA economists, 40-45 million acres of cropland have been converted to conservation areas in Maryland at an annual cost of $1 billion. These conservation areas have generated $3.5-4.5 billion annually in water quality benefits, including reduced erosion, increased recreational fishing, navigation improvements, water storage, nutrient removal and flood control (Lynch et. al. 1999). Having an existing riparian buffer is less expensive than having to later acquire land for conservation.

BUFFER RULES OVERVIEW

The rules require a 50-foot riparian buffer that is divided into two zones. The 30 feet closest to the water (Zone 1) must remain undisturbed. The outer 20 feet (Zone 2) can be managed vegetation, such as lawns or shrubbery. The riparian buffer rules also require diffuse flow of stormwater runoff. Diffuse flow refers to overland water flow that is spread out over the landscape, not concentrated into a defined channel. It is required on all buffered streams and must be achieved before stormwater runoff enters the riparian buffer from any new ditch or manmade conveyance. The buffers apply to intermittent streams, perennial streams, lakes, ponds, estuaries and modified natural streams that are depicted on the most recent printed version of the soil survey map prepared by the Natural Resources Conservation Service or the 1:24,000 scale quadrangle topographic map prepared by the U.S. Geologic Survey.

Figure 1



The riparian buffer rules allow for uses that are present and ongoing (i.e. existing uses) to remain in the buffer. For new uses, the riparian buffer rules include a Table of Uses that lists the activities allowed in each zone of the buffer. (Appendix 1- Neuse Table of Uses. Appendix 2- Tar-Pamlico Table of Uses). There are three different categories of allowable activities:

Exempt uses are allowed in the riparian buffer without approval from DWQ.

Allowable uses may occur in the buffer only after written authorization from DWQ.

Allowable with mitigation uses may occur in the buffer only after written authorization from DWQ that includes a mitigation strategy.

Uses that are listed as prohibited or uses that are not included in the Table of Uses are prohibited unless a variance is granted. Minor variances can be granted by DWQ for impacts to Zone 2 only. Major variances can be granted by the EMC for impacts to Zone 1 or Zones 1 and 2.

Soon after adopting the final version of the Neuse buffer rules, the Environmental Management Commission also issued a general major variance for the Neuse and Tar-Pamlico basins to allow additional buffer impacts on lots of less than two acres that were platted prior to August 1, 2000 (the date the final buffer rules went into effect in the Neuse River basin). Under the variance, a single-family residence in the coastal counties in the Neuse and Tar-Pamlico basins could encroach on the buffer as long as buffer impacts were minimized and any on-site wastewater system was installed landward of the buffer. There were also some additional conditions related to management of stormwater. The variance was only available to the person who owned the property at the time the buffer rules went into effect, although the variance approval could be transferred from the original owner to a later purchaser.

In 2011, the General Assembly adopted a "grandfather" provision for lots of less than 2 acres that were platted prior to August 1, 2000 in the Neuse or the Tar Pamlico basin. (Session Law 2011-394). The new grandfather provision, which has conditions very similar to the earlier EMC

variance, will eliminate the need to request a variance and be available to any lot owner without regard to when the property was purchased.

Both the EMC variance and the more recent session law were intended to prevent small coastal lots that were platted before the buffer rules went into effect from being unbuildable as a result of the buffer requirements. The conditions strike a balance between allowing use of these lots for residential development as originally intended, while still maintaining water quality benefits afforded by conserving as much of the riparian buffer as possible.

COMMENTS RECEIVED

DENR solicited comments from the development community, the agricultural community, the forestry industry, the environmental community, local governments, property owners and other interested parties through a memo posted on the DWQ public notice website and the DWQ 401 and Planning listservs. This memo had a 30-day public comment period (see page 15).

By the end of the comment period, 36 letters were received (see pages 16 to 66). 10 of the letters recommended changes to the current buffer rules while 26 letters supported the current buffer rules and did not wish to see them revised or weakened.

Summary of Comments Recommending Changes to the Buffer Rules (10 of 37 Letters)

1. Nine letters were received from parties in favor of exempting all single family residential lots platted prior to Aug. 1, 2000.

   DENR does not recommend exempting all single family residential lots in the Neuse and Tar-Pamlico River Basins as this would significantly reduce the nutrient reduction benefits buffers provide. This effect would be cumulative throughout the basins and could be detrimental to water quality. From Aug.1, 2000 to Nov. 1, 2011, approximately 500 buffer authorizations were issued for single family private residential properties. Approximately 350 commercial buffer authorizations were issued during that same time period.

2. Five letters stated that coastal wetlands and other coastal vegetation should be measured as part of the 50-foot protected riparian buffer.

   Currently for the coastal counties that are in the Neuse and Tar-Pamlico basins, the riparian buffer measurement starts landward of the coastal wetlands (as shown in Figure 1). DENR does not recommend altering the method for measuring the protected riparian buffer on shorelines where there are coastal wetlands. The term "coastal wetland" does not refer to all wetlands in the coastal counties; it refers specifically to what are commonly called "salt marshes" – wetlands that are regularly or irregularly flooded by tides. Buffers are measured from the landward edge of these salt marshes because the marsh functions as part of the estuarine surface water system.

As a result of the close connection between estuarine waters and salt marshes, measuring the buffer in a way that allows coastal wetlands to form part of the buffer would not serve the intended purpose of keeping nutrients and other pollutants out of the waters.

Also, on some shorelines the fringe of coastal wetlands may also be more than fifty feet wide and counting those wetlands as part of the 50 foot riparian buffer would suggest to property owners that it may be possible to build in the coastal wetland itself. That would potentially create a conflict with federal law and other state laws. Restrictions on development in coastal wetlands exist to protect fish and shellfish that make up North Carolina's commercial and recreational fishing industry. Ninety percent of the total value of North Carolina's commercial catch is supported by the coastal marsh system [N.C. General Statute 113A-102 (a)].

3. One letter stated the provision in [15A NCAC 02B .0233(9)(a)(i)(E) and [15A NCAC 02B. 0259(9)(a)(i)(E)] should be deleted. That provision states that the applicant is not eligible to receive a variance if the property was purchased after the effective date of the buffer rule.

   The General Major Variance issued by the EMC for development of small lots platted before August 1, 2001 was limited to property owners who had purchased their lots before the buffer rules went into effect. The commenter's concern about this limitation on the availability of the General Major Variance has recently been addressed in Session Law 2011-394 which created a grandfather provision that applies to those previously platted lots. The grandfather provision can be used by anyone who owns a lot of less than two acres in size that was platted prior to August 1, 2001 without regard to when they may have purchased the property.

4. One letter stated there should be a general permit for buffer disturbance associated with piping streams, construction of bulkheads and retaining walls and building support pilings.

   Currently, there is a general permit for shoreline stabilization (including bulkhead installation) and a general permit for creation of access ways to piers and dock facilities. Piping streams could include any number of uses and thus would be difficult to permit under a general permit. Buildings, including their support pilings, require a major variance; therefore a general permit cannot be developed. Since there is not a high demand for permitting retaining walls, DENR does not plan to develop a general permit for this activity at this time.

5. Four letters came from parties wanting to see changes to the vegetation in the buffers in the coastal counties to allow for a better viewshed. One stated there should not be a requirement to have any vegetation above 2 feet in height in order to preserve the value of the property and to protect the water body, and the other two comments stated any vegetation that is less than 5 inches diameter breast height should be allowed to be cleared without significant ground disturbances and left in its natural condition.

   In the current buffer rules, Zone 2 must remain vegetated, which can include grass or any other type of vegetation, at any height (including less than 2 feet). Zone 1 must remain

undisturbed; however, existing trees and shrubs can be pruned without a permit and invasive vegetation can be removed without a permit.

Vegetation that is above 2 feet in height would primarily include native hardwood trees and shrubs. The well-developed root structure associated with native hardwood trees and shrubs provide for the nutrient, sediment and pollutant removal and more effective shoreline stabilization. The native hardwood tree canopy provides temperature control, light control and terrestrial habitat.

To maintain the important water quality functions of the riparian buffer, the current protections to the vegetation should remain in effect.

6. One letter stated that internal memos between staff members or rulings from court cases should not have any effect on a property owner who was not a party to the case that the memo or ruling referred to.

   Where applicants have raised issues of ambiguity of the current buffer rules, DENR staff responded with memos to clarify the interpretation of the rules. DWQ provides public notice of these interpretation memos on the DWQ riparian buffer website and through the DWQ 401 listserv. DWQ will review those buffer interpretation memos to determine whether any need to be adopted as rule amendments. Court decisions that deal with interpretation of state laws and rules can have an effect that goes beyond the parties to the case. That is especially true if the decision comes from an appeals courts, because all other courts in the state have to follow those decisions. DENR also has a legal obligation to follow the law, including any interpretations of the law made by the state's courts.

7. Two letters were from parties wanting to see changes in how mitigation is regulated in these two basins.

   Pursuant to General Statute 143-214.20, DENR is moving forward with a draft consolidated buffer mitigation rule based on stakeholder input on how buffer mitigation is regulated.

8. One letter suggested the correction of a codification error in the purpose statement of the Tar-Pamlico Riparian Buffer Rule that will protect riparian owners from having to defend against erroneous arguments about the purpose of the rule.

   DENR appreciates this comment and will research this further.

9. Two letters stated the Neuse and Tar-Pamlico buffer rules should be made into one comprehensive rule and one letter stated these buffer rules should be clarified.

   DENR concurs that one comprehensive rule would be easier to understand and implement. DENR would need to address this modification through the rulemaking process.

10. One letter stated building set-back provisions should be re-examined to ensure conformity with local regulations and to prevent duplication.

DENR does try to coordinate with local governments to prevent duplication when possible. However, DENR believes the building set-back provisions are necessary for the riparian buffer to function and protect water quality.

11. One letter stated that the current Best Management Practices (BMPs) should be revised by removing all ineffective or outdated techniques.

    DENR does revise the Stormwater BMP manual regularly based on public input and new and innovative science and engineering standards.

12. One letter stated these rules have a significant impact on waterfront properties and annual studies by NCDENR indicate no improvement in water quality, so these rules need to be curtailed or sunsetted in the future.

    Removing the existing function of the existing buffers would increase the nonpoint source load to the water bodies. Per General Statute 143-215.8B, all point sources and nonpoint sources of pollutants jointly share the responsibility of reducing the pollutants in the State's waters in a fair, reasonable and proportionate manner. Removing the existing riparian buffer requirements would shift the burden of nutrient reductions to other sources such as farmers, local governments, etc., with engineered controls such as constructed wetlands and bioretention cells, which would be much more costly than maintaining existing riparian buffers.

13. One letter stated that all variances should be handled at the staff level and not require EMC approval.

    Currently, minor variances for Zone 2 impacts are handled at the staff level. Major variances for Zone 1 impacts do require EMC approval. The EMC processes approximately 3-10 major variances a year and DENR processes approximately 45-50 minor variances a year. DENR recommends keeping the EMC as the decision maker for major variances due to the low volume of major variance applications and due to the fact that the EMC has flexibility to approve variances that have very unique circumstances.

14. One letter stated that all "Allowable" activities in the Table of Uses should be converted to "Regulation by Rule." This approach eliminates the need to have staff approve such activities and will save considerable time and expense for property owners.

    Within the Table of Uses for each riparian buffer rule, there are "Exempt" uses that do not require DENR approval. "Allowable" uses require DENR staff review and approval prior to the activity occurring in the buffer. By having DENR staff review the "Allowable" use applications, the staff can ensure that the final permitted activity will minimize the impacts to the buffers and provide protection to the natural resources, while still allowing development to occur within the buffers. DENR recommends keeping the current approval process in place for allowable uses.

15. One letter proposed only requiring a 30-foot riparian buffer, but in exchange for "surrendering" Zone 2, the state should require a 30-foot riparian buffer in other river basins, targeting the most impaired basins first.

Scientific literature shows the 50-foot wide buffer is necessary to achieve the 30 percent nitrogen reduction goals required by Session Law 1995-572. The buffer rules were created in response to significant nutrient loads to the Neuse and Tar-Pamlico estuaries. Maintaining existing buffers in these two basins is part of an overall nutrient management strategy to reduce the nutrient loads in these two estuaries. Per General Statute 143-215.8B, all point sources and nonpoint sources of pollutants jointly share the responsibility of reducing the pollutants in the state's waters in a fair, reasonable and proportionate manner. Removing the existing riparian buffer requirements would shift the burden of nutrient reductions to other sources, such as farmers, local governments, etc., with engineered controls such as constructed wetlands and bioretention cells, which would be much more costly than maintaining existing riparian buffers. DENR does not support reducing the width of the protected riparian buffer.

Summary of Comments Supporting Current Buffer Rules (27 of 37 Letters)

16. Two letters stated that protection of forested riparian buffers is widely recognized as the most effective, reliable and low-cost way to keep streambanks from eroding and to retain or assimilate many common stormwater pollutants.

17. One letter stated there is no practical artificial means of achieving the combination of stream-bank stabilization (erosion protection) and stormwater infiltration (pollutant removal) that riparian tree roots and undisturbed forest soils provide.

18. Four letters were from parties that did not want single family residential lots platted prior to August 2000 to be exempted. Single family residential lots comprise a very large proportion of existing developed and yet-to-be-developed stream-front parcels in the Neuse and Tar-Pamlico basins, as well as elsewhere throughout North Carolina. Another similar comment for not exempting lots was for possible lawsuits associated with owners of lots that would now be considered exempt wanting compensation.

19. Twenty-three letters stated this buffer zone was established to minimize disruption to stormwater runoff, provide flood control, stabilize stream banks, absorb excess nutrients, prevent shoreline erosion and to maintain fish and wildlife habitats.

20. Two letters stated that continued water quality degradation will result in high cleanup and compliance costs.

RECOMMENDATIONS

Based on the results of the study, DENR offers the following recommendations:

(i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins.

Scientific literature indicates that a 50-foot buffer, as required by the current Neuse and Tar-Pamlico buffer rules, is necessary for effective nutrient removal from existing landscapes to protect the water quality in the Neuse and Tar-Pamlico River Basins. Removing the existing riparian buffer requirements would place an increased burden for nutrient reductions on other sources, such as wastewater treatment plants, industrial dischargers, local government stormwater systems and agriculture. Getting additional reductions from those sources is typically more costly than maintaining existing riparian buffers.

(ii) Exempting all single family residence lots (lots of two acres in size or less) platted prior to Aug. 1, 2000.

Under Session Law 2011-394(17), a grandfather provision allows some encroachment into the buffer if that is necessary to construct a residence on a single-family residential lot (two acres in size or less) platted prior to Aug. 1, 2000 in the coastal area. The provision allows additional flexibility in siting structures on these small, previously platted lots without having to go through a variance process for impacts in Zone 2 of the protected riparian buffer.

DENR recommends expanding the grandfather provision outlined in Session Law 2011-394 to all single family residential lots (lots of two acres in size or less) throughout the Neuse and Tar-Pamlico River Basins. As provided under S.L. 2011-394, where application of the riparian buffer requirements would preclude construction of a single-family residence and necessary infrastructure, such as an on-site wastewater system, this would allow a single-family residence to encroach on the buffer if all of the following conditions are met:

(1) The residence is set back the maximum feasible distance from the top of bank, rooted herbaceous vegetation, normal high-water level or normal water level, whichever is applicable, on the existing lot and designed to minimize encroachment into the riparian buffer.

(2) The residence is set back a minimum of 30 feet landward of the top of bank, rooted herbaceous vegetation, normal high-water level or normal water level, whichever is applicable.

(3) Stormwater generated by new impervious surface within the riparian buffer is treated and diffuse flow of stormwater is maintained through the buffer.

(4) If the residence will be served by an on-site wastewater system, no part of the septic tank or drainfield may encroach into the riparian buffer.

CONCLUSION

Scientific literature indicates that a 50-foot riparian buffer performs many functions that protect water quality, including nutrient, sediment and pollutant removal, flood and temperature control, and stream bank stabilization. The Neuse and Tar Pamlico buffer rules were adopted specifically to address nutrient loading from developed areas as part of a larger nutrient management strategy that also requires reductions from municipal and industrial dischargers and agriculture. Removing the existing riparian buffer requirements would shift the burden of additional nutrient reductions to those other sources, such as farmers, local governments, etc., which would be much more costly than maintaining existing riparian buffers.

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August 18, 2011

TO: 401 Water Quality Certification Mailing List and Other Interested Parties

FROM: CBK Cyndi Karoly, Wetlands and Stormwater Branch Manager

RE: Study of the Neuse and Tar-Pamlico Riparian Buffer Rules

The purpose of this Public Notice is outline below. This notice is available electronically at http://portal.ncdenr.org/web/wq/swp/ws/401/publicnotices.

Study of the Neuse and Tar-Pamlico Riparian Buffer Rules
The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:

(i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
(ii) Exempting all single family residential lots platted prior to August 1, 2000.

The Neuse and Tar-Pamlico Buffer rules are available at:
http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/rules.

A copy of Session Law 2011-394 is available at:
http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf.

Please submit any written comments on item (i) and/or (ii) listed above within 30 calendar days of the date of this letter to: Ms. Amy Chapman, Wetlands, Buffers, Stormwater – Compliance & Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650 or Amy.Chapman@ncdenr.gov. If you have any questions about the study, please contact Ms. Chapman at Amy.Chapman@ncdenr.gov or 919-807-6400.

cc: DWQ Regional Wetland contacts
Matt Matthews
Chuck Wakild
Coleen Sullins

Wetlands, Buffers, Stormwater, Compliance and Permitting Unit (WeBSCaPe)
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
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Internet: http://portal.ncdenr.org/web/wq/ws
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One NorthCarolina Naturally

September 16, 2011

Via Electronic Mail

Ms. Amy Chapman
Wetlands, Buffers, Stormwater
Compliance & Permitting Unit
1650 Mail Service Center
Raleigh, NC 27699-1650

Dear Ms. Chapman,

Please accept these comments on the Neuse and Tar-Pamlico River Basin Riparian Buffer Rules on behalf of the Tar-Pamlico Basin Association.

As mandated by session law 2011-394, the Division of Water Quality (DWQ) is seeking comments on the application and implementation of the Neuse and Tar-Pamlico River Basin Riparian buffer rules. More specifically the Division is seeking comments on:

i. Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
ii. Exempting all single family residential lots platted prior to August 1, 2000.

Buffers are a key component of DWQ's Nutrient Reduction Strategy

N.C. General Statute § 143-215.8B required that the Environmental Management Commission develop and implement a basinwide management plan in the Neuse and Tar-Pamlico River Basins. Because the River Basins were designated as nutrient sensitive waters, the EMC was required to establish nutrient reduction goals to "reduce the average annual mass load of nutrients that are delivered to surface waters within the basin from point and nonpoint sources."

N.C. General Statute § 143B-282(d) required the EMC to incorporate the maximum daily loads for nutrients into "rules setting out the strategies necessary for assuring that water quality standards are met by any point or nonpoint source or by any category of point or nonpoint sources that is determined by the Commission to be contributing to water quality impairment."

DWQ's nutrient reduction strategy includes both point source agreements and nonpoint source rules. In the Tar-Pamlico River Basin, the Tar-Pamlico Basin Association of point sources has consistently exceeded its nutrient reduction requirements. Nonpoint source discharges continue to be a substantial problem in the Tar-Pamlico River Basin, as noted in the most recent

Basinwide Water Quality Plan. Riparian buffer rules are a key component of DWQ's nutrient reduction strategy for the Tar-Pamlico, as they filter nonpoint source runoff and prevent nutrients from reaching impaired water bodies.

Key findings from the 2010 Tar-Pamlico River Basin Water Quality Plan

1. Despite the fact that the targeted point and nonpoint pollution sources have been able to meet their nutrient reductions, total nitrogen and total phosphorous concentrations do not show a downward trend and loads have not fallen below the 1991 baseline load goals. (WQP at 6.1)
2. The 2010 water quality assessment of the Pamlico River Estuary indicates ~28,923 acres are impaired because they failed to meet chlorophyll a water quality standards (over 10% of the samples taken within a five year data window exceeded the chlorophyll a standard of 40 µg/L). (WQP at 6.1)
3. Based on the trend analyses the TN 30% loading reduction goal has not been reached and the TP load has exceeded the 1991 maintenance level. There is also no decrease in TN or TP concentrations trends. (WQP at 6.6)
4. The implementation of the NSW strategy has thus far not resulted in meeting water quality standards in the Pamlico River Estuary. The decrease in annual loads of TP and TN below the baseline levels as shown in Figures 6-1 and 6-2 [see WQP for figures], during the drought years of 2007-2008, suggest recent nutrient loading to the estuary is likely a result of nonpoint source contributions. (WQP at 6.6)
5. The TPBA has consistently and reliably kept its nutrient loadings beneath the caps without relying on banked credits. (WQP at 6.10)
6. Due to the decades of chronic overloading, the time lag required for nonpoint source input reductions to be fully expressed, and the likelihood of nutrient cycling within the estuary, it may be some time before current reductions in nutrient loading will reflect in improved water quality, and before a definitive assessment of the effect of the strategy on the estuary can be made. (WQP at 6.29)
7. Summary and Necessary Actions: Develop, strengthen and enforce riparian buffer ordinances. (WQP at 6.31)

The TPBA has consistently met its nutrient reduction obligations

The Tar-Pamlico Basin Association, which represents the largest point sources of nutrients in the Tar-Pamlico River Basin, consists of 15 WWTPs with permitted flows ranging from 0.15 to 21 million gallons per day (MGD). Throughout each phase of the Tar-Pamlico nutrient strategy, the TPBA has consistently met its nutrient reduction obligations.

- During Phase 1, the Association kept nutrient loading beneath an annually decreasing cap, reducing overall nitrogen and phosphorus loads by about 20% despite growth as reflected in a flow increase of about 7%. Members did so largely by improving treatment.

- In Phase 2, the Association stayed beneath both nitrogen and phosphorus caps, steadily reducing its loading of both nutrients despite increases in flow. In addition, the Association contributed funds and acquired grant funding for agricultural BMP implementation. The combined total of their contributions was $850,000 that funded nutrient-reducing BMPs like nutrient management plans, waste lagoon closures, cover crops, and water control structures.
- In Phase 3, monitoring by the Association has shown their TP and TN loads to be in compliance with the required nutrient reductions.[1]

Members consider reductions below what is required by the cap as cushions for population growth in the watershed, ensuring that they will continue to stay below the cap as flows increase.

Further nutrient reductions will be increasingly expensive

The success of the Tar-Pamlico Basin Association has come at a cost: most TPBA members have invested in upgrades to control nutrients that cost millions of dollars per plant. These costs are born by taxpayers and water and sewer users in order to comply with the Tar-Pamlico nutrient management rules. Furthermore, despite point sources' success, overall conditions in the estuary have not improved significantly. If the nutrient conditions in the watersheds continue to fall below Total Maximum Daily Load requirements, the state or EPA may reopen the TMDL and assign additional reduction obligations. The likely outcome is that this additional burden would fall on point sources, with potentially colossal financial consequences.

If greater nutrient restrictions on point sources are enforced, the Tar-Pamlico sources may be forced to invest in even more advanced technology. The U.S. EPA's Municipal Nutrient Removal Technologies Reference Document states that upgrade costs vary greatly, depending on the nature of the existing facility, the required upgrade, and other site-specific factors. Their review of the costs for modification ranged from a low of $0.20 to a high of $5.25 per gallon per day (gpd) capacity.[2] When these costs are applied to the members of the Tar-Pamlico Basin Association, retrofit costs could range from $30,000 (assuming the low cost and smallest WWTP) to over $15 million (assuming the high cost and largest WWTP without advanced nutrient removal technology).

Exempting platted lots

Widespread, stringent application of the buffer rules is essential to maintaining current water quality levels in the Tar-Pamlico River basin. Further actions are needed to improve water quality. Without consistent application of protective rules, DWQ's own analyses make clear that

[1] N.C. Division of Water Quality. "Point Source Agreements." Available at: http://portal.ncdenr.org/web/wq/ps/nps/tarpampointsource

[2] U.S. Environmental Protection Agency. 2008. Municipal Nutrient Removal Technologies Reference Document. Available at: http://water.epa.gov/scitech/wastetech/upload/mnrt-volume1.pdf

nonpoint sources will continue to degrade water quality in these basins, limiting the benefit of reductions made by point source dischargers and agricultural sources. The buffer network in these systems cannot be effective if the properties platted before rule implementation are exempted from the rules.

If any legitimate harm were caused to individual property owners as a result of the riparian buffer rules, existing variance procedures are adequate to address it. True hardships, those that can be documented and would preclude reasonable use of property, can be remedied by seeking a major or minor variance under existing procedures. In fact, since implementation of the Tar-Pamlico buffer rule there have been a total of 36 general major variances and 59 minor variances. (WQP at 6.16)

Allowing buffer encroachment will cause more harm than good

The nutrient limits established by the TMDLs in the Tar-Pamlico and Neuse River Basins must be met one way or another. If low- or no-cost measures such as preserving existing buffers are given up, then more expensive measures such as wastewater treatment plant retrofits must be undertaken. Arguments that landowners will benefit from SL2011-394 are baseless, as shown by a 2008 study conducted in the Neuse River basin that found the riparian buffer rule has no effect on residential property values.[3] Not only does allowing buffer encroachment not make economic sense, but it essentially creates a mechanism for indirect mitigation, in which developers pass nutrient reduction obligations onto others in the watershed – who are already required by law to reduce their own emissions. It is clear that maintaining existing riparian buffers is the least-cost option to reduce nutrient delivery to the Tar-Pamlico estuary. Each carve into a buffer is also a carve-out for developers, and increases the overall cost of compliance with the TMDLs.

Conclusions

DWQ has correctly identified buffers as a critical and most cost-effective tool in their efforts to comply with the Clean Water Act and attain water quality standards in the Tar-Pamlico River Basin. Any further weakening or greater exemptions to the buffer rules will unfairly shift the costs of water quality protection and improvement to TPBA members, other nutrient sources, and to future landowners, local governments, water and sewer customers, and new development. The Tar-Pamlico Basin Association supports strong buffer rules and does not support exemptions for platted lots.

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3 Okmyung, Bin, et al., Riparian Buffers and Hedonic Prices: A Quasi-Experimental Analysis of Residential Property Values in the Neuse River Basin, American J. of Agricultural Economics, Vol. 91, Issue 4, 1067-1079 (2009).

Signed,

Larry P Thomas
CHAIRMAN

Pamlico-Tar River Foundation • Neuse Riverkeeper Foundation • Environmental Defense Fund
Southern Environmental Law Center • NC Conservation Network • WakeUP Wake County

September 16, 2011

Via Electronic Mail

Ms. Amy Chapman
Wetlands, Buffers, Stormwater
Compliance & Permitting Unit
1650 Mail Service Center
Raleigh, NC 27699-1650

Dear Ms. Chapman,

Please accept these comments on the Neuse and Tar-Pamlico River Basin Riparian Buffer Rules ("buffer rules") on behalf of the Pamlico-Tar River Foundation, Neuse Riverkeeper Foundation, Environmental Defense Fund, Southern Environmental Law Center, North Carolina Conservation Network, and WakeUP Wake County.

It is our understanding that the Division of Water Quality ("DWQ") intends to submit these and other comments on the Buffer Rules in response to Session Law 2011-394's requirement that the agency study:

(i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
(ii) Exempting all single family residential lots platted prior to August 1, 2000.

Through various documents described below, DWQ has plainly and clearly acknowledged that the Neuse and Tar-Pamlico River basins need more riparian buffers to prevent continued decline of water quality in the basins and eventually allow those rivers to meet water quality standards. As explained below, either weakening the existing rules to allow the loss of additional riparian buffers through amending or implementing the rules differently or exempting properties platted prior 2000 will result in further impairment to these river basins and will necessarily result in additional pollution-reduction burdens on point sources and agricultural dischargers. The clear environmental and economic choice is to strengthen the existing buffer rules.

I. Buffers Are The Most Cost-Effective Tool For Protecting Water Quality From Nonpoint Source Pollution.

DWQ's strategies for restoring the health of the Tar-Pamlico and Neuse river systems are found in their respective, statutorily required basinwide management plans. *See* N.C. Gen. Stat. § 143-215.8B. Because both basins are designated as nutrient sensitive waters – a reality often highlighted by frequent chlorophyll *a* water quality standard violations and massive fish kills in the estuaries – the plans must establish nutrient reduction goals to "reduce the average annual mass load of nutrients that are delivered to surface waters within the basin from point and nonpoint sources." Importantly, the responsibility to

reduce nutrients is to be "jointly share[d]" between point and nonpoint sources "in a fair, reasonable, and proportional manner." *Id.*

A robust riparian buffer program is the only feasible way to meet this requirement, as illustrated by DWQ's basinwide water quality plans for each system. The recently revised Neuse River Water Quality Plan ("Neuse WQP") emphasizes the importance of buffers. The plan notes that point sources and agricultural users have reduced their pollution levels by approximately 65 and 45 percent, respectively. Neuse River WQP at 464, *see* Tar-Pamlico River Basin Water Quality Plan ("Tar-Pam WQP") at 6.1 (noting that point sources and agricultural sources have met reduction goals). Despite those reductions there has not been "any significant decrease in actual nitrogen loading to the estuary," indicating that nonpoint sources continue to prevent the system from meeting water quality standards. Neuse River WQP at 7. The WQP goes on to conclude that "more needs to be done to reduce nutrient load." Neuse River WQP at 358. The consequences of failing to do so are clear in that "many more stream miles are likely to become impaired during the next assessment period if this trend continues." Id at 358-59. To prevent that outcome, DWQ determined that "it is important to protect the existing buffers and to establish new and possibly wider buffers where at all possible." *Id.* at 360, *see* Tar-Pam WQP at 6.31.

For those reasons, the riparian buffer program is an essential part of the TMDLs created to address the impairments in the basins as required by the Clean Water Act. When TMDLs were established in the Neuse and Tar-Pamlico river basins, large point sources in each basin were assigned collective nitrogen reduction goals of 30% and formed discharger associations to ensure that these limits were met. The Tar-Pamlico Basin Association, which represents the largest point sources of nutrients in the Tar-Pamlico River Basin, consists of 15 WWTPs with permitted flows ranging from 0.15 to 21 million gallons per day (MGD). The Neuse River Compliance Association consists of 26 facilities that emit greater than 0.5 MGD. In the Neuse, association members invested over $250 million in plant improvements and succeeded in reducing nitrogen discharge by 46%. The Tar-Pamlico Basin Association also reduced nitrogen levels underneath its collective cap. Further reductions below members' allocations serve as cushions for population growth in the watershed.

Despite point sources' success, overall conditions in both estuaries have not improved significantly. If the nutrient conditions in the watersheds continue to fall below TMDL requirements, the state or EPA may reopen the TMDLs and assign additional reduction obligations. Due to the fact that the Clean Water Act provides greater regulatory authority over point sources, the likely outcome is that the additional burden would fall on wastewater treatment plants, with potentially colossal financial consequences. In the Tar-Pamlico, most of the WWTPs have invested in upgrades that cost millions of dollars per plant, yet only a few have advanced nutrient removal technology. If greater nutrient restrictions on point sources are enforced, the Tar-Pamlico sources may be forced to invest in even more advanced technology. In the Neuse, all but a few of the large point sources have already installed advanced nutrient removal technology, therefore additional reduction requirements would first remove their cushion reserved for growth and then force the plants to find means of reducing nutrients beyond the limits of technology. Remaining options include greater regulation of small point sources, non-discharge wastewater management by large point sources, and funding best management practices to reduce nonpoint source pollution.

It would cost a 0.5 MGD facility, the smallest of the WWTPs in the Neuse River Compliance Association, $100,000 to $2,625,000 to upgrade to advanced nutrient removal technology that could be

necessary to offset the lost water quality benefits provided by riparian buffers if the buffer rules are relaxed or a significant number of properties are exempted.

The economic benefit of riparian buffers as opposed to other nutrient control methods was recently studied by RTI. As shown in the table below, which is excerpted a 2007 RTI report, riparian buffers offer us the least cost alternative for water quality protection and removal of nutrients. It should be noted that this study measured the cost of installing new riparian buffers. Maintaining existing buffers is, of course, even less expensive.

Table 1: Average Costs of Best Management Practices (BMPs) for Phosphorous and Nitrogen Removal

	Nitrogen ($/lb-N per 30 year, $2011)		Phosphorous ($/0.10lb-P per 30 year, $2011)	
BMP	Tar-Pamlico	Neuse	Tar-Pamlico	Neuse
Riparian Buffers	$18.65	$23.75	$28.86	$36.85
Stormwater Wetlands	$87.25	$91.02	$69.15	$72.93
Large Bioretention Areas	$626.93	$637.47	$421.13	$428.02
Wet Ponds	$286.60	$293.04	$180.15	$183.59

Source: RTI International 2007[1]

The nutrient limits established by the TMDLs in the Tar-Pamlico and Neuse River Basins are not a bureaucratic target; they are a scientific reality that also has legal consequences. If the pollution reductions required by the TMDL are not met, water quality in the estuary will not meet the levels needed to sustain public and private uses of the estuary. But beyond that, federal regulations forbid new or expanded discharges into impaired waters. Legislation that weakens riparian buffers and allows greater loadings from nonpoint places a firm obstacle in the path of all point sources in the watershed – cities cannot grow, stormwater systems cannot be expanded, new industries cannot be approved. Strong riparian buffer protections are thus critical to protecting economic growth in the Neuse and Tar-Pamlico watershed.

Finally, the only study we are aware of that evaluated the economic impact of the riparian buffer rules found that buffer rules do not have a negative impact on property value, and may increase the value of waterfront property by improving water quality. In a study published in 2009, researchers from East Carolina University evaluated the impact of the Neuse Buffer Rules on property values in Craven County.[2] The researchers evaluated sales data from 3,176 sales of riparian and non-riparian properties from 1992 through 2002. *Id.* at 8. Although they expected to find some diminution of property value as a result of the buffer rules, the researchers found that the buffer rules did not lower property values of riparian properties within the study area when compared to non-riparian properties. *Id.* at 18. Further, the researchers suspected that the improved water quality that would result from an intact buffer network would offset any adverse effect of the buffer rules on property values because "a simultaneous restriction on neighboring properties that is expected to improve water quality and general aesthetics

[1] RTI international. 2007. A study of the costs associated with providing nutrient controls that are adequate to offset point source and nonpoint source discharges of nitrogen and other nutrients. Prepared for the North Carolina Environmental Review Commission.

[2] Okmyung, Bin, et al., Riparian Buffers and Hedonic Prices: A Quasi-Experimental Analysis of Residential Property Values in the Neuse River Basin, American J. of Agricultural Economics, Vol. 91, Issue 4, 1067-1079 (2009).

may enhance property value." *Id.* at 19 (emphasis added). The study found that hog farms and hazardous waste sites negatively affect property values, but that the riparian buffer rules do not.

As made clear by this study, the buffer rules impact on property values is, if anything, positive. Therefore, any changes that have the effect of "reducing the impact" on property owners, as envisioned by the Session Law, would reduce this positive impact. Active agriculture, businesses, roadways and industry have all continued under the rules. These modest rules are specifically designed only to (1) maintain existing buffers, and (2) minimize new paved or built-on surfaces near the water. The rules do not deprive the land of its economic value, but rather preserve the economic value of downstream lands and the health of our commonly held waters.[3]

II. Weakening Existing Rules or Exempting Properties Would Jeopardize Water Quality, Fisheries, and Burden Point Sources.

Widespread, stringent application of the buffer rules is essential to maintaining current water quality levels in both the Neuse and Tar-Pamlico River basins. Session Law 2011-394 suggests a movement towards weaker, piecemeal protections for riparian buffers. DWQ should forthrightly oppose that movement because of the detrimental long-term impacts for the Neuse and Tar-Pamlico River systems. As DWQ has repeatedly stated, further actions are needed to improve water quality. Without consistent application of protective rules, DWQ's own analyses make clear that nonpoint sources will continue to degrade water quality in these basins, limiting the benefit of reductions made by point source dischargers and agricultural sources.

Both study options threaten to punch holes in existing buffer protections in a manner that would increase landowner confusion and decrease water quality protections. Amending the buffer rules to allow more flexibility in approving buffer impacts or limiting their implementation – thereby allowing additional development in some buffers – could create disparities between landowners that would promote misunderstandings of the buffer rules, promote violations of the rule, and hamper DWQ's efforts to enforce the rules. Just the opposite is needed to provide clarity for landowners and benefits to water quality.

Similarly, exempting certain properties will only ensure confusion and water quality degradation by creating patchwork buffers and treating similarly situated properties differently. Moreover, it is wholly unnecessary. If any legitimate harm were caused to individual property owners as a result of the riparian buffer rules, existing variance procedures are adequate to address it. True hardships, those that can be documented and would preclude reasonable use of property, can be remedied by seeking a major or minor variance under existing procedures. 15A N.C. Admin. Code 02B. 0233(9), .0259(9).

III. Summary

The Neuse and Tar-Pamlico River Basins need more riparian buffers to prevent continued decline of water quality and eventually allow those rivers to meet water quality standards. Additional changes to the rules that allow for greater losses to riparian buffers will result in further impairment to these river basins. Furthermore, weakening provisions or greater exemptions to the rules will unfairly shift the costs of water quality protection and improvement to other nutrient sources and to future landowners, local governments, water and sewer customers, new development, etc. DWQ has correctly

[3] Riparian Buffers: Common Sense Protection of North Carolina's Water. 2003. Environmental Defense.

identified buffers as a critical and most cost-effective tool in their efforts to comply with the Clean Water Act and attain water quality standards in the Neuse and Tar-Pamlico River Basins.

Therefore, we strongly object to any additional exemptions to the buffer rules for lots platted prior to rule implementation and any amendments that result in greater loss of riparian buffers.

To conclude:

- Buffers are the most cost-effective tool for maintaining current water quality;
- Continued water quality degradation will result in high cleanup and compliance costs;
- Existing variance procedures are adequate at addressing legitimate hardships due to buffer rule implementation;
- Buffers result in better protections for water quality, thus yielding positive influences on property values;
- Without proper buffer rules, the nutrient reductions being achieved by point-source and row crop agriculture will be negated.

We appreciate your consideration of these comments.

Sincerely,

/s/

Heather Jacobs Deck
Pamlico-Tar Riverkeeper
Pamlico-Tar River Foundation

Geoff Gisler
Staff Attorney
Southern Environmental Law Center

Maggie Clary
Policy Analyst
Environmental Defense Fund

Larry Baldwin
Lower Neuse Riverkeeper
Neuse Riverkeeper Foundation

Grady McCallie
Policy Director
NC Conservation Network

Karen Rindge
Executive Director
WakeUP Wake County

16 Sept 2011

Subject: Comments on Session Law 2011-394 directive to consider changes to riparian buffer rules.

Dear Ms. Chapman, DWQ staff, and EMC Commissioners:

I have been working for a private environmental consulting firm in NC since 1987, and have dealt with DWQ's riparian buffer programs on many public and private projects since their inception. As both a consultant representing my clients' interests and a citizen concerned about aquatic ecosystem health, I would like to offer my perspectives on revising the Neuse and Tar-Pamlico Riparian Buffer Rules and their implementation policies, as directed by Session Law 2011-394.

1) Can the Neuse and Tar-Pamlico riparian buffer rules be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins?

Comment: Protection of forested riparian buffers is widely recognized as the most effective, reliable and low-cost way to keep stream-banks from eroding and to retain or assimilate many common stormwater pollutants. There is no practical artificial means of achieving the combination of stream-bank stabilization (erosion protection) and stormwater infiltration (pollutant removal) that riparian tree roots and undisturbed forest soils provide.

Considering the enormous growth of urban and suburban development in the Neuse and Tar-Pamlico basins over the past 30 year, forested buffers are crucial to protecting water quality and fish habitat in streams and estuaries . Any proposed changes to the buffer rules MUST provide equal or greater protection to channel stability, water quality and aquatic habitat.

One alternative might be to vary the required buffer width according to pre-construction local topography, so that natural ridges in the riparian zone could have a reduced zone 1 width in exchange for greater width in the low areas. Zone 1 (maintain as forest) could be reduced to 15 feet on ridges, IF it is increased to 40 feet in the adjacent swales. This flexibility option would allow stream-front owners more use of high-ground near the stream, while providing more undisturbed forest in the low areas where more soil-water is flowing. This option would be most useful along small Piedmont streams where the riparian zone has some natural topographic undulation. Along streams with a flat floodplain or terrace 50 feet or wider (no distinct ridges and swales), it would not be applicable.

2) Should the Buffer Rules exempt all single family residential lots platted prior to August 1, 2000?

Comment: No, single family residential lots platted prior to August 2000 should definitely NOT be exempted. Single family residential lots comprise a very large proportion of existing developed and yet-to-be-developed stream-front parcels in the Neuse and Tar-Pamlico basins, as well as elsewhere throughout NC. Allowing these owners or developers to clear their riparian forests to the stream-bank would contribute to massive levels of stream-bank erosion , and would soon be followed with massive releases of fertilizers as owners try to establish lawns or ornamental landscaping on these areas.

Thank you for the opportunity to comment on this important environmental protection issue.

Gerald Pottern
Robert J. Goldstein & Associates, Inc.
RJG&A Environmental Consultants
1221 Corporation Parkway, Suite 100
Raleigh, NC 27610 Tel: 919-872-1174
gpottern@RJGAcarolina.com

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DWQ PUBLIC NOTICE

Study of Neuse and Tar-Pamlico Riparian Buffer Rules, per Session Law 2011-394
18 Aug 2011 from Cyndi Karoly, Wetlands & Stormwater Branch Manager

The purpose of this Public Notice is outline below. This notice is available electronically at http://portal.ncdenr.org/web/wq/swp/ws/401/publicnotices.

Study of the Neuse and Tar-Pamlico Riparian Buffer Rules

The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:

(i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
(ii) Exempting all single family residential lots platted prior to August 1, 2000.

The Neuse and Tar-Pamlico Buffer rules are available at:
http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/rules.

A copy of Session Law 2011-394 is available at:
http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf.

Please submit any written comments on item (i) and/or (ii) listed above within 30 calendar days of the date of this letter to: Ms. Amy Chapman, Wetlands, Buffers, Stormwater – Compliance & Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650 or Amy.Chapman@ncdenr.gov. If you have any questions about the study, please contact Ms. Chapman at Amy.Chapman@ncdenr.gov or 919-807-6400.

>> Submit comments to Amy Chapman by Sept 17

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15 Sept 2011 DWQ Notice:
This fact sheet outlines the buffer rule changes for the eight coastal counties in the Neuse and Tar-Pamlico basins per Session Law 2011-394(17)(c). The buffer rule changes apply only to a coastal lot in the Neuse and Tar-Pamlico basins of two acres or less in size that was platted and recorded in the appropriate county's Register of Deeds prior to August 1, 2000.

The fact sheet can be viewed in its entirety at:
http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers

Session Law 2011-394 can be viewed in its entirety at:
http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf

Chapman, Amy

From: Michael Horan [mhoran@wilsonnc.org]
Sent: Tuesday, August 23, 2011 3:40 PM
To: Chapman, Amy
Subject: RE: Study of the Neuse and Tar-Pamlico Buffer Rules as required by SL 2011-394(17)(e)

Do not exempt lots platted prior to 2000, implications from such action could cause owners of said lots that have been enforced on and assessed penalties or were restricted from building could come back and ask for some type of compensatory action for their loss/trouble (possible lawsuits).

From: Chapman, Amy [mailto:amy.chapman@ncdenr.gov]
Sent: Thursday, August 18, 2011 3:13 PM
To: jhayes@nchba.org; richbq@mindspring.com; sig@sighutchinson.com; LBaldwin@ec.rr.com; bud@tarheelbuilding.com; willokelly@gmail.com; tom@beaufortedc.com; lmartin@nchba.org; jnhill@co.pitt.nc.us; rivins@co.orange.nc.us; ggisler@selcnc.org; riverkeeper@ptrf.org; Stanfill, Jim; Recktenwald, Marc; matt.flynn@townofcary.org; dan.mclawhorn@raleigh.nc.gov; kmartin@sandEC.com; julia.mullen@durham.nc.gov; megan.bolejack@chathamnc.org; Michael Horan; mark.senior@raleigh.nc.gov; norton@ebxusa.com; rwadkins@townofmorrisville.org; rsmith@pcsphosphate.com; anne.coan@nc.fb.org; Thorpe, Gregory J; Nicole Clift; carol.wright1951@yahoo.com; cpeters@email.unc.edu; fmi@embarqmail.com; Bryan.Hulka@weyerhaeuser.com; alissa@neuseriver.org; riverkeeper@neuseriver.org; Ernest Larkin; Hodge, Al; Adams, Amy; Smith, Danny; Gregson, Jim; jrudek@edf.org; Todd.StJohn@kimley-horn.com; cbromby@hunton.com; jhutton@wildlandsinc.com; Steenhuis, Joanne; Coburn, Chad
Cc: Reid, Dianne; Kreiser, Gary; Dorney, John; Karoly, Cyndi; Steenhuis, Joanne; Coburn, Chad; Gregson, Jim; Hodge, Al; Adams, Amy; Smith, Danny; Witherspoon, Lauren; Richmond, Martin; Landry, Natalie; Scheller, Roberto; Wrenn, Brian; Ridings, Rob; Wainwright, David; Higgins, Karen
Subject: Study of the Neuse and Tar-Pamlico Buffer Rules as required by SL 2011-394(17)(e)

August 18, 2011

The purpose of this Public Notice is outline below. This notice is attached for you and available electronically at: http://portal.ncdenr.org/web/wq/swp/ws/401/publicnotices.

The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:

(i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
(ii) Exempting all single family residential lots platted prior to August 1, 2000.

The Neuse and Tar-Pamlico Buffer rules are available at:
http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/rules.

A copy of Session Law 2011-394 is available at:
http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf.

Please submit any written comments on item (i) and/or (ii) listed above within 30 calendar days of the date of this letter to: Ms. Amy Chapman, Wetlands, Buffers, Stormwater – Compliance & Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650 or Amy.Chapman@ncdenr.gov. If you have any questions about the study, please contact Ms. Chapman at Amy.Chapman@ncdenr.gov or 919-807-6400.

This notice was also published on the 401 listserv and the Planning listserv as well. This email may be a duplicate for you.

Amy Chapman
Wetlands, Buffers, Stormwater, Compliance and Permitting Unit (WeBSCaPe)
NCDENR/Division of Water Quality - Wetlands and Stormwater Branch
1650 Mail Service Center
Raleigh, NC 27699-1650
Office: (919) 807-6400
Fax: (919) 807-6494
Website: http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers
E-mail: amy.chapman@ncdenr.gov

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.

September 15, 2011

TO: Ms. Amy Chapman, Wetlands, Buffers, Storm water – Compliance & Permitting Unit

FROM: Concerned Homeowner Lake Royale Community, Louisburg, NC

RE: 1) Public Notice – Study of the Neuse and Tar-Pamlico Riparian Buffer Rules Notice dated August 18, 2011

2) Session Law 211-394 Section 17

I do not support Session Law 211-394 Section 17 reducing the riparian buffer zone from 50 to 30 feet. This buffer zone was established to minimize disruption to storm water runoff, provide flood control, stabilize stream banks, absorb excess nutrients, prevent shoreline erosion and to maintain fish and wildlife habitats. This riparian buffer zone is part of a larger water quality effort involving the North Carolina Environmental Management, Coastal Resources, Marine Fisheries Commission and the Department of Environmental and Natural Resources (DENR).

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Mim S. Dyer

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SEP 21 2011
DENR - WATER QUALITY
WETLANDS AND STORMWATER BRANCH

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Richard C. Dyer

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September 15, 2011

TO: Ms. Amy Chapman, Wetlands, Buffers, Storm water – Compliance & Permitting Unit

FROM: Jonathan Grobani, Lake Royale resident (Franklin County) Box 752, Bunn, NC 27508

RE: Response to Public Notice – Study of the Neuse and Tar-Pamlico Riparian Buffer Rules - Notice dated August 18, 2011 (pursuant to Session Law 211-394 Section 17)

I hereby express my opposition to any reduction in the riparian buffer zone currently in place under North Carolina law. As you are aware, this buffer zone was established to minimize disruption to storm water runoff, provide flood control, stabilize stream banks, absorb excess nutrients, prevent shoreline erosion and maintain fish and wildlife habitats. This riparian buffer zone is part of a larger water quality effort involving the North Carolina Environmental Management, Coastal Resources, Marine Fisheries Commission and the Department of Environmental and Natural Resources (DENR).

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Kenneth V Smith
1160 Lake Royale
1031 Saganaw Drive
Louisburg, NC 27549

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Nicole Clift

1349 Sagamore
1213 Lake Royale
Louisburg NC
27549

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J R O'Neal

209 Lake Royale
122 Oklahoma Dr
Louisburg, N.C. 27549

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William M. Wallace
110 Pontiac Cove
123 Lake Royale
Louisburg, NC 27549

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Joseph Segel

Joseph Segel
116- Custer Cove
Louisburg, NC 27549

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Pauline Muller
1218 Lake Royale
104 Doc Drive
Louisburg, NC 27549

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502 Lake Royale
671 Sagamore
Louisburg, NC 27549

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Cheryl B. Von Graefenland
Cheryl B. Von Graefenland
9024 Lake Royale
Louisburg NC 27549

cherylvong@nc.rr.com

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Chris & Christina Eschbach
110 Palomino Cove
Louisburg, NC 27549

Christina Eschbach

Chris Eschbach

DATE: September 17, 2011

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Suzanne M. Bozoni
113 Tsalamungo
Lake Royale

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Ryan Daniel Wheeler
346 Lake Royale
Louisburg NC
27549

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Marshall Tillery
77 Lake Royale
Louisburg NC
27549

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Kathleen Thomas
599 Lake Royale
Louisburg. NC
27549

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9-17-11

Paul A. Barabas

118 Custer Cove.
Louisburg, NC. 27549

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Raymond S Clark
1315 Saguamon Dr
Lot 2806

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105 Nebow
Lake Royale

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Don Goad

1083 Lake Royale
Louisburg, NC
27549

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T. Coleman
9/17/11
139 Winnebago Loop

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DATE: September 17, 2011

TO: Ms. Amy Chapman, Wetlands, Buffers, Storm water – Compliance & Permitting Unit

FROM: Concerned Homeowner Lake Royale Community, Louisburg, NC

RE: 1) Public Notice – Study of the Neuse and Tar-Pamlico Riparian Buffer Rules Notice dated August 18, 2011

2) Session Law 211-394 Section 17

I do not support Session Law 211-394 Section 17 reducing the riparian buffer zone from 50 to 30 feet. This buffer zone was established to minimize disruption to storm water runoff, provide flood control, stabilize stream banks, absorb excess nutrients, prevent shoreline erosion and to maintain fish and wildlife habitats. This riparian buffer zone is part of a larger water quality effort involving the North Carolina Environmental Management, Coastal Resources, Marine Fisheries Commission and the Department of Environmental and Natural Resources (DENR).

These agencies have worked diligently to protect North Carolina coastal and non-coastal waters from further degradation. Their efforts to protect natural habitats, water quality and the fishing industry are being compromised.

We must not only maintain existing policies, but continue to introduce additional policies and guidelines to maintain the effectiveness, beauty and economic benefits of our waterways. The reduction of the buffer zone appears to be of benefit to a few waterfront homeowners or developers without regard to the environmental impact to our state waters.

Deborah K Fowler - 104 Custis Cove

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DATE: September 17, 2011

TO: Ms. Amy Chapman, Wetlands, Buffers, Storm water – Compliance & Permitting Unit

FROM: Concerned Homeowner Lake Royale Community, Louisburg, NC

RE: 1) Public Notice – Study of the Neuse and Tar-Pamlico Riparian Buffer Rules Notice dated August 18, 2011

2) Session Law 211-394 Section 17

I do not support Session Law 211-394 Section 17 reducing the riparian buffer zone from 50 to 30 feet. This buffer zone was established to minimize disruption to storm water runoff, provide flood control, stabilize stream banks, absorb excess nutrients, prevent shoreline erosion and to maintain fish and wildlife habitats. This riparian buffer zone is part of a larger water quality effort involving the North Carolina Environmental Management, Coastal Resources, Marine Fisheries Commission and the Department of Environmental and Natural Resources (DENR).

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We must not only maintain existing policies, but continue to introduce additional policies and guidelines to maintain the effectiveness, beauty and economic benefits of our waterways. The reduction of the buffer zone appears to be of benefit to a few waterfront homeowners or developers without regard to the environmental impact to our state waters.

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Kent Smith
215 Lake Royale
220 Choctaw Drive
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September 19, 2011

Ms. Amy Chapman
Wetlands, Buffers, Stormwater – Compliance & Permitting Unit
North Carolina Department of Environment and Natural Resources
1650 Mail Service Center
Raleigh, NC 27699-1650

Dear Ms. Chapman,

This letter is intended to provide formal written comments from the North Carolina Association of REALTORS® to the Department of Environment and Natural Resources pursuant to the Department's request for feedback with regard to the application and implementation of the Neuse River Basin and Tar-Pamlico Basin Riparian Buffer Rules.

We are specifically providing comments regarding the following two items:

i. Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and

ii. Exempting all single family residential lots platted prior to August 1, 2000.

The steps currently being taken by the Department to seek public comment on these issues are to be commended. However, some legitimate questions must first be asked with regard to the current goals and implementation of the Rules and the programs put in place around them. We believe there are still too many unknowns and subjectivity surrounding the establishment of the water quality protection standards and the ways those standards should be achieved according to the Department. As part of their review process, the Department should look to simplify and clarify the current standards, clearly explain how those standards were developed and how they should be implemented and be transparent with the results expected from their implementation.

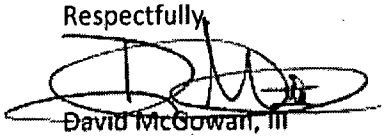
There are several ways we believe the Riparian Buffer Rules could be amended to achieve the same level of water quality protection while also reducing the impact to property owners in the Neuse and Tar-Pamlico River Basins, but we strongly believe the best way for the Department to achieve that outcome is to exempt all single family residential lots platted prior to August 1, 2000. This is the most equitable solution for the property owners who purchased those properties before the Rules were implemented. These properties should be exempt and not be subjected to a complicated variance process. For these owners, the Rules would serve as suggested best management practices, truly balancing the rights of private property owners while at the same time seeking to sustain water quality standards.

In some areas of the these two basins, including in Pamlico County where numerous pre-August 1, 2000, platted lots exist, the counties enacted standards long before the Department did. Their 75' set back from the mean high water mark means that on lots with little or no coastal vegetation, the setback results in more substantial protection than the Buffer Rules. In many cases, like in Pamlico County, the county's rule was more effective at protecting water quality, yet not as restrictive on the property owners. The need for variances has been created by the Buffer Rules requiring the same setback from vegetation as from water. The Rules give no credit to the existence of coastal vegetation, which is providing essential water quality protections.

If the Rules are to be amended or implemented differently without exempting lots platted prior to August 1, 2000, consideration should be given to the following factors. First, wetlands and other coastal vegetation should be allowed to count towards required buffer areas as they are natural buffers. Limited clearing and maintenance, beyond what is currently permitted, should be allowed in the buffer zone to maintain the view-shed and other essential characteristics of the property. Building set-back provisions should be re-examined to ensure conformity with local regulations and to prevent duplication. The current table of Best Management Practices should also be revised by removing all ineffective or outdated techniques. Finally, the Department should refine the current mitigation structure to allow for a more streamlined, cost-effective and permit-free process.

Thank you for the opportunity to submit comments on this importance subject. The North Carolina Association of REALTORS® understands the very important role the environment plays in the quality of life North Carolina citizens enjoy. We look forward to working with the Department and the other stakeholders to achieve a more sustainable balance between necessary regulations and the protection of private property rights.

Respectfully,



David McGowan, III
Director of Regulatory Affairs
North Carolina Association of REALTORS®
421 Fayetteville Street, Suite 1109
Raleigh, NC 27601
(919)573-0994 Direct

NORTH CAROLINA HOME BUILDERS ASSOCIATION

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*Deceased

September 20, 2011

Ms. Amy Chapman
Surface Water Protection Section
1650 Mail Service Center
Raleigh, NC 27699-1650

RECEIVED
SEP 23 2011
DENR - WATER QUALITY
WETLANDS AND STORMWATER BRANCH

Dear Ms. Chapman,

On behalf of the North Carolina Home Builders Association and particularly our members in the Neuse and Tar-Pamlico River Basins, I am writing to you to comment on the study of the Neuse and Tar-Pamlico buffer rules per your notice dated August 18, 2011. I apologize for the late submission. Due to Hurricane Irene and the related damage, I found it difficult to obtain detailed comments from our members in the coastal area. I hope that you understand and will accept these comments.

Both DENR and the regulated community have sufficient experience using the Neuse and Tar-Pamlico buffer rules such that a study of what is "working" and what is not would yield some efficiency for all parties. It is hard to pinpoint specifically what must be fixed, but a comprehensive examination of the buffer rule and any known water quality improvement that can be attributed to it would be beneficial. The first parameter should be to examine whether a 50 foot buffer is necessary. Considering the number of water quality and other land use requirements imposed on properties in the Neuse and Tar Pamlico basins it is logical that effective nutrient removal could occur with a smaller buffer.

The following are specific changes to the buffer rules that should be made:

- Single family lots platted and recorded prior to the effective date of the buffer rules should be exempt and not subject to a complicated variance process.

- There is no justification for the removal of coastal or other wetland areas from the buffer area calculation. Natural wetlands have the highest ability to remove sediment, reduce nutrients and treat stormwater and wastewater. The principal reasons for wetland conservation and preservation is the ability to filter drainage and surface waters. Wetlands present on the site currently cannot be removed or disturbed without a permit; thus, development projects that preserve natural wetlands should receive buffer credit, not debit.

- Delete the provision under Variances [15A NCAC 2B .0233(9)(a)(i)(E) and 15A NCAC 2B .0259 (9)(a)(i)(E)] that states that the applicant is not eligible to receive a variance if the property was purchased after the rule effective date. Variances run with the land and should be based on the specific and unique characteristics of the property and how the rule affects that property. If the land qualified for a variance on the day the buffer rule was implemented, then it would qualify every day after that, regardless of ownership.

Thank you for the opportunity to comment on this important subject. Members of the North Carolina Home Builders Association understand the importance of clean water to the viability of our communities. We look forward to working with DENR to review the existing buffer rules and to achieve a balance between regulation and the use and enjoyment of private property.

Sincerely,

Lisa D. Martin
Director of Government Affairs

Chapman, Amy

From: Mcmillan, Ian
Sent: Friday, August 19, 2011 2:25 PM
To: Chapman, Amy
Subject: RE: [DWQWETLANDS] Re: Study of Neuse and Tar-Pamlico Buffer Rules per Session Law 2011-394 (17)(e)

Responses:

(i) I propose only requiring a 30-foot, top-of-bank, landward riparian buffer, but in exchange for "surrendering" Zone 2, the State require a 30-foot, top-of-bank, landward riparian buffer in other river basins, targeting the most impaired basins first.

(ii) I would be okay with the second proposal

Ian J. McMillan, PWS, GISP
NCDENR/Division of Water Quality - Wetlands and Stormwater Branch
1650 Mail Service Center
Raleigh, NC 27699-1650
Office: (919) 807-6364
Fax: (919) 807-6494
Email: ian.mcmillan@ncdenr.gov

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: DWQWETLANDS@yahoogroups.com [mailto:DWQWETLANDS@yahoogroups.com] **On Behalf Of** dwqwetlands
Sent: Thursday, August 18, 2011 3:16 PM
To: DWQWETLANDS@yahoogroups.com
Subject: [DWQWETLANDS] Re: Study of Neuse and Tar-Pamlico Buffer Rules per Session Law 2011-394 (17)(e)

To clarify: The 30 day timeframe to submit written comments to this notice begins August 18, 2011.
--- In DWQWETLANDS@yahoogroups.com, "dwqwetlands" <cyndi.karoly@...> wrote:
>
> The purpose of this Public Notice is outline below. This notice is available electronically at http://portal.ncdenr.org/web/wq/swp/ws/401/publicnotices.
>
> Study of the Neuse and Tar-Pamlico Riparian Buffer Rules
> The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:
> (i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and

> (ii) Exempting all single family residential lots platted prior to August 1, 2000.
>
> The Neuse and Tar-Pamlico Buffer rules are available at:
> http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/rules.
>
> A copy of Session Law 2011-394 is available at:
http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf.
>
> Please submit any written comments on item (i) and/or (ii) listed above within 30 calendar days of the date of this letter to: Ms. Amy Chapman, Wetlands, Buffers, Stormwater – Compliance & Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650 or Amy.Chapman@... If you have any questions about the study, please contact Ms. Chapman at Amy.Chapman@... or 919-807-6400.
>

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Chapman, Amy

From: Zack Taylor [Ztaylor@Suddenlink.net]
Sent: Tuesday, September 20, 2011 10:59 AM
To: Chapman, Amy
Subject: Comments On Buffer Rules

Dear Amy,

I understand that you are asking the general public for comments concerning the Riparian Buffer Rules for the Neuse and Tar-Pam, (shown below) and I would like to submit the following comments and suggestions:

GENERAL REQUEST FROM DENR: The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:

Question #1: (i) Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins;

Comments:

1. Pipes For Ditches: Since the main purpose of the buffer is to prevent pollutants from entering the waters, and a properly installed culvert or pipe would prevent such, there should be a general permit available for the piping of ditches so long as a buffer area is provided in a radius around both open ends of the pipe or culvert.

2. Bulkheads and Walls: Since the main purpose of the buffer is to prevent pollutants (both from surface water and subterranean water flow) from entering the waters, and a properly installed bulkhead or wall (of a sufficient depth) would prevent such, there should be a general permit available for the installation of bulkheads or walls so long as a buffer area is provided in a radius around both ends of the bulkhead or wall if such end is within the normal buffer zone.

3. Support Pilings: Where a property owner wishes to erect a building within the buffer (zone #1 or #2), and such building will be supported by pilings that do not materially hamper the flow of water, and where such building obtains the necessary permits from the Corps of Engineers for any wetland fill, there should be a general permit available for property owners to erect such structures, so long as all roof water from such building is designed to sheet flow discharge in an area outside the buffer zones.

4. Vegetation Removal In Buffer: Where the regulated water body is a creek, river, or canal of sufficient width to be considered as a scenic view by the property owner (such as a waterfront lot), there should

not be any requirement to have any vegetation above a height of 2 feet, in order to both preserve the value of the property and to protect the water body.

5. Berms Adjacent To Waters: When there is a berm running parallel and adjacent to a regulated water body, and this berm is of sufficient height to prevent the normal flow of surface water from entering the water body, this berm should be considered as satisfactory protection, and the upland side of the berm should be exempted from the regulations of the buffer rules.

6. Variance Applications: A variance from the buffer rules should be allowed regardless of the length of time the property has been owned by the applicant, nor should it matter when the rules took effect, since the practical effect of the variance on the water body will be the same regardless of the time of ownership.

7. Notices To Property Owners: Adhering to the buffer rules as specified in the legislative bill governing the buffer rules, should be the only requirement of a property owner, and internal memos between staff members or rulings from court cases, should not have any effect on a property owner who was not a party to the case that the memo or ruling referred to. The average citizen should not have to hire an attorney or engineer in order to follow the rules.

Question #2: (ii) Exempting all single family residential lots platted prior to August 1, 2000.

Comments:

1. This proposal sounds fair, but I would suggest that it does not go far enough to protect the property rights of the landowner. Single family residential property has a very low probability of generating enough pollutants to have any major effects on water quality. Therefore I would suggest that all single family residential lots be exempted regardless of the date of platting or recording.

Thank You for registering my suggestions and comments.

Zack Taylor

P.O. Box 12006

New Bern, NC 28561

Chapman, Amy

From: Bill Clark [bill@billclarkhomes.com]
Sent: Wednesday, September 07, 2011 2:17 PM
To: Chapman, Amy

1. These two separate rules need to be one comprehensive rile. To much confusion for the public to follow the consistency in NCDENR interpretation.

2. These rules have a significant impact on waterfront properties and annual studies by NCDENR indicate no improvement in water quality so these rules need to be curtailed or sunsetted in the future.

3. Riparian buffer setbacks should begin from the mean high water mark or the ordinary high water mark, and then projected landward. Wetland areas should be included as part of the buffer because that was the original intent.

4. In the riparian buffer any vegetation that is <5 inches diameter breast height should be allowed to be cleared without significant ground disturbances and left in its natural condition.

5. All property deeded or recorded prior to the rule should be exempt.

Chapman, Amy

From: Larry F. Baldwin, CPSS/SC [LBaldwin@ec.rr.com]
Sent: Tuesday, September 06, 2011 8:15 PM
To: Chapman, Amy
Subject: Re: [denr.dwq.dwqrules] Public Notice & Comment Period Announcement for Study of Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules

As solicited, please accept the following comments regarding the Neuse and Tar-Pamlico riparian buffer rules:

Item (i)

---The two separate set of rules, and any future watershed rules, need to be consolidated into one comprehensive rule. It is impossible for the regulated public to follow watershed rules that cross political boundaries as to consistency in their interpretation by NCDENR staff.

---These rules have significant impact to waterfront properties. Previous annual studies by NCDENR have shown little to no documented improvements to water quality. If there are no improvements then portions of these rules need to be curtailed or sunsetted in the future.

---Riparian buffer setbacks should begin from the mean high water mark or the ordinary high water mark, and then projected landward.

---Within a riparian buffer area, any vegetation that is <5 inches diameter breast height, should be allowed to be cleared without significant ground disturbances and left in a natural condition. New vigorous vegetative growth is capable of higher water and nutrient uptake.

Item (ii)

Full exemptions or grandfathering should be allowed for all properties that were deeded and recorded of the original effective date of the rule's origin. Otherwise vested property rights are violated.

Larry F. Baldwin, CPSS/Sc
(910) 471-0504

----- Original Message -----
From: denr.dwq.dwqrules@lists.ncmail.net
To: NCDENR.denr.dwq.dwqrules
Sent: Thursday, August 18, 2011 3:46 PM
Subject: [denr.dwq.dwqrules] Public Notice & Comment Period Announcement for Study of Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules

Please see the attachment for the information referenced in the Subject Line. You are receiving this message because you are subscribed to the NC Division of Water Quality (DWQ) Rules Listserv. To invite someone else to join this listserv, instruct them to send a blank email to DENR.DWQ.DWQrules-join@lists.ncmail.net. To unsubscribe, send a blank email to DENR.DWQ.DWQrules-leave@lists.ncmail.net.

The purpose of this Public Notice is outline below. This notice is available electronically at http://portal.ncdenr.org/web/wq/swp/ws/401/publicnotices.

Study of the Neuse and Tar-Pamlico Riparian Buffer Rules
The Department of the Environment and Natural Resources (DENR) has been directed by Section 17(e) of Session Law 2011-394 to study the application and implementation of the Neuse River Basin and Tar-Pamlico River Basin Riparian Buffer Rules. DENR is soliciting comments from interested parties regarding the following two items:

1. Whether the Neuse and Tar-Pamlico riparian buffer rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the two river basins; and
2. Exempting all single family residential lots platted prior to August 1, 2000.

The Neuse and Tar-Pamlico Buffer rules are available at:
http://portal.ncdenr.org/web/wq/swp/ws/401/riparianbuffers/rules.

A copy of Session Law 2011-394 is available at:
http://www.ncga.state.nc.us/Sessions/2011/Bills/House/PDF/H119v5.pdf.

Please submit any written comments on item (i) and/or (ii) listed above within 30 calendar days of the date of this letter to: Ms. Amy Chapman, Wetlands, Buffers, Stormwater – Compliance & Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650 or Amy.Chapman@ncdenr.gov. If you have any questions about the study, please contact Ms. Chapman at Amy.Chapman@ncdenr.gov or 919-807-6400.

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---

denr.dwq.dwqrules mailing list
denr.dwq.dwqrules@lists.ncmail.net

WARD AND SMITH, P.A.

FRANK H. SHEFFIELD, JR., Attorney at Law

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August 30, 2011

VIA EMAIL
ORIGINAL VIA U.S. MAIL

Ms. Amy Chapman
Wetlands, Buffers, Stormwater
Compliance & Permitting Unit
1650 Mail Service Center
Raleigh, NC 27699-1650
amy.chapman@ncdenr.gov

RE: Comments for Neuse River Basin and
Tar-Pamlico River Basin Riparian Buffer Rules Study
Our File 550089-00001

Dear Ms. Chapman:

Pursuant to the August 18, 2011, Public Notice regarding the Neuse and Tar-Pamlico Riparian Buffer Rules Study, please accept the following comments:

1. Convert all "Allowable" activities in the Table of Uses to "Regulation by Rule." This approach eliminates the need to have staff approve such activities, and will save considerable time and expense for property owners.

2. Exempt all single family residential lots platted before August 1, 2000. Current rules impose ex post facto requirements on lot owners, most of whom purchased such lots contemplating being able to construct in the buffer if necessary. Also, I believe any resulting environmental harm would be negligible for residential properties.

3. All variances should be handled at the staff level and should not require Environmental Management Commission approval. Staff is capable of evaluating the need and justification for both minor and major variances. This change would save considerable time and expense for property owners with no loss of environmental protection.

Yours very truly,

Frank Sheffield

Frank H. Sheffield, Jr.

FHS:kts
ND: 4824-8393-0378, v. 2
cc: Amy P. Wang, Esq.

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AUG 31 2011
DENR - WATER QUALITY
WETLANDS AND STORMWATER BRANCH

Chapman, Amy

From: Nick Santoro [sunbelt@coastalnet.com]
Sent: Saturday, August 20, 2011 11:39 AM
To: Chapman, Amy
Subject: Buffer Rule Comments and Suggestions

Dear Ms. Chapman:

Ms. Amy Chapman:

Re: Request for comments on Neuse River Buffer Rule Revision

Since the Neuse & Tar Pamlico Buffer Rules have been in place for more than a decade, more than 160 Variance Requests have been processed by DWQ personnel in Pamlico County alone and the prospect is that many more will be processed in the years ahead as owners of vacant lots attempt to build on their lots. All of these Variance Requests pertain to residential lots that were designed, approved, platted and recorded prior to the adoption of the Buffer Rules in August of 2000. Many of these lots have been purchased and sold several times since their creation and often the new owers have requested modifications to the Variances granted to previous owners, thereby creating and additional workloads for DWQ personnel and inconvenience for property owners over time. It is for this reason that lots created prior to the adoption of the Buffer Rules should be exempt from them.

Insead of requiring that owners of lots created prior to the Buffer Rules comply with then. Owners of such lots should be educated as to the need for controlling runoff and given a list of "suggestions" as to techniques they might use to reduce the impacts of runoff that they should consider when desiging their project. The list of suggestions should include the desirabilty of diverse flow, rain catchment devices, rain gardens, and other techniques in addition to the provisions of the Buffer Rules which were included in the Neuse and Tar Pamlico Buffer Rules which would remain as requirements for lots created after the adoption of the Buffer Rules in August of 2000. For owners of lots created prior to that date, the Buffer Rules would only be recommendations. These "suggestions" could be distributed by real estate attornys, building inspection depatments and real estate agents.

It should be noted that Pamlico County, one of the counties most impacted by the Buffer Rules, adopted a 75' set back measured from mean high water on all lots created outside of incorporated towns after January 26, 1990, more than a decade prior to the Neuse River Buffer Rules. For lots with lots with less than 25' of coastal vegetation, which is the vast majority of lots created in Pamlico County since January 26, 1990, this set back achieves an equal or greater benefit to the goal of reducing runoff. For lots that have little or no coastal vegetation the benefit is a full 50% greater setback than the Buffer Rules require. It should also be noted that to date, not one single Variance has been requested or granted to the 75' setback requirement, since all lots platted prior to January 26, 1990 were exempt.

What has caused the need for variances from the Buffer Rules in Pamlico County is the requirement for the same setback from coastal vegetation as from water combined with the fact that lots designed prior to the adoption of the Buffer Rules were not exempt from them. I have always understood that coastal vegetation performs many beneficial functions in absorbing runoff, filtering it, and providing habitat for many essential organisms, yet the Buffer Rules assign a value of zero to coastal vegetation in performing any of these functions, since the required set back from it is exactly the same as if it did not exist at all.

If the Buffer Rules are not ammended to exempt lots created prior the their adoption, the prospect is that the burden placed on DWQ personnel and property owners alike will continue for decades to come, not to mention the negative implications for property values, lending institutions and home builders at a time when our economy does not need any more negative impacts.

Please understand that it is not the Buffer Rules themselves that are being questioned here, it is the retroactive nature of their requirements. Any time any rule is designed to be retroactive, problems and hardships are aboud to arise.

Thanks for taking the time to read this.

Sincerely,

Nick Santoro, 36 Old Lupton Rd., Merritt, NC 28556 (252) 249-0823

Chapman, Amy

From: Donald Dambrosi [dambrosid111748@gmail.com]
Sent: Friday, August 19, 2011 12:34 PM
To: Chapman, Amy
Subject: Neuse and Tar Pamlico Buffers

Amy:

The rules need to be amended to clarify that these buffers are not "takings" rather they are set asides to promote water quality and as such the areas shall remain available for allowable residential density and any other transfer of uses that local governments may determine such as parking space reductions to accommodate non-residentail uses.

Many local governments are viewing the buffers as having been "taken" by the state and are therefore "gone" for developemnt utilization. As a result, some have then stated that density MAY NOT be transfered from the buffer area to other usable areas of the site.

I'm confident the EMC will see the logic in this as the State has NOT PROVIDED ANY "JUST" COMPENSATION to any land owner for such a taking.

A Clarification to ALL buffer rules should be made and in turn will be welcomed, in my opinion, by property owners and all consultants involved with Land Use Planning or Land Development.

I believe this can easily fall under the inquiry to study and possibly amend Section 17(e) of Session Law 2011-394 point (i)..."to achieve the same level of water quality protection while reducing the impact to riparian property owners.....".

Thank you

Don d'Ambrosi
d'Ambrosi Land Consulting services, LLC
275 Ferrell Road West
Apex, NC 27523
919-819-8272

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SEP 19 2011
DENR - WATER QUALITY
WETLANDS AND STORMWATER BRANCH

September 16, 2011

VIA E-MAIL TO:
Amy.Chapman@ncdenr.gov

VIA POSTAL SERVICE TO:
Amy Chapman
Wetlands, Buffers, Stormwater, Compliance and Permitting Unit
NCDENR / Division of Water Quality – Wetlands and Stormwater Branch
1650 Mail Service Center
Raleigh, NC 27699-1650

Re: PCS Phosphate Company, Inc. Proposed Findings and Recommendations for the DENR Report to the General Assembly on the Study of the Neuse and Tar-Pamlico Buffer Rules

Dear Ms. Chapman,

On August 18, 2011, the Department of Environment and Natural Resources issued a public notice soliciting public comments on the Department's study of the Neuse and Tar-Pamlico River Riparian Buffer Rule. PCS Phosphate Company, Inc. (PCS) understands the Department will report findings and recommendations to the Environmental Review Commission by February 1, 2012, pursuant to Session Law 2011-394. The Session Law states:

> The Department of Environment and Natural Resources shall study the application and implementation of ... the Tar-Pamlico River Basin Riparian Buffer Rule. The Department shall specifically consider: (i) whether the rules might be amended or implemented in a different way to achieve the same level of water quality protection while reducing the impact to riparian property owners in the river basins ....

S.L. 2011-394 § 17(e).

PCS is a riparian owner in the Tar-Pamlico River Basin. The Tar-Pamlico River Basin Riparian Buffer Rule significantly impacts our phosphate mine and operations in

Beaufort County. Accordingly, PCS has significant experience in operating a business under the various policies related to riparian buffer requirements and in carrying out substantial riparian buffer mitigation projects.

In response to the public notice, PCS provides this letter and encloses proposed findings and recommendations for consideration by the Department. In particular, PCS has identified two implementation changes and two rule amendments that would achieve the same level of water quality protection in the Tar-Pamlico River Basin while reducing the impact to PCS and other riparian property owners in the Tar-Pamlico River Basin.

The suggested implementation changes are for immediate, direct Department action and would include Department acceptance of the following buffer mitigation:

1) Alternative measures that reduce nutrient loading.
2) Coastal headwater stream buffer mitigation.

The suggested Tar-Pamlico River Basin Riparian Buffer Rule amendments are for EMC or General Assembly action:

1) Acceptance of the buffer mitigation location policy established by the General Assembly.
2) Correction of a codification error in the purpose statement that will protect riparian owners from having to defend against erroneous arguments about the purpose of the rule.

We have written the proposed findings and recommendations in a form and tone that would allow the Department, if it chooses to do so, to incorporate them directly into its study report. Consistent with our experience and knowledge base, we have only written findings and recommendations applicable to the Tar-Pamlico River Basin Riparian Buffer Rule. Thank you for your consideration of our proposed findings and recommendations for inclusion in your report to the General Assembly.

Sincerely,



Ross M. Smith
Manager, Environment and Energy
PotashCorp-Aurora (PCS Phosphate Company, Inc.)
1530 NC Hwy 306 South
Aurora, NC 27806

(O): 252-322-8270 (C): 252-916-3061
Fax: 252-322-4444
E-mail: rsmith@pcsphosphate.com

PCS Phosphate Company, Inc.
Proposed Findings and Recommendations
for the
DENR Report to the General Assembly:
Study of the Neuse and Tar-Pamlico Buffer Rules

IMPLEMENTATION CHANGES
(Direct Department Action)

1. Acceptance of Alternative Measures for Buffer Mitigation

1.1. Findings

The Tar-Pamlico Riparian Buffer Rule requires that persons who wish to undertake uses designated as "allowable with mitigation" obtain approval for a mitigation proposal. 15A NCAC 2B .0259(10)(b). The Department previously rejected mitigation proposals that include "[c]onstruction of an alternative measure that reduces nutrient loading." The Department previously viewed the General Assembly approval found in N.C. Gen. Stat. § 143-214.20(a2)(5) as insufficient because it was not accompanied by separate EMC approval (e.g., rulemaking, variance, etc.). The Department has reconsidered this matter of implementing and applying the existing statutes and rules and believes that it can and should begin accepting alternative measures for buffer mitigation – without additional EMC or General Assembly action. Acceptance of alternative measures would not change the level of water quality protection in the river basin, and would reduce impact to riparian property owners in the river basin by making more mitigation opportunities available.

1.2. Recommendation (Direct Department action)

The Department will accept, as mitigation proposals or components of mitigation proposals pursuant to 15A NCAC 2B .0259(10)(b), the construction of alternative measures that the Department reasonably expects to reduce nutrient loading.

2. Acceptance of Coastal Headwater Stream Buffers for Buffer Mitigation

2.1. Findings

The Department previously did not accept coastal headwater stream buffer mitigation ("CHSBM") for buffer mitigation to satisfy 15A NCAC 2B .0259(10)(b), based on the view that CHSBM is an "alternative measure" under N.C. Gen. Stat. § 143-214.20(a2)(5). Under Recommendation 1.2, alternative measures would be acceptable. However, even if Recommendation 1.2 were not adopted, CHSBM should be accepted. Upon reconsideration, the Department believes CHSBM is accurately categorized as traditional buffer mitigation, rather than an alternative measure that reduces nutrient loading. Coastal headwater streams have diffuse flow – a natural flow pattern in coastal headwater areas. CHSBM consists of naturally located and configured buffers on these streams. The Department has reconsidered this matter of implementing and applying the existing statutes and rules and believes that it can and should begin accepting CHSBM for buffer mitigation – without additional EMC or General Assembly action. The effectiveness of buffers like these for water quality protection is accepted for the same technical and scientific reasons that we have the buffer protection rules in the first place. Proof of their effectiveness is redundant and unnecessary. Acceptance of CHSBM would not change the level of water quality protection in the river basin, and would reduce impact to riparian property owners in the river basin by making more mitigation opportunities available.

2.2. Recommendation (Direct Department Action)

The Department will accept, as mitigation proposals or as components of buffer mitigation proposals pursuant to 15A NCAC 2B .0259(10)(b), coastal headwater stream buffer mitigation.

RULE AMENDMENTS
(EMC or General Assembly Action)

1. Acceptance of General Assembly Buffer Mitigation Location Policy

1.1. Findings

The Tar-Pamlico Buffer Rule requires that persons who wish to undertake uses designated as "allowable with mitigation" obtain approval for a mitigation proposal. 15A NCAC 2B .0259(10)(b). This requirement incorporates a mitigation location requirement (15A NCAC 2B .0260(4)), which has generated confusion and litigation. The Department has previously interpreted the requirement as restricting all mitigation to locations that are in the same 8-digit HUC as impacts. Some litigants have argued for an even more restrictive interpretation. However, the General Assembly's mitigation location policy only restricts one mitigation option to the same 8-digit HUC and otherwise accepts mitigation that is in the same river basin as impacts. N.C.G.S. § 143-214.20(a2)(1) (participation in a mitigation bank – is "only available" to private entities if the bank is located in the same 8-digit HUC as the impacts).

The amendment of 15A NCAC 2B .0259(10)(b) to accept the General Assembly mitigation policy would reduce impact to riparian property owners in the river basins by making more mitigation opportunities available, but would not change the level of water quality protection in the river basins.

1.2. Recommendation (Rule Amendment)

Amend 15A NCAC 2B .0259(10)(b) by adding the underscored text as follows:

> Obtain approval for a mitigation proposal pursuant to 15A NCAC 2B .0260, except that location of the mitigation effort, in lieu of satisfying 15A NCAC 2B .0260(4), may satisfy the applicable location requirement of N.C. Gen. Stat. § 143-214.20(a1)-(a2) (mitigation in same basin as impacts, but same hydrologic area for private party participation in compensatory mitigation bank).

2. Correction of Codified Version of Purpose Statement

2.1. Findings

The codified version of the purpose statement for the Tar-Pamlico River Riparian Buffer Rule, 15A NCAC 2B .0259(1), is not the version adopted by the EMC or considered by the public at rulemaking. Proposed text was published in the N.C. Register, but the EMC adopted different text. Following adoption, the EMC and DENR published the following:

> 15A NCAC 2B .0259 has been adopted as published in 14:3 NCR 171-182 with changes as follows:
>
> (1) PURPOSE. The purpose of this Rule shall be to protect and preserve existing riparian buffers to maintain their nutrient removal functions in the entire Tar-Pamlico River Basin ~~to maintain their nutrient removal functions~~ whose surface waters are described in the Schedule of Classifications, 15A NCAC 2B .0316.

See 1999 Report of Proceedings on Proposed Rules for Protection and Maintenance of Riparian Areas in the Tar-Pamlico River Basin, available at Univ. of N.C. at Greensboro Jackson Library (Call # NCDOC C25 9:T173). However, the codified version contains three unauthorized changes – the addition of three commas:

> PURPOSE. The purpose of this Rule shall be to protect and preserve existing riparian buffers, to maintain their nutrient removal functions, in the entire Tar-Pamlico River Basin, whose surface waters are described in the Schedule of Classifications, 15A NCAC 2B .0316.

15A NCAC 2B .0259(1). The codification error is apparent. As codified, 15A NCAC 2B .0259(1) is ungrammatical. Without the extra commas, 15A NCAC 2B .0259(1) is grammatical. More importantly, if the errors are not corrected, riparian property owners may have to defend against erroneous arguments that there are multiple purposes. Correction of the error would reduce impact to riparian property owners in the river basin by eliminating erroneous arguments, but would not change the level of water quality protection in the river basin.

2.2. Recommendation (Rule Amendment)

Amend 15A NCAC 2B .0259(1) by deleting the three unauthorized, extra commas.

Grading and revegetating Zone 2 is allowed provided that the health of the vegetation in Zone 1 is not compromised, the ground is stabilized and existing diffuse flow is maintained.

(ii) At the time an existing use is proposed to be converted to another use, this Rule shall apply. An existing use shall be considered to be converted to another use if any of the following applies:

(A) Impervious surface is added to the riparian buffer in locations where it did not exist previously.

(B) An agricultural operation within the riparian buffer is converted to a non-agricultural use.

(C) A lawn within the riparian buffer ceases to be maintained.

(4) ZONES OF THE RIPARIAN BUFFER. The protected riparian buffer shall have two zones as follows:

(a) Zone 1 shall consist of a vegetated area that is undisturbed except for uses provided for in Item (6) of this Rule. The location of Zone 1 shall be as follows:

(i) For intermittent and perennial streams, Zone 1 shall begin at the most landward limit of the top of bank or the rooted herbaceous vegetation and extend landward a distance of 30 feet on all sides of the surface water, measured horizontally on a line perpendicular to the surface water.

(ii) For ponds, lakes and reservoirs located within a natural drainage way, Zone 1 shall begin at the most landward limit of the normal water level or the rooted herbaceous vegetation and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to the surface water.

(iii) For surface waters within the 20 Coastal Counties (defined in 15A NCAC 2B .0202) within the jurisdiction of the Division of Coastal Management, Zone 1 shall begin at the most landward limit of:

(A) the normal high water level;

(B) the normal water level; or

(C) the landward limit of coastal wetlands as defined by the Division of Coastal Management;

and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to the surface water, whichever is more restrictive.

(b) Zone 2 shall consist of a stable, vegetated area that is undisturbed except for activities and uses provided for in Item (6) of this Rule. Grading and revegetating Zone 2 is allowed provided that the health of the vegetation in Zone 1 is not compromised. Zone 2 shall begin at the outer edge of Zone 1 and extend landward 20 feet as measured horizontally on a line perpendicular to the surface water. The combined width of Zones 1 and 2 shall be 50 feet on all sides of the surface water.

(5) DIFFUSE FLOW REQUIREMENT. Diffuse flow of runoff shall be maintained in the riparian buffer by dispersing concentrated flow and reestablishing vegetation.

(a) Concentrated runoff from new ditches or manmade conveyances shall be converted to diffuse flow before the runoff enters the Zone 2 of the riparian buffer.

(b) Periodic corrective action to restore diffuse flow shall be taken if necessary to impede the formation of erosion gullies.

(6) TABLE OF USES. The following chart sets out the uses and their designation under this Rule as exempt, allowable, allowable with mitigation, or prohibited. The requirements for each category are given in Item (7) of this Rule.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Airport facilities: • Airport facilities that impact equal to or less than 150 linear feet or one-third of an acre of riparian buffer • Airport facilities that impact greater than 150 linear feet or one-third of an acre of riparian buffer		X	X	
Archaeological activities	X			

Bridges		X		
Dam maintenance activities	X			
Drainage ditches, roadside ditches and stormwater outfalls through riparian buffers: • Existing drainage ditches, roadside ditches, and stormwater outfalls provided that they are managed to minimize the sediment, nutrients and other pollution that convey to waterbodies • New drainage ditches, roadside ditches and stormwater outfalls provided that a stormwater management facility is installed to control nitrogen and attenuate flow before the conveyance discharges through the riparian buffer • New drainage ditches, roadside ditches and stormwater outfalls that do not provide control for nitrogen before discharging through the riparian buffer • Excavation of the streambed in order to bring it to the same elevation as the invert of a ditch	X	X		X X
Drainage of a pond in a natural drainage way provided that a new riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the new channel	X			
Driveway crossings of streams and other surface waters subject to this Rule: • Driveway crossings on single family residential lots that disturb equal to or less than 25 linear feet or 2,500 square feet of riparian buffer • Driveway crossings on single family residential lots that disturb greater than 25 linear feet or 2,500 square feet of riparian buffer • In a subdivision that cumulatively disturb equal to or less than 150 linear feet or one-third of an acre of riparian buffer • In a subdivision that cumulatively disturb greater than 150 linear feet or one-third of an acre of riparian buffer	X	X X	X	
Fences provided that disturbance is minimized and installation does not result in removal of forest vegetation	X			
Forest harvesting - see Item (11) of this Rule				
Fertilizer application: • One-time fertilizer application to establish replanted vegetation • Ongoing fertilizer application	X			X
Grading and revegetation in Zone 2 only provided that diffuse flow and the health of existing vegetation in Zone 1 is not compromised and disturbed areas are stabilized	X			
Greenway/hiking trails		X		
Historic preservation	X			
Landfills as defined by G.S. 130A-290				X
Mining activities:				

- A minimum zone of 10 feet wide immediately adjacent to the water body shall be managed such that only vegetation that poses a hazard or has the potential to grow tall enough to interfere with the line is removed.
- Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.
- Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain where trees are cut.
- Rip rap shall not be used unless it is necessary to stabilize a tower.
- No fertilizer shall be used other than a one-time application to re-establish vegetation.
- Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.
- Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
- In wetlands, mats shall be utilized to minimize soil disturbance.

[2] Provided that poles or towers shall not be installed within 10 feet of a water body unless the Division completes a no practical alternatives evaluation.

[3] Perpendicular crossings are those that intersect the surface water at an angle between 75 degrees and 105 degrees.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Playground equipment: • Playground equipment on single family lots provided that installation and use does not result in removal of vegetation • Playground equipment installed on lands other than single-family lots or that requires removal of vegetation	X	X		
Ponds in natural drainage ways, excluding dry ponds: • New ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the pond • New ponds where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the pond		X	X	
Protection of existing structures, facilities and streambanks when this requires additional disturbance of the riparian buffer or the stream channel		X		
Railroad impacts other than crossings of streams and other surface waters subject to this Rule			X	
Railroad crossings of streams and other surface waters subject to this Rule: • Railroad crossings that impact equal to or less than 40 linear feet of riparian buffer • Railroad crossings that impact greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer • Railroad crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer	X	X	X	
Removal of previous fill or debris provided that diffuse flow is maintained and any vegetation removed is restored	X			
Road impacts other than crossings of streams and other			X	

• Mining activities that are covered by the Mining Act provided that new riparian buffers that meet the requirements of Items (4) and (5) of this Rule are established adjacent to the relocated channels		X		
• Mining activities that are not covered by the Mining Act OR where new riparian buffers that meet the requirements or Items (4) and (5) of this Rule are not established adjacent to the relocated channels			X	
• Wastewater or mining dewatering wells with approved NPDES permit	X			
Non-electric utility lines:				
• Impacts other than perpendicular crossings in Zone 2 only[3]		X		
• Impacts other than perpendicular crossings in Zone 1[3]			X	
Non-electric utility line perpendicular crossing of streams and other surface waters subject to this Rule[3]:				
• Perpendicular crossings that disturb equal to or less than 40 linear feet of riparian buffer with a maintenance corridor equal to or less than 10 feet in width	X			
• Perpendicular crossings that disturb greater than 40 linear feet of riparian buffer with a maintenance corridor greater than 10 feet in width		X		
• Perpendicular crossings that disturb greater than 40 linear feet but equal to or less than 150 linear feet of riparian buffer with a maintenance corridor equal to or less than 10 feet in width		X		
• Perpendicular crossings that disturb greater than 40 linear feet but equal to or less than 150 linear feet of riparian buffer with a maintenance corridor greater than 10 feet in width			X	
• Perpendicular crossings that disturb greater than 150 linear feet of riparian buffer			X	
On-site sanitary sewage systems - new ones that use ground absorption				X
Overhead electric utility lines:				
• Impacts other than perpendicular crossings in Zone 2 only[3]	X			
• Impacts other than perpendicular crossings in Zone 1[1,2,3]	X			
Overhead electric utility line perpendicular crossings of streams and other surface waters subject to this Rule[3]				
• Perpendicular crossings that disturb equal to or less than 150 linear feet of riparian buffer[1]	X			
• Perpendicular crossings that disturb greater than 150 linear feet of riparian buffer[1,2]		X		
Periodic maintenance of modified natural streams such as canals and a grassed travelway on one side of the surface water when alternative forms of maintenance access are not practical		X		

[1] Provided that, in Zone 1, all of the following BMPs for overhead utility lines are used. If all of these BMPs are not used, then the overhead utility lines shall require a no practical alternatives evaluation by the Division.

• Perpendicular crossings that disturb less than or equal to 40 linear feet of riparian buffer[3,4] • Perpendicular crossings that disturb greater than 40 linear feet of riparian buffer[3,4]	X	X		

[4] Provided that, in Zone 1, all of the following BMPs for underground utility lines are used. If all of these BMPs are not used, then the underground utility line shall require a no practical alternatives evaluation by the Division.

- Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.
- Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain, except in the trench, where trees are cut.
- Underground cables shall be installed by vibratory plow or trenching.
- The trench shall be backfilled with the excavated soil material immediately following cable installation.
- No fertilizer shall be used other than a one-time application to re-establish vegetation.
- Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.
- Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
- In wetlands, mats shall be utilized to minimize soil disturbance.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Vegetation management: • Emergency fire control measures provided that topography is restored • Periodic mowing and harvesting of plant products in Zone 2 only • Planting vegetation to enhance the riparian buffer • Pruning forest vegetation provided that the health and function of the forest vegetation is not compromised • Removal of individual trees which are in danger of causing damage to dwellings, other structures or human life • Removal of poison ivy • Removal of understory nuisance vegetation as defined in: Smith, Cherri L. 1998. Exotic Plant Guidelines. Department of Environment and Natural Resources. Division of Parks and Recreation. Raleigh, NC. Guideline #30	X X X X X X X			
Water dependent structures as defined in 15A NCAC 2B .0202		X		
Water supply reservoirs: • New reservoirs provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the reservoir • New reservoirs where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the reservoir		X	X	
Water wells	X			
Wetland restoration	X			

surface waters subject to this Rule				
Road crossings of streams and other surface waters subject to this Rule: • Road crossings that impact equal to or less than 40 linear feet of riparian buffer • Road crossings that impact greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer • Road crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer	X	X	X	
Scientific studies and stream gauging	X			
Stormwater management ponds excluding dry ponds: • New stormwater management ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the pond • New stormwater management ponds where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the pond		X	X	
Stream restoration	X			
Streambank stabilization		X		
Temporary roads: • Temporary roads that disturb less than or equal to 2,500 square feet provided that vegetation is restored within six months of initial disturbance • Temporary roads that disturb greater than 2,500 square feet provided that vegetation is restored within six months of initial disturbance • Temporary roads used for bridge construction or replacement provided that restoration activities, such as soil stabilization and revegetation, are conducted immediately after construction	X	X X		
Temporary sediment and erosion control devices: • In Zone 2 only provided that the vegetation in Zone 1 is not compromised and that discharge is released as diffuse flow in accordance with Item (5) of this Rule • In Zones 1 and 2 to control impacts associated with uses approved by the Division or that have received a variance provided that sediment and erosion control for upland areas is addressed to the maximum extent practical outside the buffer • In-stream temporary erosion and sediment control measures for work within a stream channel	X X	X		
Underground electric utility lines: • Impacts other than perpendicular crossings in Zone 2 only[3] • Impacts other than perpendicular crossings in Zone 1[3,4]	X X			
Underground electric utility line perpendicular crossings of streams and other surface waters subject to this Rule:[3]				

APPENDIX 2

(a) Zone 1 shall consist of a vegetated area that is undisturbed except for uses provided for in Item (6) of this Rule. The location of Zone 1 shall be as follows:

(i) For intermittent and perennial streams, Zone 1 shall begin at the most landward limit of the top of bank or the rooted herbaceous vegetation and extend landward a distance of 30 feet on all sides of the surface water, measured horizontally on a line perpendicular to the surface water.

(ii) For ponds, lakes and reservoirs located within a natural drainage way, Zone 1 shall begin at the most landward limit of the normal water level or the rooted herbaceous vegetation and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to the surface water.

(iii) For surface waters within the 20 Coastal Counties (defined in 15A NCAC 2B .0202) within the jurisdiction of the Division of Coastal Management, Zone 1 shall begin at the most landward limit of:

(A) the normal high water level;

(B) the normal water level; or

(C) the landward limit of coastal wetlands as defined by the Division of Coastal Management;

and extend landward a distance of 30 feet, measured horizontally on a line perpendicular to the surface water, whichever is more restrictive.

(b) Zone 2 shall consist of a stable, vegetated area that is undisturbed except for activities and uses provided for in Item (6) of this Rule. Grading and revegetating Zone 2 is allowed provided that the health of the vegetation in Zone 1 is not compromised. Zone 2 shall begin at the outer edge of Zone 1 and extend landward 20 feet as measured horizontally on a line perpendicular to the surface water. The combined width of Zones 1 and 2 shall be 50 feet on all sides of the surface water.

(5) DIFFUSE FLOW REQUIREMENT. Diffuse flow of runoff shall be maintained in the riparian buffer by dispersing concentrated flow and reestablishing vegetation.

(a) Concentrated runoff from new ditches or manmade conveyances shall be converted to diffuse flow before the runoff enters Zone 2 of the riparian buffer.

(b) Periodic corrective action to restore diffuse flow shall be taken if necessary to impede the formation of erosion gullies.

(6) TABLE OF USES. The following chart sets out the uses and their designation under this Rule as exempt, allowable, allowable with mitigation, or prohibited. The requirements for each category are given in Item (7) of this Rule.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Airport facilities: • Airport facilities that impact equal to or less than 150 linear feet or one-third of an acre of riparian buffer • Airport facilities that impact greater than 150 linear feet or one-third of an acre of riparian buffer		X	X	
Archaeological activities	X			
Bridges		X		
Dam maintenance activities	X			
Drainage ditches, roadside ditches and stormwater outfalls through riparian buffers: • Existing drainage ditches, roadside ditches, and stormwater outfalls provided that they are managed to minimize the sediment, nutrients and other pollution that convey to waterbodies • New drainage ditches, roadside ditches and stormwater outfalls provided that a stormwater management facility is installed to control nitrogen and attenuate flow before the conveyance	X	X		

discharges through the riparian buffer • New drainage ditches, roadside ditches and stormwater outfalls that do not provide control for nitrogen before discharging through the riparian buffer • Excavation of the streambed in order to bring it to the same elevation as the invert of a ditch				X X
Drainage of a pond in a natural drainage way provided that a new riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the new channel	X			
Driveway crossings of streams and other surface waters subject to this Rule: • Driveway crossings on single family residential lots that disturb equal to or less than 25 linear feet or 2,500 square feet of riparian buffer • Driveway crossings on single family residential lots that disturb greater than 25 linear feet or 2,500 square feet of riparian buffer • In a subdivision that cumulatively disturb equal to or less than 150 linear feet or one-third of an acre of riparian buffer • In a subdivision that cumulatively disturb greater than 150 linear feet or one-third of an acre of riparian buffer	X	X X	X	
Fences provided that disturbance is minimized and installation does not result in removal of forest vegetation	X			
Forest harvesting - see Item (11) of this Rule				
Fertilizer application: • One-time fertilizer application to establish replanted vegetation • Ongoing fertilizer application	X			X
Grading and revegetation in Zone 2 only provided that diffuse flow and the health of existing vegetation in Zone 1 is not compromised and disturbed areas are stabilized	X			
Greenway / hiking trails		X		
Historic preservation	X			
Landfills as defined by G..S. 130A-290.				X
Mining activities: • Mining activities that are covered by the Mining Act provided that new riparian buffers that meet the requirements of Items (4) and (5) of this Rule are established adjacent to the relocated channels • Mining activities that are not covered by the Mining Act OR where new riparian buffers that meet the requirements or Items (4) and (5) of this Rule are not established adjacent to the relocated channels • Wastewater or mining dewatering wells with approved NPDES permit	X	X	X	
Non-electric utility lines: • Impacts other than perpendicular crossings in Zone 2		X		

only[3] • Impacts other than perpendicular crossings in Zone 1[3]			X	
Non-electric utility line perpendicular crossings of streams and other surface waters subject to this Rule[3]: • Perpendicular crossings that disturb equal to or less than 40 linear feet of riparian buffer with a maintenance corridor equal to or less than 10 feet in width • Perpendicular crossings that disturb equal to or less than 40 linear feet of riparian buffer with a maintenance corridor greater than 10 feet in width • Perpendicular crossings that disturb greater than 40 linear feet but equal to or less than 150 linear feet of riparian buffer with a maintenance corridor equal to or less than 10 feet in width • Perpendicular crossings that disturb greater than 40 linear feet but equal to or less than 150 linear feet of riparian buffer with a maintenance corridor greater than 10 feet in width • Perpendicular crossings that disturb greater than 150 linear feet of riparian buffer	X	X X	X X	
On-site sanitary sewage systems B new ones that use ground absorption				X
Overhead electric utility lines: • Impacts other than perpendicular crossings in Zone 2 only[3] • Impacts other than perpendicular crossings in Zone 1[1,2,3]	X X			
Overhead electric utility line perpendicular crossings of streams and other surface waters subject to this Rule[3]: • Perpendicular crossings that disturb equal to or less than 150 linear feet of riparian buffer [1] • Perpendicular crossings that disturb greater than 150 linear feet of riparian buffer [1,2]	X	X		
Periodic maintenance of modified natural streams such as canals and a grassed travelway on one side of the surface water when alternative forms of maintenance access are not practical		X		

[1] Provided that, in Zone 1, all of the following BMPs for overhead utility lines are used. If all of these BMPs are not used, then the overhead utility lines shall require a no practical alternative evaluation by the Division.

- A minimum zone of 10 feet wide immediately adjacent to the water body shall be managed such that only vegetation that poses a hazard or has the potential to grow tall enough to interfere with the line is removed.
- Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.
- Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain where trees are cut.
- Rip rap shall not be used unless it is necessary to stabilize a tower.
- No fertilizer shall be used other than a one-time application to re-establish vegetation.
- Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.

- Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
- In wetlands, mats shall be utilized to minimize soil disturbance.

[2] Provided that poles or towers shall not be installed within 10 feet of a water body unless the Division completes a no practical alternative evaluation.

[3] Perpendicular crossings are those that intersect the surface water at an angle between 75° and 105°.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Playground equipment: • Playground equipment on single family lots provided that installation and use does not result in removal of vegetation • Playground equipment installed on lands other than single-family lots or that requires removal of vegetation	X	X		
Ponds in natural drainage ways, excluding dry ponds: • New ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the pond • New ponds where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the pond		X	X	
Protection of existing structures, facilities and streambanks when this requires additional disturbance of the riparian buffer or the stream channel		X		
Railroad impacts other than crossings of streams and other surface waters subject to this Rule.			X	
Railroad crossings of streams and other surface waters subject to this Rule: • Railroad crossings that impact equal to or less than 40 linear feet of riparian buffer • Railroad crossings that impact greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer • Railroad crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer	X	X	X	
Removal of previous fill or debris provided that diffuse flow is maintained and any vegetation removed is restored	X			
Road impacts other than crossings of streams and other surface waters subject to this Rule			X	
Road crossings of streams and other surface waters subject to this Rule: • Road crossings that impact equal to or less than 40 linear feet of riparian buffer • Road crossings that impact greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer	X	X		

• Road crossings that impact greater than 150 linear feet or one-third of an acre of riparian buffer			X	
Scientific studies and stream gauging	X			
Stormwater management ponds excluding dry ponds: • New stormwater management ponds provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the pond • New stormwater management ponds where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the pond		X	X	
Stream restoration	X			
Streambank stabilization		X		
Temporary roads: • Temporary roads that disturb less than or equal to 2,500 square feet provided that vegetation is restored within six months of initial disturbance • Temporary roads that disturb greater than 2,500 square feet provided that vegetation is restored within six months of initial disturbance • Temporary roads used for bridge construction or replacement provided that restoration activities such as soil stabilization and revegetation, occur immediately after construction	X	X X		
Temporary sediment and erosion control devices: • In Zone 2 only provided that the vegetation in Zone 1 is not compromised and that discharge is released as diffuse flow in accordance with Item (5) of this Rule • In Zones 1 and 2 to control impacts associated with uses approved by the Division or that have received a variance provided that sediment and erosion control for upland areas is addressed to the maximum extent practical outside the buffer • In-stream temporary erosion and sediment control measures for work within a stream channel	X X	X		
Underground electric utility lines: • Impacts other than perpendicular crossings in Zone 2 only[3] • Impacts other than perpendicular crossings in Zone 1[4]	X X			
Underground electric utility line perpendicular crossings of streams and other surface waters subject to this Rule: • Perpendicular crossings that disturb less than or equal to 40 linear feet of riparian buffer[4] • Perpendicular crossings that disturb greater than 40 linear feet of riparian buffer[4]	X	X		

[4] Provided that, in Zone 1, all of the following BMPs for underground utility lines are used. If all of these BMPs are not used, then the underground utility line shall require a no practical alternative evaluation by the Division.

- Woody vegetation shall be cleared by hand. No land grubbing or grading is allowed.

- Vegetative root systems shall be left intact to maintain the integrity of the soil. Stumps shall remain, except in the trench, where trees are cut.
- Underground cables shall be installed by vibratory plow or trenching.
- The trench shall be backfilled with the excavated soil material immediately following cable installation.
- No fertilizer shall be used other than a one-time application to re-establish vegetation.
- Construction activities shall minimize the removal of woody vegetation, the extent of the disturbed area, and the time in which areas remain in a disturbed state.
- Active measures shall be taken after construction and during routine maintenance to ensure diffuse flow of stormwater through the buffer.
- In wetlands, mats shall be utilized to minimize soil disturbance.

	Exempt	Allowable	Allowable with Mitigation	Prohibited
Vegetation management:				
• Emergency fire control measures provided that topography is restored	X			
• Periodic mowing and harvesting of plant products in Zone 2 only	X			
• Planting vegetation to enhance the riparian buffer	X			
• Pruning forest vegetation provided that the health and function of the forest vegetation is not compromised	X			
• Removal of individual trees which are in danger of causing damage to dwellings, other structures or human life	X			
• Removal or poison ivy	X			
• Removal of understory nuisance vegetation as defined in: Smith, Cherri L. 1998. Exotic Plant Guidelines. Dept. of Environment and Natural Resources. Division of Parks and Recreation. Raleigh, NC. Guideline #30	X			
Water dependent structures as defined in 15A NCAC 2B .0202		X		
Water supply reservoirs:				
• New reservoirs provided that a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is established adjacent to the reservoir		X		
• New reservoirs where a riparian buffer that meets the requirements of Items (4) and (5) of this Rule is NOT established adjacent to the reservoir			X	
Water wells	X			
Wetland restoration	X			

(7) REQUIREMENTS FOR CATEGORIES OF USES. Uses designated as exempt, allowable, allowable with mitigation and prohibited in Item (6) of this Rule shall have the following requirements:

(a) EXEMPT. Uses designated as exempt are allowed within the riparian buffer. Exempt uses shall be designed, constructed and maintained to minimize soil disturbance and to provide the maximum water quality protection practicable. In addition, exempt uses shall meet requirements listed in Item (6) of this Rule for the specific use.

(b) ALLOWABLE. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this Rule. These uses require written authorization from the Division or the delegated local authority.

DENR Customer Feedback for Regulatory Improvement

February 23, 2012
Environmental Review Commission

DEAO
Division of Environmental Assistance and Outreach

Steps Toward Regulatory Improvement:

- DENR Listening Sessions
- Environmental Assistance Center
- Permit Improvement Workgroup

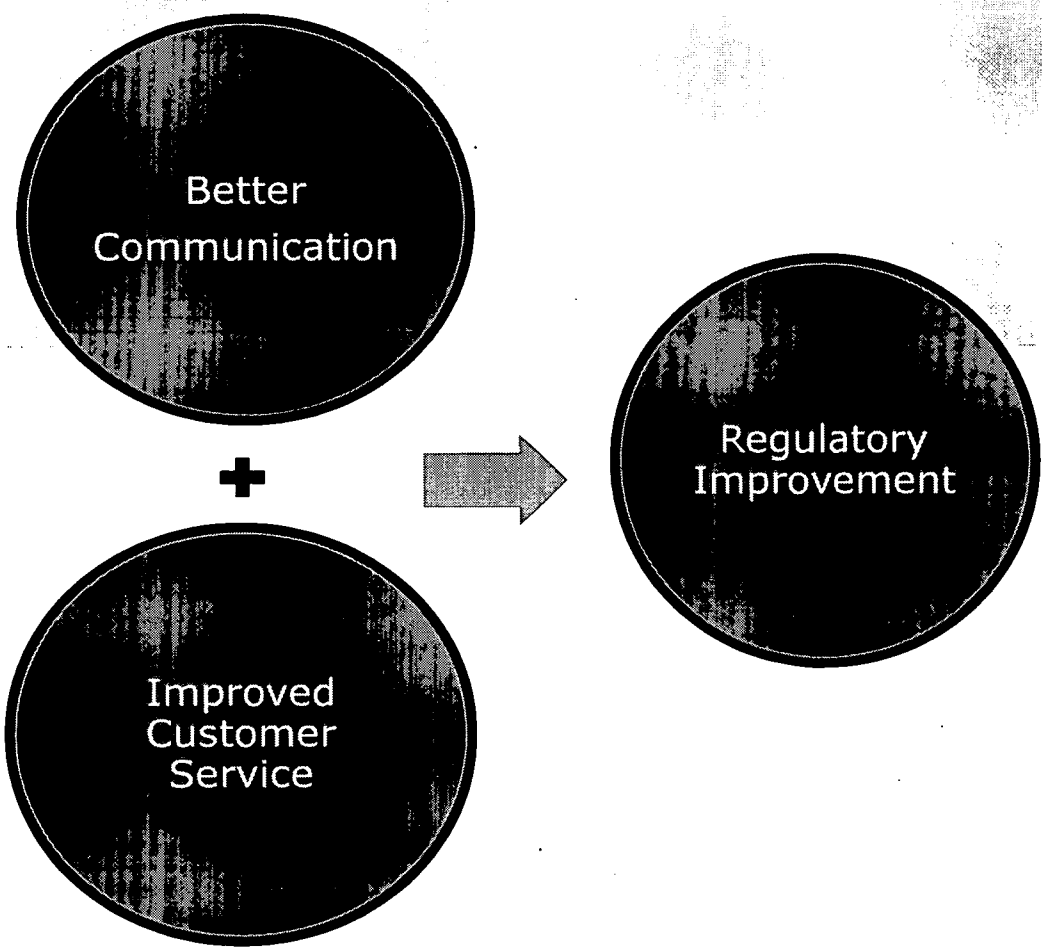
Listening Sessions:

- 18 across the state
- DENR Staff/External Customers
- Participants invited – Experience with agency and programs
- More than 900 comments

Web-based Survey:

- 203 External Responses
- 98 Internal Responses

Overview of Listening Sessions:



TOPICS:

- Training
- Outreach
- Consistency
- Permit review
- The Economy
- Feedback
- Internal process
- Legislative
- Customer Service
- Morale/Complaint
- Other
- Website/IT
- Budget/Supplies
- Communication

Major Topics - TOP 4

- Customer Service
- Internal Process
- Outreach/Communication
- Permit Review

Customer Service:

More face time

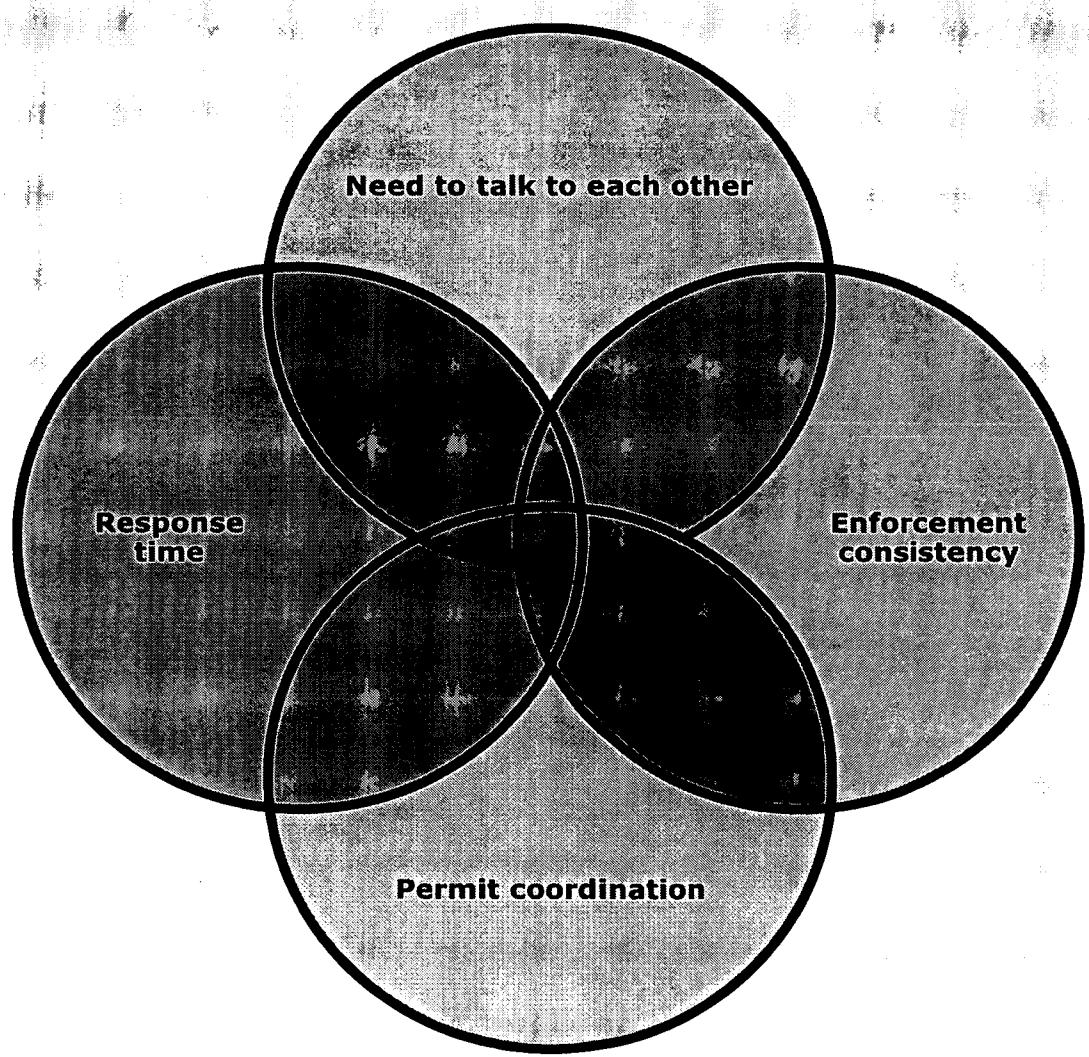
Positive feedback

Workshops/training

Phone issues

Express review is good customer service

Internal Process:



Communication/Outreach:

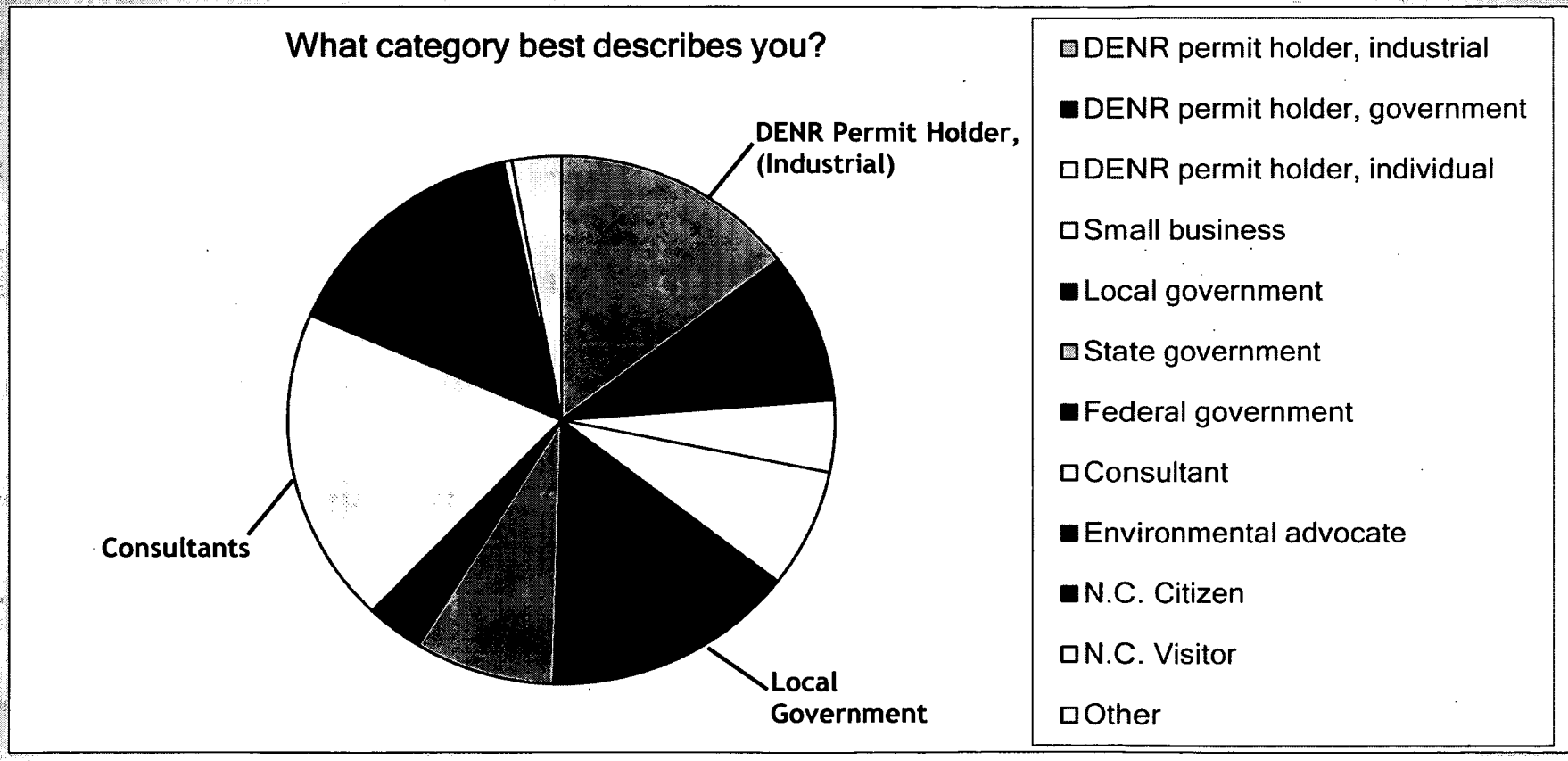
- Stakeholder input
- Improve website
- Training on new rules/ procedures (not just in Raleigh)
- Explain "why" of rules

Permit Review:

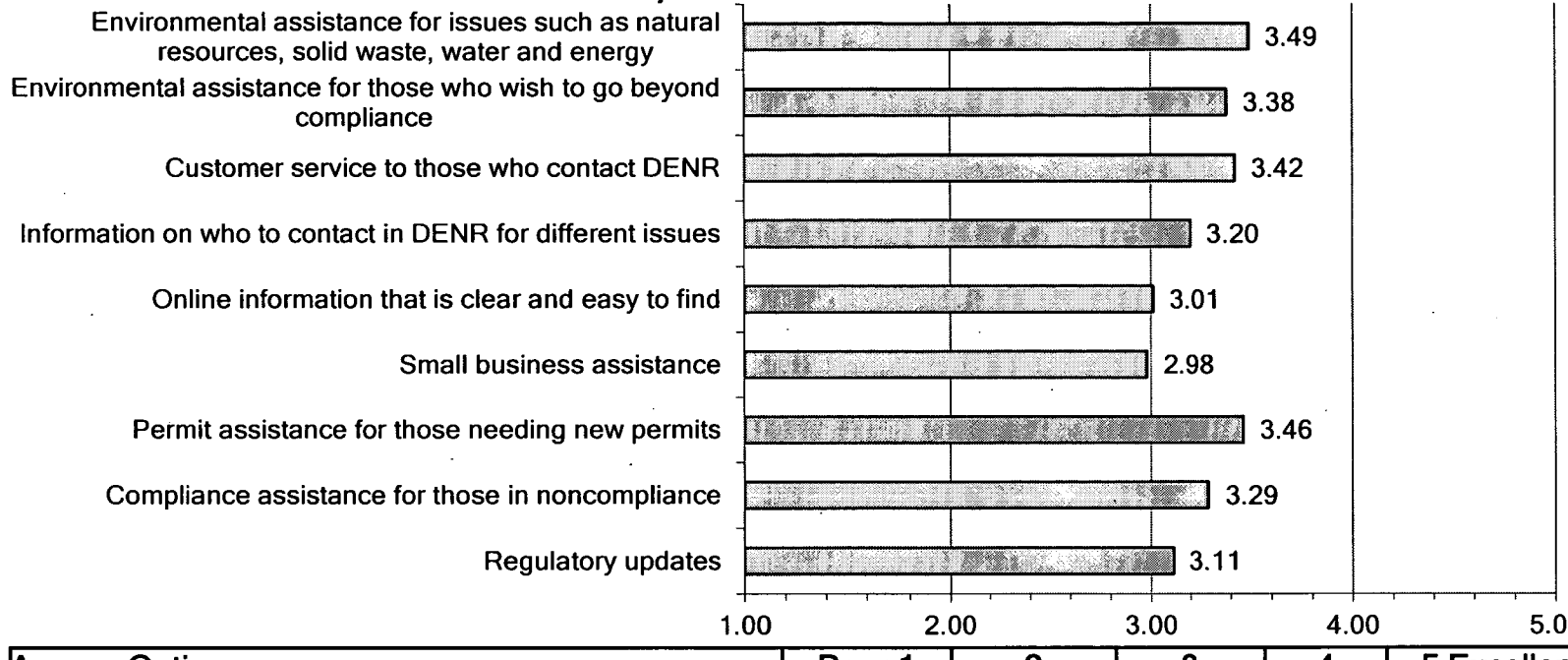
- Forms/process are confusing
- Electronic submission
- Cross training
- Need for flexibility

External Survey

- 203 External Responses
- **Who responded?**



Based on your experience, please rate the efforts of DENR in providing the following assistance to its customers on a scale of 1 to 5, where 5 is excellent:

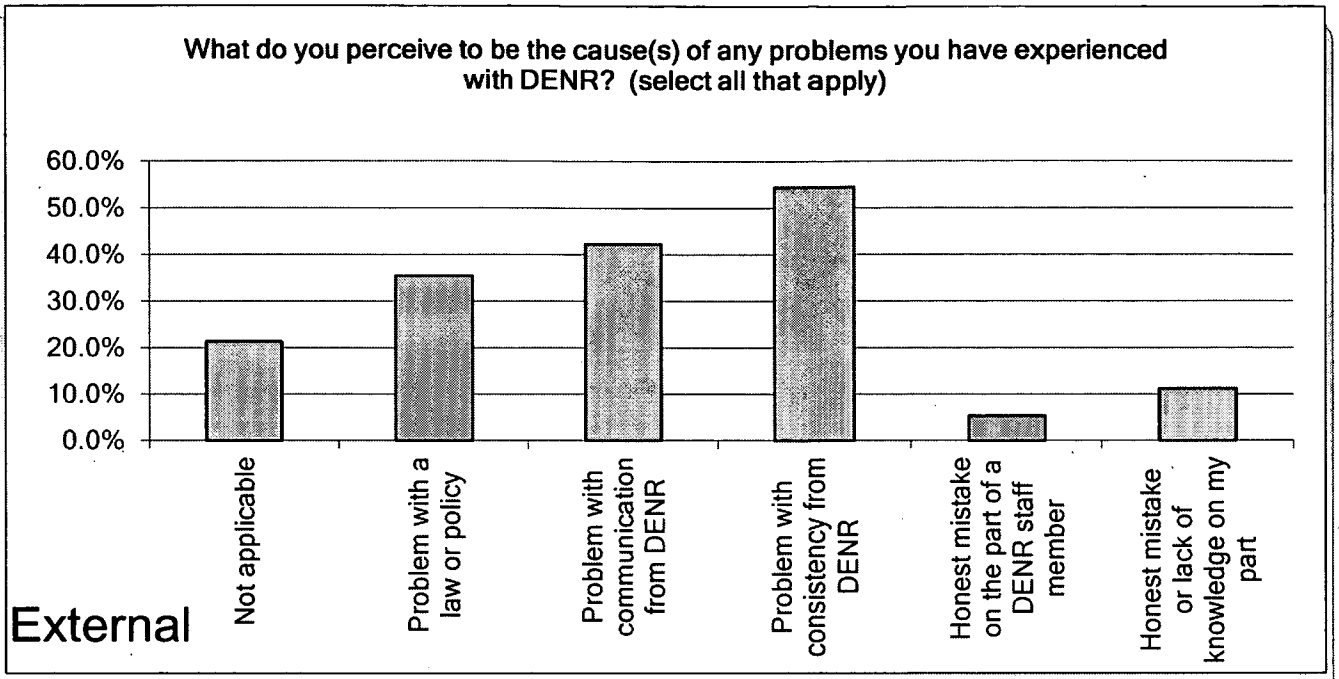


Answer Options	Poor 1	2	3	4	5 Excellent
Regulatory updates	26	34	48	43	32
Compliance assistance for those in noncompliance	20	28	33	50	33
Permit assistance for those needing new permits	18	24	33	51	43
Small business assistance	13	8	19	5	14
Online information that is clear and easy to find	28	34	54	56	18
Information on who to contact in DENR for different issues	21	32	57	53	30
Customer service to those who contact DENR	20	21	47	56	41
Env. assistance for those who wish to go beyond compliance	16	21	20	37	32
Env. assistance for issues such as natural resources, solid waste, water and energy	16	27	32	47	47
Total	178	229	343	398	290

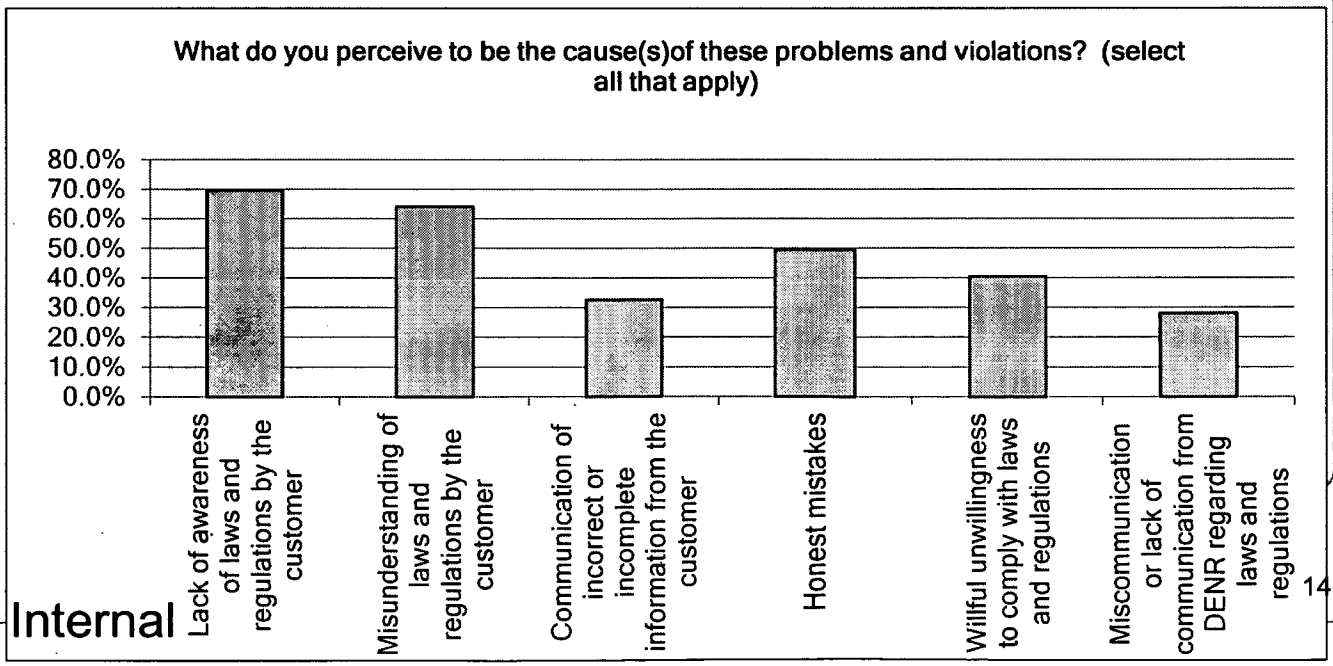
Causes of perceived problems

Note: different answers, scales!

External



Internal



Environmental Assistance Center

DENR Environmental Assistance Center

- Customer Focused
- Non-regulatory
- Regional one stop/Raleigh technical staff
- Proactive permit and compliance information and assistance
- Cost savings compliance options
- Customized assistance

Permit Workgroup Recommendations:

- Technological Improvements
- Training
- Better coordination and communication

Action Areas:

- Training
- E-permitting
- Customer Service

What's Next?

- Share with Division Directors'/Policy Makers - January-February
- Finalize report with recommendations - February-March
- Report back on actions taken - May
- Follow-up with customers - Spring 2012
- Addressing issues - Ongoing

DEAO

- Edythe McKinney, Division Director
  919-707-8111 or edythe.mckinney@ncdenr.gov

- Website: NCEnvironmentalAssistance.org

- Telephone Number: 1-877-623-6748 (toll-free)

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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REPRESENTATIVE RUTH SAMUELSON

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SUSAN PHILLIPS
COMMISSION CLERKS

February 23, 2012

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on January 26, 2012. All reports are available online on the Commission website: **(http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received)**. If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or **mariahm@ncleg.net** for assistance.

A. The following report has been submitted by the Department of Environment and Natural Resources (DENR) and is being distributed in connection with today's agenda as follows:

Report on Neuse and Tar-Pamlico River Basin Buffer Rules. February 1, 2012. Authority: S.L. 2011-394, Sec. 17(e). ***Agenda Item #4***

B. The following report has been submitted by DENR and may be distributed in conjunction with a presentation at a future meeting of the Commission.

Report on stormwater requirements for airports in the State. February 1, 2012. Authority: S.L. 2011-394, Sec. 20.

C. The following report has been submitted by the Environmental Management Commission (EMC) and may be distributed in conjunction with a presentation at a future meeting of the Commission.

Quarterly reports by the EMC as to its operations, activities, programs, and progress during the previous quarters. January 15, 2012. Statutory Authority: G.S. 143B-282(b).

D. The following report has been submitted by the North Carolina Water Quality Work Group (RiverNet) and may be distributed in conjunction with a presentation at a future meeting of the Commission.

Annual report on RiverNet's previous year's activities, findings, and recommendations. January 30, 2012. Statutory Authority: G.S. 143-215.8D.

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
March 22, 2012

The Environmental Review Commission (ERC) met on Thursday, March 22, 2012 at 9:30 a.m. in Room 544 of the Legislative Office Building. Senator Rouzer presided.

The following members were present: Senator David Rouzer, Co-Chair, Representative Mitch Gillespie, Co-Chair, Representative Ruth Samuelson, Co-Chair, Senators Stan Bingham, Don East, Fletcher Hartsell, Brent Jackson, Bill Rabon, Representatives Joe Hackney, Pat McElraft, and Chuck McGrady. Mr. Jeff Hudson and Ms. Jennifer McGinnis, Commission Counsels; Ms. Jennifer Mundt, Commission Analyst; and Ms. Mariah Matheson, Research Assistant; Ms. Sarah Neunzig, Commission Clerk; Sergeants-at-Arms Fred Hine, Bill Bass, Martha Parrest, Billy Fritcher, Steve Wilson, and Ken Kirby also attended. Attachments #1 and #2.

On March 7, 2012, notice was sent to members and interested parties via e-mail. An additional reminder e-mail was sent on March 16, 2012. Copies of the notices are included in the attachments to these minutes as Attachments #3 and #4. Copies of the agenda for the meeting, visitor registration sheets, and a memorandum regarding the disposition of reports are included in the attachments to these minutes as Attachments #5, #6 and #7 respectively.

Call to order and introductory remarks

Senator Rouzer called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized his Co-Chairs, Representative Gillespie and Representative Samuelson, for introductory remarks.

Approval of the minutes for the December 14, 2011 meeting of the Commission

Senator Bingham offered a motion to approve the minutes. The Commission as a whole approved the December 14, 2011 minutes; Attachment #8.

Quarterly Report by the Environmental Management Commission

Senator Rouzer recognized Mr. Stephen Smith, Chairman of the Environmental Management Commission (EMC) to present the EMC's quarterly report on its operations, activities, programs and progress for the period from October 1, 2011 through December 31, 2011. A copy of the quarterly report is included as Attachment #9.

Mr. Smith discussed the EMC's recent open burning resolution, which asks the General Assembly to reconsider the decision on open burning with regard to setbacks. Mr. Smith said that the EMC was concerned that the change in the open burning setback requirements would exasperate health problems in the most vulnerable populations, including the young and the elderly. A copy of the Memo from EMC about the Resolution to the Air Toxins Program is included as Attachment #10.

Senator East asked about the open burning rules and the correlation to breathing problems in children. Mr. Smith responded that there is substantial data that shows that the proximity to open burning has a direct negative impact to those susceptible to breathing illnesses and diseases, particularly elderly people and young children. Mr. Smith said that he would provide the appropriate supporting data to Senator East's office.

Representative Hackney asked for the definition of buffer mitigation. Mr. Smith replied that its meaning includes various things relating to restoration and various credits and trading packages of buffers and wetlands in particular, in North Carolina. Representative Hackney asked about buffer reductions. Mr. Smith said that current

buffer mitigation regulations now allow for the reduction or elimination of a buffer, however, the buffer must be replaced somewhere else.

Representative Hackney asked about the environmental impacts of interbasin transfers. Mr. Smith said that the environmental document and analysis stage determines if an environmental impact statement is required for an interbasin transfer or not.

State Air Toxics Program

Introduction and Overview of Introduced Legislative Proposals to Amend the Program

Representative Gillespie spoke briefly about the proposed legislation to reform the State Air Toxics Program and how the version under discussion has changed from the previous version. Commission Counsel, Jeff Hudson, provided additional information about the changes to the proposed legislation and its impact on the State Air Toxics Program. A copy of the proposed legislative bill draft and bill summary are included as Attachments #11 and #12, respectively.

Potential Implementation of Legislative Proposals to Amend Program

Senator Rouzer recognized Ms. Sheila Holman, Director of the Division of Air Quality (DAQ) of the Department of Environment and Natural Resources (DENR) to discuss the potential implementation of legislative proposals to amend the State Air Toxics Program. A copy of the presentation is included in the attachments to these minutes as Attachment #14.

Ms. Holman explained that the federal program, administered by United States Environmental Protection Agency (EPA), is a technology-based program for which technology standards are developed. According to Ms. Holman, those technology standards are fairly stringent. These standards have resulted in emissions reductions. The EPA is required to evaluate whether any residual risk remains after the technology standard was established every eight years and EPA is making progress on evaluating standards.

Ms. Holman said that the State Air Toxics program began in 1990 and was in response to the federal government's inaction. She explained that the State program focuses on appropriate health standards. The proposed legislation would provide an exemption for those sources that are exempt from the federal requirements or in cases in which the EPA fails to establish emission standards for a given industrial sector. The legislation would maintain DENR's authority to act when a public health risk is found. The legislation also would require DAQ to review the air toxics rules and the implementation of those rules to determine if changes could be made to reduce unnecessary regulatory burden and increase the use of DAQ resources while maintaining protection of public health and report back to the Commission by November 2012.

Ms. Holman continued to describe the differences in how the program is currently implemented versus how it would be implemented under the proposed legislation. Aspects of the Program that would not change under the proposed legislation include permitting for all emissions sources at a facility that is subject to both federal and State requirements and the protection of public health consistent with current health based standards.

Representative Gillespie asked if the Governor had weighed in on this proposal. Ms. Holman yielded to Ms. Robin Smith, Assistant Secretary of DENR. Ms. Smith said that she has shared the bill draft with the Governor and the Governor was very supportive, as the proposed legislation continues to protect public health.

Representative Gillespie asked about the safety net discussed on page 1, line 27, specifically about the safety net timeline and how long pollution would be emitted before the State could implement the safety net? Ms. Holman responded that DENR will be evaluating permit applications as they come in and will consider additional assessments before they issue an air quality permit. If a problem arises, they will work with a facility in the early design stages, because that is the easiest and most flexible time to change plans.

Representative Gillespie asked if DENR should be required to do modeling and how does DENR currently manage the modeling? Ms. Holman responded that most of the large emissions sources do their own modeling and submit the modeling results to DAQ staff during the permit application process. The bulk of the modeling falls on the industry. However, some smaller emitters need assistance to conduct the modeling and DENR will help them with their modeling. When the program was initially created the ability to do all of the modeling in-house was provided.

Representative McElraft asked how the program gives disclosure when someone applies for an air toxic permit and at what point do the neighbors get notified that the facility is applying for the permit? Ms. Holman said that in-house permits being considered are posted on DENR's website. If there is a public outcry they would schedule a public hearing as part of the permit process.

Senator Jackson asked if the proposed change is more user-friendly or more stringent than the previous program? Ms. Holman said that the proposed legislation is refining when facility-wide modeling is conducted, instead of requiring facility-wide modeling for each permit modification. Senator Jackson asked about the frequency of the inspections and who is doing the inspections. Ms. Holman said that the air quality permit is issued by the State of North Carolina and covers both State and federal requirements. The EPA has an oversight role over North Carolina's permits, but EPA does not oversee day-to-day permit activity or inspections. The larger facilities are inspected on an annual basis and the smaller facilities are inspected every two years.

Representative McGrady stated he had been working with Rural Advancement Foundation International (RAFI-USA) and asked if the proposed legislation will be consistent with hydraulic fracturing emissions. Ms. Holman responded that emissions would be evaluated on a case-by-case basis as the permit applications are submitted to DENR. Representative McGrady asked if most of the air emission problems associated with hydraulic fracturing are covered under the federal rules. Ms. Holman said that there are some rules already in place with federal government and some that are not.

Representative Hackney asked how this proposed legislation would change the attempt to pursue hydraulic fracturing in North Carolina from an air toxics perspective. Ms. Holman responded that it would affect existing as well as new facilities. This would affect the new facilities and cause them to look at their emissions and what is federally exempt. That would be determined in the permit application and an evaluation would be made to determine if there's a possible public health risk.

Comments from Environmental Community on the Program

Senator Rouzer recognized Dr. David Tayloe, Jr., Past-President of the American Academy of Pediatrics. Dr. Tayloe gave a presentation on potential impacts the proposed air toxics legislation would have on children, including medical issues relating to respiratory disease resulting from exposure to air toxics. A copy of the presentation is included in the attachments to these minutes as Attachment #15.

According to Dr. Tayloe, in 2003 North Carolina released 34 million pounds of toxic cancer causing carcinogens, currently covered under the State air toxics program. The State program ensures that facilities located close to citizens (hot spots) are regulated and covers air 21 toxics that are not regulated the federal program.

Dr. Tayloe continued that the State program helps prevent respiratory diseases in children, as children are more susceptible than adults. There are 140,000 children with asthma, 80% of those cases develop in the years after birth to adolescence. Developing lung tissue is more susceptible to lung damage. Playing outside in the afternoon is a risk factor, particularly in high ozone communities. Thus, he feels that the national ozone standards should not be revised downward.

Representative Gillespie reiterated that the bill draft does not dismantle the air toxixs program and Dr. Tayloe's comments are related to the bill draft in its current form, not in it's final from.

Representative Hackney asked about the symptoms of children with asthma and other lung problems. Dr. Tayloe responded that most children with asthma experience wheezing and have difficulty breathing. They also have low tolerance for exercise and they wake up in the middle of the night coughing, which causes them to miss school. Representative Hackney said that despite comments to the contrary, the program is still being weakened. The question is how much it is being weakened.

Representative McElraft asked if there has been an outcry from Virginia and South Carolina's pediatricians since they have already enacted what North Carolina is planning to do with this program. Dr. Tayloe does not know and had attempted to find out.

Senator East said that companies have left our country because we have regulated and taxed them out of business. He asked for the medical community's response to other countries that have no rules and who can emit whatever they want. Senator East said that over-regulation hurts business. Dr. Tayloe responded that it depends on what type of environment citizens want to raise their children and live in. His profession values public health and environment more than business in this case.

Senator Rouzer recognized Mr. Dan Conrad, Legislative Counsel for the North Carolina Conservation Network. Mr. Conrad also spoke on behalf of Environment North Carolina, the Sierra Club, and the Southern Environmental Law Center. Mr. Conrad gave a presentation on the potential implementation of legislative proposals to amend the State Air Toxics Program. A copy of his presentation is included in the attachments to these minutes as Attachment #16.

Mr. Conrad noted that numerous studies have shown the benefit of regulations to the economy and have minimal effects on industry's effectiveness. Mr. Conrad said that businesses chose to locate in North Carolina because of North Carolina's high quality of life. According to Mr. Conrad one of the referenced businesses chose to locate to China instead of Texas, despite Texas' low air quality standards. Mr. Conrad said that Texas' state program has been managed so poorly that the U.S. EPA had to take it over.

Mr. Conrad also expressed concern over indemnification, which means that companies cannot be held liable or sued if the facility goes through permitting. The exemption language established emission standards, as defined in the Code of Federal Regulations (CFR). Mr. Conrad expressed concerns about the exemption language. As drafted it could possibly allow a facility to exempt itself from federal regulations.

Mr. Conrad said that the primary goal of the bill is to reduce modeling requirements, as the Director's Call already exists. According to Mr. Conrad, the new law will shift the program's emphasis from one that is preventative to retroactive, which will increase the chance for something to slip through the cracks. With the enactment of Senate Bill 781 (Regulatory Reform Act of 2011, S.L. 2011-398), challenges could be made to the Director's Call. Mr. Conrad also noted that DENR should be properly funded to implement the proposed legislation.

Mr. Conrad continued that the maximum achievable control technology (MACT) is a federal one-size fits all program. It does not take into consideration the type of facilities near the industrial site, such as schools. The State program looks at the health risk. Thus, the Director's Call should take into account the siting of these facilities. Whereas the federal program looks at threatening toxics nationally, the State program looks at local toxics. Therefore the groups that Mr. Conrad represents believe there should be language in the statutes to would require the Director's Call, specifically with regard to air pollutants unique to this State and within proximity to a school. Mr. Conrad urged the Commission to require a reporting requirement on the implementation of the legislation to make sure it doesn't have detrimental effects.

Representative Gillespie said that there would be a revised bill draft to share with the Commission at the next meeting.

Representative McGrady asked how often DENR has used the Director's Call in the recent past. Mr. Conrad responded that it's not used very often, because in the current program all of the modeling is done up front and all the sources are already in the program. However, he would ask DENR for more precise information. Ms. Holman, she said they have implemented the Director's Call two times in the mid-1990s, as part of the evaluation of boilers across the State. They also issued a Director's Call in 2007.

Regulated Community's comments about Proposed Amendments to the Program

Senator Rouzer recognized Mr. Preston Howard, President of the Manufacturers and Chemical Industry Council of North Carolina. His comments represent those of the regulated community and their response to the legislative proposals to amend the State Air Toxics Program. A copy of the presentation is included in the attachments to these minutes as Attachment #17.

Mr. Howard said that North Carolina is currently at a distinct disadvantage, as other states in the southeast have already implemented revisions similar to those in the proposed legislation to their air toxics programs. Mr. Howard said that the most important aspect of production is how quickly a product can come to the market. The market is not just global, but local. The manufacturing community has been trying to reduce the duplicative process of the State Air Toxics Program for quite some time.

According to Mr. Howard, there's not much additional environmental benefit to the duplicative process and the modeling effort. Since 2000, the level of air toxics emissions in the State has declined by 70%. The reason for that decline has little to do with the State Air Toxics Program. The reduction coincides with the implementation of the federal MACT program. The manufacturing community does not want the program eliminated, but wants it to become more consistent, so they can compete in the market place. The health protections can be met with the Director's Call, as well as with the other tools they have. They have a good team of inspectors that regularly inspect these facilities.

Report on the Study of the Cost of Assessing and Remediating Inactive Hazardous Substances

Senator Rouzer recognized Ms. Charlotte Jesneck, Head of the Inactive Hazardous Sites Branch of the Superfund Section in the Division of Water Management within DENR. Ms. Jesneck presented a report on the study of the cost of assessing and remediating inactive hazardous substance or waste disposal sites for which there is no financially viable responsible party and the implementation of S.L. 2011-186/HB 45 (Accelerate Cleanup of Industrial Properties). A copy of the presentation is included in the attachments to these minutes as Attachment #18.

Ms. Jesneck gave an update on the status and an overview of the orphaned sites under the Inactive Hazardous Sites Response Act. Ms. Jesneck also discussed risk-based remediation of industrial sites. According to Ms. Jesneck it is difficult to determine who is responsible for a site, as businesses were not required to keep records prior to the 1980s. There are approximately 323 orphaned sites and 283 high-risk orphaned contaminated sites. The most common is a contaminated water well site, some of which are the result of homeowner activities or migrating toxins from abandoned waste sites (i.e. drums left in the woods). Since about half of North Carolinians get their drinking water from wells, exposure to contaminated water is a concern.

Representative Samuelson asked about sites that are listed as "no further action" status. She has received a complaint from a constituent that there is still a large amount of paperwork to be filed after receiving a "no further action" status.

Ms. Jesneck said that there are two types of sites that fall into that category: 1) Sites that have been completely cleaned up to unrestricted use standards are not required to file any additional paperwork. 2) Sites with land use restrictions are required to provide an annual certification that they are still complying with the land use restrictions. That is the only required paperwork.

Representative Samuelson asked about the nature of the work that is involved in filing from year to year if nothing has changed. Ms. Jesneck said that they sign a document that states they are still complying with the land use agreement, which is filed with the register of deeds and submitted annually. There is nothing new that needs to be recorded or paid.

Senator East asked if there is a substance that could be injected into the ground in the affected area to treat underground petroleum leaks. Ms. Jesneck responded that there is technology that is used for petroleum leaks. Certain leaks respond to different types of bacterial strains. The petroleum serves as the food source for the bacteria added to the contaminated site. Chlorinated solvent and chemical sites aren't as easy to remediate as petroleum and require a different type of injection. Some of these chemicals are denser than water and when it sinks, it can be difficult to extract it.

Senator East asked if there are currently any sites in North Carolina in which this type of treatment was used. Ms. Jesneck said that she does not work in that department and she's unaware of any.

Representative McElraft asked about a property that was cleaned and then later sold at a profit. Could a lien be placed on the property to payback the cost of clean-up? Ms. Jesneck responded that legislation had been discussed in the past to do so, but they do not currently have the authority to do that.

Senator Hartsell asked about the status of the cleanup of the Badin Works site on the Yadkin River in Baden, North Carolina. Ms. Jesneck answered that the Badin site is not handled by her program and she referred the question to Mr. Dexter Matthews.

Mr. Dexter Matthews, Director of the Division of Waste Management, DENR, said that they are close to publishing a remedial action plan on the next stage of cleanup, involving polychlorinated biphenyls (PCBs). There is also ongoing sampling that was just completed in the entire river basin, and that information is currently being reviewed by the Epidemiology Section of the Public Health Division of the Department of Health and Human Services, a report should be released with that information in the next few months.

Senator Bingham asked Mr. Matthews about the arsenic contamination at the Badin site. Mr. Matthews responded that on the site itself there are a multitude of solid waste management units in which waste had been disposed of over the years. Most of those sites have a "no further action" status, yet there are a number of sites that have interim measures, such as removal of waste, cap on landfills, etc. The remaining work to be done on the property has been proposed for remediation and will be handled under that plan, which will also be available for public comment.

Senator Bingham asked about the large accumulation of wood chips and the arsenic contamination due to the wood chips. Ms. Jesneck responded that the wood chips were treated with copper chromium arsenic which is the cause of the contamination.

Representative Samuelson asked about the cost of producing the "no further action" list annually and if the property owner was notified of what they need to do to get off of the list. Ms. Jesneck said that DENR sends everyone on the ranking list a letter once a year. The cost is minimal.

Senator Hartsell asked Mr. Matthews about the cyanide contamination at the Baden works site. Mr. Matthews said the report he mentioned, which will be published in a few months, will address this along with other contaminants. Senator Hartsell requested a copy of the report. Mr. Matthews will update the Commission with the details at the next meeting.

Update on Directional and Horizontal Drilling and Hydraulic Fracturing (Fracking)

Senator Rouzer recognized Ms. Robin Smith, Assistant Secretary of Environment, DENR. Ms. Smith provided an update on DENR's study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State. A copy of the presentation is included in the attachments to these minutes as Attachment #19.

Ms. Smith said that the current data on shale gas in the State is limited to two gas wells in Lee County. This data is being used as a basis for what shale gas resources may be present in addition to estimates for potential environmental and economic impacts. This data may not be representative of the entire Sanford Sub-basin, let alone the entire State of North Carolina. Ms. Smith indicated that they are still researching the direct impact on communities and have had to exclusively review community impacts experienced in other states. The oil and gas industry can have impacts on infrastructure. The economic benefits are still unclear, in part because of limited data. The economic impacts were developed by Department of Commerce. A copy of the Executive Summary of Directional and Horizontal Drilling and Hydraulic Fracturing is included as Attachment #13.

Ms. Smith discussed water withdrawals. According to Ms. Smith, North Carolina does not have a mechanism to manage water withdrawals. Ms. Smith noted that we probably have sufficient surface water supplies to meet the needs of hydraulic fracturing; however, we don't have the groundwater supply. There are fairly abundant surface water resources, but not all areas have equal surface water resources. Some are richer than others and all are prone weather and drought cycles. As a State, we cannot manage those water withdrawals without a permitting program. Hydraulic fracturing wells use three to five million gallons of water per day. If there's no regulatory mechanism in place, there can be significant impacts. If you draw that water down too quickly you can have streams go dry and make downstream users pick up the telephone. The State needs to be able to manage the water.

Ms. Smith noted that the report lists a number of areas for further study, including groundwater study and the separation between groundwater and gas and oil wells. Ms. Smith discussed the study's recommendations, which included the following:

1. Collect pre-drilling baseline data on resource quality.
2. Water management.
3. Enhance existing oil and gas well construction standards to address the additional pressures of hydraulic fracturing and horizontal drilling.
4. Develop setback requirements and identify areas where oil and gas activities should be prohibited.
5. Develop a State stormwater regulatory program for oil and gas drilling sites.
6. Develop specific standards for management of oil and gas wastes.
7. Require:
    - Full disclosure of hydraulic fracturing chemicals and constituents to regulatory agencies.
    - Public disclosure of hydraulic fracturing chemicals, except for trade secrets, through FracFocus or State agency website.
8. Prohibit the use of diesel fuel in hydraulic fracturing fluids.
9. Develop a robust data management system to:
    - Include GIS capabilities.
    - Store baseline water and air quality data.
    - Track production for royalties / severance tax.
    - Facilitate public disclosure of data.
    - Provide electronic permitting to the industry.
    - Enable effective permitting, inspection and enforcement.
10. Ensure State agencies, local first responders, and the industry are prepared to respond to a well blowout, chemical spill, or other emergency.
11. Develop a modern oil and gas regulatory program while preventing physical and economic waste of oil and gas resources
12. Keep environmental permitting in DENR where the process would benefit from the expertise of State geological staff and the ability to coordinate air, land, and water quality permitting programs.
13. Develop a coordinated permitting process.
14. Address the distribution of revenues from oil and gas excise taxes and fees.

15. Identify a source of funding for repair of roads damaged by truck traffic and heavy equipment.
16. Clarify the extent of local government regulatory authority over oil and gas activities.
17. Complete additional research on impacts to local governments and local infrastructure.
18. Complete additional research on potential economic impacts.

Representative Gillespie said that DENR did a good job on this study. However, he's disappointed that the Attorney General's Office hasn't provided input yet. Ms. Smith said that the Attorney General's Office will be addressing consumer issues, such as forced pooling or unitization, as well as well setbacks.

Senator Bingham asked if there had been concerns with drilling across another person's property? Ms. Smith said that would be something the Attorney General's Office will address. A state would normally approve a drilling block and some homeowners may be forced to participate. This practice is called "forced pooling" or "unitization." In most states where drilling occurs, methods for defining drilling blocks have been developed.

Commission discussion and announcements

Senator Rouzer thanked the members and staff, and announced the next meeting will be held on Thursday, April 26, 2012, at 9:00 a.m. in room 544 of the Legislative Office Building. The dates and times are subject to change and notice will be given if they change.

Adjournment

The meeting was adjourned at 12:30 p.m.

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Attest:

Sarah Neunzig, Committee Clerk

ERC Committee Attachments

1	Member Attendance
2	Sergeants at Arms
3	Meeting Notice
4	Meeting Reminder
5	Agenda
6	Visitor Registration Sheets (3)
7	Memorandum on Disposition of Reports to the Committee
8	December 14th Minutes
9	Quarterly Report from Environmental Mngt Commission
10	Memorandum from EMC about Resolution to Air Toxins Program
11	Bill Draft of Program Reforms
12	Bill Summary of Program Reforms
13	Executive Summary of Directional and Horizontal Drilling and Hydraulic Fracturing
14	Presentation: "Control of Toxic Air Pollutants in NC" – DENR, Division of Air Quality
15	Letter from the NC Medical Professionals on opinion of impact Program Reforms have on Respiratory Health
16	Presentation: "Comments on Proposed Air Toxics Legislation" – NC Conservation Network
17	Presentation from regulated Community
18	Presentation: "Status of Orphaned Inactive Hazardous Substance of Wasted Disposal Sites" – DENR, Division of Waste Management
19	Presentation: "Oil and Gas Study" - DENR

ATTENDANCE

Environmental Review Commission

DATES	March 22nd		April 26												
Sen. David Rouzer (Chair)	✓		✓												
Rep. Mitch Gillespie (Co-Chair)	✓		✓												
Rep. Ruth Samuelson (Co-Chair)	✓		✓												
Sen. Stan Bingham	✓		✓												
Sen. Dan Clodfelter															
Sen. Don East	✓														
Sen. Fletcher Hartsell	✓		✓												
Sen. Brent Jackson	✓		✓												
Sen. Bill Rabon	✓														
Sen. Michael Walters			—												
Rep. William Brisson			—												
Rep. Joe Hackney	✓		✓												
Rep. Carolyn Justice															
Rep. Pat McElraft	✓		—												
Rep. Chuck McGrady	✓		✓												
Rep. Roger West			✓												
Staff:															
Jeff Hudson	✓		✓												
Susan Iddings															
Jennifer McGinnis	✓		✓												
Jennifer Mundt	✓		✓												
Mariah Matheson	✓		✓												

Committee Sergeants at Arms

NAME OF COMMITTEE Env. Rev. Com

DATE: 3-22-'12 **Room:** 544

House Sgt-At Arms:

1. **Name:** Fred Hies
2. **Name:**
3. **Name:** Bill Bass
4. **Name:**
5. **Name:** Marsha Parmer

Senate Sgt-At Arms:

1. **Name:** Billy Fritcher
2. **Name:** Steve Wilson
3. **Name:** Ken Kirby
4. **Name:**
5. **Name:**

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
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REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

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JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

March 7, 2012

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Sarah Neunzig, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at **9:30 a.m.** on Thursday, March 22, 2012, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. ***(Please note the later starting time.)***

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Sarah Neunzig, Commission Clerk, at (919) 733-5748.

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COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

March 16, 2012

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Sarah Neunzig, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at **9:30 a.m.** on Thursday, March 22, 2012, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. ***(Please note the later starting time.)*** The agenda for the meeting is expected to include presentations related to the activities of the Environmental Management Commission, the State Air Toxics Program, the costs of remediating inactive hazardous substance or waste disposal sites, implementation of recently enacted legislation concerning risk-based remediation, and the Department of Environment and Natural Resources' study of horizontal drilling and hydraulic fracturing. Please note this agenda is tentative and subject to change.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Sarah Neunzig, Commission Clerk, at (919) 733-5748.

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MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

9:30 a.m. Thursday, March 22, 2012
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Senator Rouzer, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Approval of the minutes for the December 14, 2011 meeting of the Commission

4. Quarterly report by the Environmental Management Commission (EMC) as to its operations, activities, programs, and progress for the period from October 1, 2011 through December 31, 2011 (G.S. 143B-282(b)) *(30 minutes)*
   Stephen T. Smith, Chairman
   Environmental Management Commission

5. Discussion of the State Air Toxics Program and legislative proposals to amend the Program *(1 hour, 40 minutes)*
   Representative Mitch Gillespie *(5 minutes)*

   Jeff Hudson, Commission Counsel *(5 minutes)*

   Presentation on potential implementation of legislative proposals to amend the State Air Toxics Program *(30 minutes)*
   Sheila C. Holman, Director
   Division of Air Quality, Department of Environment and Natural Resources (DENR)

Comments from the environmental community on the State Air Toxics Program and legislative proposals to amend the Program *(30 minutes)*

David T. Tayloe, Jr., M.D.
Past-President, American Academy of Pediatrics

Dan Conrad, Legislative Counsel
North Carolina Conservation Network

Comments from the regulated community on the State Air Toxics Program and legislative proposals to amend the Program *(30 minutes)*

Preston Howard, President
Manufacturers and Chemical Industry Council of North Carolina

6. Report on the study of the cost of assessing and remediating inactive hazardous substance or waste disposal sites for which there is no financially viable responsible party (Section 7 of S.L. 2011-186/HB 45), and implementation of S.L. 2011-186/HB 45 ("Accelerate Cleanup of Industrial Properties" (risk-based remediation)) *(30 minutes)*

   Charlotte Jesneck, Head
   Inactive Hazardous Sites Branch, Superfund Section
   DWM, DENR

7. Update on DENR's study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State *(30 minutes)*

   Robin Smith, Assistant Secretary for Environment
   DENR

8. Commission discussion and announcements

9. Adjourn

FUTURE MEETINGS:

The Environmental Review Commission will meet on the following date at 9:00 a.m. in Room 544 of the Legislative Office Building, Raleigh, North Carolina. **This schedule is tentative and subject to adjustment.** For planning purposes, however, please reserve this date.

Thursday, April 26, 2012.

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

Visitor Registration Sheet

Environmental Review Commission — March 22nd 2012

Name of meeting — date

Visitors: Please sign in below and return to Committee Clerk

Name	Firm or Agency
Paul Sherman	NCFB
Angie Maier	NCPC
Will Culpepper	MVA
Stephen Stroud	URS
Sharon Miller	CUCA
Patrick Baffi	NCAEC
Beth Walker	Atty Gen Office
Jay Stem	NCAA
Sarah Wolfe	McGuire Woods
CHUCK NOBLE	WM
Heather Barnett	WM
Jon Vilhi	Communi
DANIEL BAUM	T NORTHAN SAUNDERS
Lu-Ann Stegman	CSS
Ken Melton	K. M. A.
	K&L Gates
Olga Redlich	Duke University
JOHN GOODMAN	NC CHAMBER
	Brooks Pierce NC

Visitor Registration Sheet

Environmental Review Commission — March 22nd 2012

Name of meeting — date

Visitors: Please sign in below and return to Committee Clerk

Name	Firm or Agency
Tom BEAN	EDF
Will Morgan	NC Sierra Club
June Blotnick	Clean Air Carolina
James M. Kenny, MD	" " "
Dave Taylor, Jr MD	Goldsboro Pediatrics
Pat Kaylor	Kaylor Law Firm
Rick Zechini	Progress Energy
Elizabeth Robinson	NCRMA
Lisa Martin	NC Home Builders
PRESTON HOWARD	MCIC
ALAN H. McCONNELL	KILPATRICK TOWNSEND AND STOCKTON, LLP
Doug Lassiter	NCSTA
Tommy Stevens	NCPC
MARK HAINES	SHURTAPE TECHNOLOGIES
Allen Hardison	CRSWMA

Visitor Registration Sheet

Environmental Review Commission — March 22nd 2012

Name of meeting — date

Visitors: Please sign in below and return to Committee Clerk

Name	Firm or Agency
Ryhe Longest	Duke School of Law
Keith Karlsson	Campbell Law School
Harvey Richmond	self
Kari Barkess	DENR
Molly Diggins	Sierra Club
KENNETH TAYLOR	NCDENR - LAND RESOURCES - Geological Survey
Jeff Simon	NCDENR - DLR
Sheila Holman	NCDENR - DAQ
Robin Smith	DENR
Amy Simes	DENR
Margaret Hartzell	Environment North Carolina
Charlotte Jesneck	DENR
Dexter Matthews	DWM - DENR
JOHN SHAW	CAP. GRP SIERRA CLUB
Trina Ozer	NCDENR

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SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

March 22, 2012

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on February 23, 2012. All reports are available online on the Commission website: **(http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received)**. If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or **mariahm@ncleg.net** for assistance.

A. The following report has been submitted by the Environmental Management Commission (EMC) and is being distributed in connection with today's agenda as follows.

1. Quarterly report by the EMC as to its operations, activities, programs, and progress during the previous quarters. January 15, 2012. Statutory Authority: G.S. 143B-282(b). ***Agenda Item #4***

2. Draft report on oil and gas exploration in the State and the use of directional and horizontal drilling and hydraulic fracturing for that purpose. March 1, 2012. Authority: S.L. 2011-276, Sec. 4. (Refer to link - **http://portal.ncdenr.org/web/guest/denr-study**) ***Agenda Item #7***

B. The following report has been submitted by the Department of Environment and Natural Resources (DENR) and may be distributed in conjunction with a presentation at a future meeting of the Commission.

1. Supplemental annual report on the Inactive Hazardous Sites Program. January 1, 2012. Statutory Authority: G.S. 130A-310.2(b).

2. Annual report and recommendations on the One-Stop Permit Assistance Program and the express permit and certification review program. March 1, 2012. Statutory Authority: G.S. 143B-279.12(e) and G.S. 143B-279.13(c).

C. The following report has been jointly submitted by the Department of Transportation (DOT) and DENR, and may be distributed in conjunction with a presentation at a future meeting of the Commission.

Report on exempting motor vehicles from the emissions inspection, including the findings, recommendations, and any legislative or administrative proposals. March 1, 2012. Authority: S.L. 2011-145, Sec. 28.24.

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
December 14, 2011

The Environmental Review Commission (ERC or Commission) met on Wednesday, December 14, 2011 at 8:30 a.m. in Room 544 of the Legislative Office Building. Senator Rouzer presided.

The following members were present: Senator David Rouzer, Co-Chair, Representative Mitch Gillespie, Co-Chair, Representative Ruth Samuelson, Co-Chair, Senator Stan Bingham, Senator Don East, Senator Fletcher Hartsell, Senator Brent Jackson, Senator Bill Rabon, Senator Michael Walters, Representative William Brisson, Representative Joe Hackney, Representative Chuck McGrady and Representative Roger West. Mr. Jeff Hudson, Ms. Jennifer McGinnis and Susan Iddings, Commission Counsels; Ms. Jennifer Mundt and Ms. Mariah Matheson, Research Assistants; Ms. Sarah Neunzig, Commission Clerk, Sergeants-at-Arms Jim Blackburn, John Brandon, Larry Elliot, John Fitchett and Martha Gaddison also attended. Attachments #1 and #2.

On December 7, 2011, notice was sent to members and interested parties via e-mail. An additional reminder e-mail was sent on December 13, 2011. A copy of the notice is included in the attachments to these minutes as Attachments #3 and #4. Copies of the agenda for the meeting, visitor registration sheets and memorandum regarding the disposition of reports are included in the attachments to these minutes as Attachments #5, #6 and #7 respectively.

Call to order and introductory remarks

Senator Rouzer called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized his Co-Chairs, Representative Gillespie and Representative Samuelson, for introductory remarks. Senator Rouzer recognized Mr. Jeff Hudson, Commission Counsel, to provide an overview of the meeting agenda. Mr. Hudson explained that the agenda consisted of (i) housekeeping matters encompassing the approval of previous meeting minutes and Commission budget, (ii) presentations on the North Carolina Parks and Conservation Matters, (iii) presentations from the Department of Environment and Natural Resources (DENR) on vegetative buffers for the protection of water quality and the use of ecological flow in hydrologic modeling and (iv) the tentative schedule for 2012 meetings of the Commission.

Approval of the minutes for the October 12, 2011 meeting of the Commission

Representative McGrady offered a motion to approve the minutes, Senator Walters seconded the motion. The Commission as a whole approved the October 12, 2011 minutes; Attachment #7.

Adoption of the Commission budget

Representative McGrady offered a motion to approve the Commission budget, Representative Samuelson seconded the motion. The Commission as a whole approved the Commission's budget; Attachment #8.

Presentations on Parks and Conservation Matters

Parks and Recreation Trust Fund

Senator Rouzer recognized Mr. Lewis Ledford, Director of the Division of Parks and Recreation of DENR to present the annual report on the Parks and Recreation Trust Fund. A copy of the presentation is included in the attachments to these minutes as Attachment #9, the annual report for 2010-2011 as Attachment #10 and the 2011 annual report as Attachment #11.

Representative Samuelson asked about the four dollar per capita funding that puts North Carolina at 45th in the United States for funding its State Park System. She asked Mr. Ledford for a comparison on a national stage regarding state park systems, and asked if there was anything the State needed to do to acquire a higher ranking regarding funding. Mr. Ledford responded, North Carolina's main strength in the State Park System is the local projects for small communities, which the Trust Fund enables. Other states such as Alabama and West Virginia have a more resort-type atmosphere IN their state parks. It is very expensive to attain a resort atmosphere by doing such things as building lodges on site, and thereby increases these states per capita funding rankings compared to North Carolina. North Carolina State Parks retain a natural atmosphere.

Senator Bingham asked about the COPS program and asked what is the respective interest rate payback period. Mr. Ledford responded the State Treasurer secured the rate many years ago along with university bonds, but he is unsure of the exact interest rate. He did confirm a payback period of 20 years.

Senator East asked about the maintenance of State Parks utilities. Mr. Ledford responded that the State Park System has tried to tie into the local municipalities if possible for more efficient utilities. It is an ongoing process to negotiate ways to tie certain utilities to the town, such as water and sewer systems.

Commission was then shown a video about the State Park System.

North Carolina Natural Heritage Trust Fund

Senator Rouzer recognized Ms. Lisa Riegel, Executive Director of the North Carolina Natural Heritage Trust Fund to present the annual report on awards from the North Carolina Natural Heritage Trust Fund. A copy of the presentation is included in the attachments to these minutes as Attachment #12 and #13.

Senator East asked how she arrived at the estimate that the income of the Trust Fund for the current year will equal the income for next year with the continued decline in the real estate market and the income that comes from the real estate transfer tax. Ms. Riegel referenced a graph trend that is tracking on target, this resulted in her forecasting the value of $8 million for next year.

Senator East then asked fiscal staff what percent of the real estate transfer tax is allocated to the Trust Fund. Lanier McGree from the Fiscal Research Division responded that she does not know the amount of the real estate conveyance tax, but the State portion of the tax breakdown is 75% to the Parks and Recreation Trust Fund and 25% to the Natural Heritage Trust Fund. The State gets approximately 50% of the real estate conveyance tax. She will follow up with the Commission for the exact amount the State gets and the exact real estate conveyance tax.

Representative Samuelson asked Katy Thomas from the NC Association of Realtors to respond. She answered that the real estate transfer tax is $2 per every $1,000 in a real estate transaction. Fifty percent of that goes to the counties and the other 50% goes to the two trust funds, which are split 75% for the Parks and Recreation Trust Fund and 25% for the Natural Heritage Trust Fund.

Senator Bingham asked if the public can visit the Arnett Branch Long Leaf Pine Forest. Ms. Riegel assured him that the public can visit and it will be managed through the NC Zoo.

Senator Bingham also asked about federal grants, aside from those from the US military, and wanted to know what conditions were tied to those grants. Ms. Riegel responded in most areas federal grants are focused on preserving the natural habitat and the grant funds are used for purposes similar to those of the Parks and Recreation Trust Fund.

Senator Bingham asked if there is a close relationship between the Boards of the two Trust Funds. Ms. Riegel assured him that there is a very close relationship and lots of regular communication; over the past few years this has proven very successful.

Senator Rouzer asked how many projects are funded through COPS dollars. Ms. Riegel responded that she knows the dollar amount but she doesn't know the number of projects. She will report back to him with that answer. He then asked if there were any projects where dollars were allocated yet the project was not finished. She responded that one project did fall though, and the funds need to be reallocated. Senator Rouzer asked about the process for reallocation. She responded that there will be a meeting to evaluate other projects and then reallocate funds in the standard manner by allowing all applicants the chance to submit projects and apply for the Trust Funds.

Clean Water Management Trust Fund

Senator Rouzer recognized Mr. Richard Rogers, Jr., Executive Director of the Clean Water Management Trust Fund. He presented the annual report on the implementation of the Clean Water Management Trust Fund. A copy of the presentation is included in the attachments to these minutes as Attachment #14, the 2011 annual report as Attachment #15, and a list of projects not funded in the 2011 awards cycle as Attachment #16.

Representative Samuelson asked about the number of applications in 2011 and how applications for that number compares to past years. Mr. Rogers responded that two years ago there was a high: $249 million applications. In 2011 there were applications for more than $157 million. The numbers are down from two years ago as a reflection to the reduction of funding to the Clean Water Management Trust Fund. The distribution of awards remains about the same: 5% of the land acquisition and 5% for infrastructure. The demographics of the types of applications are the same.

Representative Samuelson asked about the matching portion and who is matching the dollars. Mr. Rogers answered that the majority of the matching funds comes from the federal state revolving funds. Typically loan funds are paid off over the next 20-30 years with their fees.

Senator Rabon asked if he could see in one document all the land and the two trust funds own in order to determine whether the trust funds can be consolidated. Mr. Rogers said that can be done and provided to his office.

Senator Bingham asked if cities come to you to get assistance when filling out applications. Mr. Rogers responded, the large municipalities have staff to assist, and smaller municipalities usually hire someone to help. His staff is required by the Trustees to help applicants fill out the document in an effort for applicants to receive the help they might need.

North Carolina Development and Farmland Preservation Trust Fund Committee

Senator Rouzer recognized Mr. Dewitt Hardee, Environmental Program Manager for the Department of Agriculture and Consumer Services. A copy of the presentation is included in the attachments to these minutes as Attachment #17 and the 2010-2011 annual report as Attachment #18.

Senator East asked staff to compare what amount of monies were returned to the General Fund for the State budget from the Agricultural Development and Farmland Preservation Trust Fund (ADFPTS) versus others in the State. Mr. Dewitt responded that the ADFPTS was appropriated $2 million for the 2010-2011 fiscal year. That same year, $2,173,989 was returned at the request of the Office of State Budget and Management to help balance the budget. Fiscal Research Staff Lanier McGee responded that the Clean Water Management Trust Fund returned over $100 million and the Natural Heritage Trust Fund and the Parks and Recreation Trust Fund were also used by the legislature to balance the budget in the amount of $8 million each. She will report a complete history of those budget reversions to the Commission.

Update on Land for Tomorrow

Senator Rouzer recognized Mr. Tom Cors, Director of Government Relations for The Nature Conservancy, North Carolina Chapter. A copy of the presentation, and update on Land for Tomorrow, is included in the attachments to these minutes as Attachment #19. Land for Tomorrow is a partnership of citizens, businesses, and interest groups that support and promote the four conservation trust funds reported here today.

Representative Samuelson asked if there is redundancy among these four trust funds and how the trust funds work together. Mr. Cors answered, the different agencies complement each other because each trust fund addresses different issues within conservation to specifically address a direct constituency.

Presentation on the use of vegetative buffers for the protection of water quality

Senator Rouzer recognized Ms. Coleen Sullins, Director of the Division of Water Quality in DENR. A copy of the presentation is included in the attachments to these minutes as Attachment #20.

Senator Rouzer asked if soil type makes a difference in buffers; clay versus sandy soil. Ms. Sullins does not know that but can get an answer later.

Representative Samuelson asked if these studies looked at the different types of plants in the buffers such as grasses versus trees. Ms. Sullins responded the studies did look into differing plant types and found that trees are important in de-nitrifying the water as it moves through the soil. Trees have a deeper root base than grasses and the studies specifically looked at that and found a much higher activity level in the buffers with trees than grasses.

Representative McGrady asked how protecting existing buffers compare with other pollution control strategies in terms of cost effectiveness and effectiveness in protecting water quality. Ms. Sullins responded that existing buffers are the least expensive approaches; if removed, you must build structures to treat the stormwater run-off and then maintain those structures over their lifetime, which would prove to be more expensive.

Representative McGrady asked how buffers can add or detract from land values. Ms. Sullins responded that she is not aware of any research that has been done in North Carolina, but she will ask

her staff to look into that as there have been academic studies done in other states. He then asked if there has been any negative impact on property values found in these reports. She answered that data shows good water quality has a significant positive effect on property value, but no information has been found regarding the buffers hindering property value. In general, good water quality improves land values.

Representative Samuelson asked about the 1995/1996 incident regarding fish kills and algal blooms due to excessive nitrogen in The Neuse River and if anything was special to those years to cause it. Ms. Sullins responded that the system is affected by wet and dry weather. In 1995 there was a dry spring season followed by a very wet June, which caused lots of nutrients to be flushed into the system. Her staff is continuing to look into that issue to learn more, but there is a linkage between wet weather and nutrients being washed into the water system.

Presentation on the use of ecological flow in hydrologic modeling

Senator Rouzer recognized Mr. Thomas Reeder, Director of the Division of Water Resources in DENR. A copy of the presentation is included in the attachments to these minutes as Attachment #21.

Representative Samuelson asked what role, if any, do prior things that were done to waterways effect ecological flow in the present. Mr. Reeder stated that whatever is in place now will stay and they will work with it. Representative Samuelson then asked about invasive species and if they will try to preserve those as well. Mr. Reeder mentioned that when they spray invasive species to remove them, they only spray the plants that are not native to North Carolina.

Representative Samuelson asked Mr. Reeder to explain 7Q10 and what it means. Mr. Reeder explained it is a hydrologic standard that applies when dealing with wastewater discharge permits. 7Q10 is the low flow one can expect for 7-10 days once every ten years. It is a very low flow that is not suited for the long term survival of rivers.

Senator Rabon asked about inter-basin transfers and the rules used to treat these in the various counties and what suggestions Mr. Reeder can offer. Mr. Reeder responded that this program is created by the General Assembly because it is for North Carolina only, not federally mandated. He believes NC has the most stringent program in the country.

Commission discussion and announcements

Senator Hartsell informed the Commission that he had submitted a letter to Attorney General Roy Cooper seeking an Attorney General opinion concerning the ownership of the submerged bed of the Yadkin River at the site of the Yadkin Hydroelectric Project. He stated today, he has not received a response from the Attorney General and would like to submit the motion to intervene submitted by the Attorney General on behalf of DENR in the Yadkin Hydroelectric Project reauthorization. The basis for intervention stated in the motion is that the State retains title to navigable waters under the public trust doctrine and that the navigable waters themselves are a public resource. This is important to determine who has control of the surface waters and the ecological flows of a river basin. The motion is included in the minutes as Attachment #22.

Senator Rouzer thanked the members and staff, and announced the next meetings to be held would be Thursday, January 26, 2012, at 9:00 a.m. in room 643 LOB. The dates and times are subject to change and notice will be given if they change.

Adjournment

The meeting was adjourned at 11:35 am.

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Attest:

Sarah Neunzig, Committee Clerk

ENVIRONMENTAL MANAGEMENT COMMISSION

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Stephen T. Smith
Chairman
Charles Peterson
Vice Chairman

Beverly Eaves Perdue, Governor
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David B. Peden
Dickson Phillips III
Clyde E. Smith Jr.
Steve W. Tedder

January 15, 2012

TO: ENVIRONMENTAL REVIEW COMMISSION
Jeff Hudson, Commission Counsel, Environmental Review Commission

FROM: Stephen T. Smith, Chair, Environmental Management Commission

RE: EMC Quarterly Report

Enclosed please find the quarterly report of the Environmental Management Commission on its operations, activities, programs and progress for the period October 1, 2011 to November 30, 2011.

Attachment

cc: Robin Smith, Assistant Secretary for Environment, NCDENR
Chuck Wakild, Director, DWQ, NCDENR
Dexter Matthews, Director, DWM, NCDENR
Sheila Holman, Director, DAQ, NCDENR
Kari Barsness, Director, LIA, NCDENR
Mariah Matheson, Research Division, NC General Assembly

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
QUARTERLY REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION

Covering the period October 1, 2011 to November 30, 2011

Per the requirements of G.S. 143B-282(b), the Environmental Management Commission (EMC) is submitting this quarterly report covering the period of October 1, 2011 to November 30, 2011 on the EMC's operations, activities, programs and progress. The next quarterly report will cover December 1, 2011 through February 29, 2012.

I. Nutrient Control Strategies Sections 2, 3, and 4 of Session Law 2005-190 (as amended by SL 2006-259 and SL 2009-486)

Nutrient Control Criteria – Section 2(b)

Per Section 2(b), the EMC continues to assess and identify nutrient control strategies and criteria necessary to prevent excess nutrient loading in each drinking water supply reservoir. The EMC is currently considering modifications to the chlorophyll-a surface water quality standard and will be hosting a forum addressing nutrient control issues in mid-2012.

Falls Lake - Section 3

The EMC is required to report its progress in assessing, identifying and adopting nutrient control strategies necessary to prevent excess nutrient loading in the Falls Lake water supply reservoir. Following an extensive stakeholder and rule-making process, permanent rules went into effect on January 15, 2011. Major actions are to be initiated over a 10-year first stage of implementation, with potential adaptive requirements under a second stage. Noteworthy groundwork occurred this quarter with the Division of Water Quality (DWQ) staff completing the initial review of and providing comments on fourteen Falls Lake local government draft new development stormwater programs. Revised final drafts of local government stormwater programs will be brought to the January 2012 EMC meeting for approval. In November, staff of the Division of Soil and Water Conservation and DWQ held the second meeting of a Watershed Oversight Committee that will implement the Agriculture rule. This committee is charged with overseeing farmer registration by January 2012 and then reviewing, updating and seeking EMC approval of agricultural accounting methods in March 2012.

Jordan Lake - Section 4 of Session Law 2005-190

Section 4 requires the EMC to report on progress toward developing and implementing a nutrient management strategy for reservoirs including Jordan Lake. The final set of Jordan Lake rules went into effect in August 2009. Timeframes for most new actions under the rules fall within nine years of the effective date of the rules.

The following actions were taken this quarter to support implementation: The Nutrient Scientific Advisory Board, which assists in implementing existing development stormwater requirements, held two meetings, and a Board subcommittee met three times. The Board is tasked with developing a set of best management practices and accounting recommendations to be presented to the Secretary of DENR in July 2012. The Board is also assisting DWQ in assigning existing development load reduction goals to the jurisdictions and state and federal entities in the watershed by July 2013. DWQ is reviewing local government new development stormwater programs that were submitted to DWQ in September 2011 for EMC approval by May 2012 and local implementation by summer 2012. Soil and Water Conservation districts are collecting data to conduct agriculture accounting in the watershed. The Jordan Watershed Oversight Committee, which administers requirements of the Jordan agriculture rule, will present accounting findings to the WQC in summer 2012. DWQ has been working with the NC Cooperative Extension Service on outreach for fertilizer management training that began in November and will continue through August 2012.

II. EMC Rulemaking Approvals

Adopted Temporary Rule to Defer Carbon Dioxide Emissions from Combustion of Biomass from Prevention of Significant Deterioration and Title V Requirements (496)

In November the EMC adopted a temporary amendment to 15A NCAC 02D .0544, Prevention of Significant Deterioration for Greenhouse Gases, to defer carbon dioxide (CO2) emissions from biomass from consideration for prevention of significant deterioration (PSD) purposes for a period of three years.

On July 20, 2011 the United States Environmental Protection Agency (USEPA) put in place a three year deferral of consideration of these emissions for purposes of the federal PSD permitting program while the agency completes its science and technical review of the issue of accounting for the net atmospheric impact of biogenic CO2 emissions. The deferral excludes from consideration CO2 emissions from bioenergy and other biogenic sources when determining whether a stationary source meets PSD and Title V permitting applicability thresholds, including those for the application of best available control technology (BACT). Stationary sources that combust biomass (or otherwise emit biogenic CO2 emissions) and construct or modify during the deferral period will avoid the application of PSD to the biogenic CO2 emissions resulting from those actions. The temporary amendment ensures that stationary sources would not have to unnecessarily complete a BACT analysis for biogenic CO2 and possibly be required to install equipment to control emissions during the three year deferral. The amendment to the state rule reflects the recent federal deferral of such emissions in the state PSD program.

III. Other EMC Actions

Approved Request to Proceed to Hearing on Permanent Rule Amendment to Defer Carbon Dioxide Emissions from Biomass from Prevention of Significant Deterioration Requirements

In November the EMC also approved a request to proceed to public hearing on the permanent rule amendment to 15A NCAC 02D .0544, Prevention of Significant Deterioration Requirements for Greenhouse Gases, to defer carbon dioxide emissions from biomass from prevention of significant deterioration requirements for three years. The EMC is soliciting comment on the economic assessment and information relative to human health effects and impacts to ecosystem services. Pursuant to the Administrative Procedures Act, the permanent rule would eventually replace the temporary rule adopted in November.

Considered Request for Adoption of Amendments to Open Burning Rules to Incorporate Session Law 2011-394 Requirements

The Air Quality Committee of the EMC approved adoption of amendments to the open burning rules required by Session Law 2011-394 and to update the name of the former Division of Forest Resources and requested EMC waiver of the EMC's rule requiring a 30-day delay between committee rule-making recommendations and EMC action thereon. During the 2011 legislative session, the General Assembly enacted S.L. 2011-394, An Act to Amend Certain Environmental Laws, which adjusted the setback requirements for permissible open burning. Amendments to 15A NCAC 02D .1900 are necessary to reflect the changes resulting from S.L. 2011-394 for consistency with the General Statutes in order to avoid confusion; however, per the S.L. 2011-394 Sections 2.(d) and 2.(g), these amendments are not subject to the publication of notice of text and public hearing requirements of the Administrative Procedures Act (APA) found in G.S. 150B-21.2 nor review by the Rules Review Commission (RRC) found in G.S. 150B 21.9 - 21.14. 15A NCAC 02D .1903, Open Burning Without An Air Quality Permit, is to be amended to change the setback requirement to 500 feet per S.L. 2011-394 Section 2.(d). 15A NCAC 02D .1904, Air Curtain Burners, is to be amended to change the setback requirement for air curtain burners to 300 feet per S.L. 2011-394 Section 2.(g). S.L. 2011-394 Sections 2.(d) and 2.(g) specify that the rule amendments adopted to implement these provisions in 2D .1903 and .1904 are to be substantively identical to S. L. 2011-394 Section 2.(c) and Section 2.(f), respectively. In addition, a technical amendment updating the reference to the former Division of Forest Resources to reflect its new name, the North Carolina Forest Service, is proposed for adoption.

The technical amendment does not require notice of text or hearing pursuant to G.S. 150B 21.5(a)(2); however, it does undergo review by the Rules Review Commission. Waiver of the EMC's rule requiring a 30 day delay between EMC committee recommendations on rule-making and EMC rule-making action was not approved. This rule-making action is scheduled for the EMC's January 12, 2012 meeting in accordance with the EMC's normal rule-making procedures.

January 15, 2012

Stephen T. Smith

Stephen T. Smith
Chair, Environmental Management Commission

N. C. ENVIRONMENTAL MANAGEMENT COMMISSION

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Darryl D. Moss
David B. Peden
Dickson Phillips III
Clyde E. Smith Jr.
Steve W. Tedder

March 8, 2012

To: ENVIRONMENTAL REVIEW COMMISSION
Jeff Judson, Commission Counsel, Environmental Review Commission

FROM: Stephen T. Smith, Chair, Environmental Management Commission

RE: EMC Resolution

Enclosed please find a resolution of the Environmental Management Commission asking the General Assembly to reconsider the portion of S.L. 2011-394, Section 2 which reduces the permissible open burning setback requirements of 15A NCAC 2D.1903.

Attachment

RESOLUTION of the N. C. ENVIRONMENTAL MANAGEMENT COMMISSION

WHEREAS, prior to July 1, 2011, 15A NCAC 2D .1903 (Open Burning Without a Air Quality Permit) required that open burning of land-clearing debris without a permit be at least 1,000 feet from any dwelling, group of dwellings or commercial or institutional establishment;

WHEREAS the N.C. General Assembly has enacted S.L. 2011-394, Section 2 of which reduces the permissible open burning setback requirements of 15A NCAC 2D .1903 to 500 feet;

WHEREAS, exposure to wood smoke can aggravate chronic health conditions including heart and lung diseases, and, even at lower levels of exposure to smoke, can particularly harm sensitive populations such as children and older adults;

WHEREAS, open burning regulations were among North Carolina's first air quality rules and are a foundational part of North Carolina's air quality program;

WHEREAS, negative health effects of exposure to smoke from open burning are likely to be greater at closer proximity (500 feet) than at a greater distance (1,000 feet);

WHEREAS, there are economically feasible alternatives to open burning of yard waste and land clearing debris which are not harmful to public health;

WHEREAS, as North Carolina continues to become more developed and as its population continues to grow, the potential for public health harm from open burning increases;

WHEREAS, the Department of Environment and Natural Resources' Division of Air Quality has implemented S.L. 2011-394 Section 2 consistent with the statute as of its effective date of July 1, 2011;

WHEREAS, members of the N.C. Environmental Management Commission have expressed concern regarding the negative impacts to public health resulting from decreasing permissible open burning setback requirements pursuant to S.L. 2011-394;

NOW, THEREFORE, BE IT RESOLVED THAT the N.C. Environmental Management Commission calls for the N.C. General Assembly to re-evaluate and re-consider the public health impact of reducing open burning setback requirements to 500 ft as established under Session Law 2011-394 Section 2, and to restore the 1,000 feet setback requirements for permissible open burning as previously provided by 15A NCAC 02D.1903.

This the 12th day of January, 2012.

Stephen T. Smith

Stephen T. Smith, Chairman
N.C. Environmental Management Commission

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011

U D

BILL DRAFT 2011-SBz-25 [v.16] (11/28)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
3/12/2012 3:11:13 PM

Short Title: State Air Toxics Program Reforms. (Public)

Sponsors: .

Referred to:

A BILL TO BE ENTITLED

AN ACT TO EXEMPT FROM STATE AIR TOXICS EMISSIONS CONTROLS THOSE SOURCES OF EMISSIONS THAT ARE SUBJECT TO FEDERAL EMISSIONS REQUIREMENTS, TO AUTHORIZE THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES TO REQUIRE PERMIT CONDITIONS THAT ELIMINATE UNACCEPTABLE RISKS TO HUMAN HEALTH, AND TO DIRECT THE DIVISION OF AIR QUALITY TO REVIEW THE STATE AIR TOXICS PROGRAM.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 143-215.107(a) reads as rewritten:

"(a) Duty to Adopt Plans, Standards, etc. – The Commission is hereby directed and empowered, as rapidly as possible within the limits of funds and facilities available to it, and subject to the procedural requirements of this Article and Article 21:

...

(5) To develop and adopt emission control standards as in the judgment of the Commission may be necessary to prohibit, abate, or control air pollution commensurate with established air quality standards. ~~This subdivision does not apply to that portion of the National Emission Standards for Hazardous Air Pollutants for asbestos that governs demolition and renovation as set out in 40 C.F.R. § 61.141, 61.145, 61.150, and 61.154 (1 July 1993 edition).~~ The Department shall implement rules adopted pursuant to this subsection as follows:

a. Except as provided in sub-subdivision b. of this subdivision, rules adopted pursuant to this subdivision that control emissions of toxic air pollutants shall not apply to any air emission source that is subject to any requirement under 40 C.F.R. Parts 61 and 63 (as amended) or 42 U.S.C. § 7412(j) (as amended).

b. Upon making a written finding that a source or facility presents or will present an unacceptable risk to human health, the Department may require the owner or operator of the source or facility to submit a permit application for any or all emissions of toxic air pollutants from the facility that eliminates the unacceptable risk to human health. The written finding may be based on modeling,

epidemiological studies, actual monitoring data, or other information that indicates an unacceptable health risk. If the Department requires the owner or operator of a source or facility to submit a permit application pursuant to this sub-subdivision, the Department shall report to the Chairs of the Environmental Review Commission on the circumstances surrounding the permit requirement, including a copy of the written finding.

...."

SECTION 2. The Environmental Management Commission shall amend its rules adopted pursuant to G.S. 143-215.107(a) so that they are consistent with the provisions of Section 1 of this act.

SECTION 3. The Division of Air Quality of the Department of Environment and Natural Resources shall review toxic air pollutant rules adopted pursuant to G.S. 143-215.107(a) and the implementation of those rules to determine if changes could be made to the rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining protection of public health. The Division shall conduct this review in consultation with interested parties. The Division shall report the results of its review, including recommendations, if any, to the Environmental Review Commission no later than November 30, 2012.

SECTION 4. This act is effective when it becomes law.

Bill Draft 2011-SBz-25 [v.16]: State Air Toxics Program Reforms.

2011-2012 General Assembly

Committee:	Environmental Review Commission	**Date:**	March 22, 2012
Introduced by:		**Prepared by:**	Jeff Hudson
Analysis of:	2011-SBz-25 [v.16]		Committee Counsel

SUMMARY: Legislative Proposal 2011-SBz-25 [v.16] would provide that State Air Toxics Program rules that control emissions of toxic air pollutants will not apply to any air emission source that is subject to federal emissions standards for toxic air pollutants.

BACKGROUND AND CURRENT LAW:

The State Air Toxics Program (Program) is a regulatory program administered by the Division of Air Quality (Division) in the Department of Environment and Natural Resources (Department). The Program is designed to control emissions of toxic air pollutants in order to protect human health.

The statute upon which the State Air Toxics Program is based, G.S. 143-215.107, was enacted in 1973. Current G.S. 143-215.107 directs the Environmental Management Commission (Commission) to develop and adopt air quality standards and to develop and adopt emission control standards necessary to prohibit, abate, or control air pollution in compliance with the air quality standards. The current air quality and emission control standards adopted by the Commission are found in 15A NCAC 02Q .0701 et seq. (Toxic Air Pollutant Procedures) and 15A NCAC 02D .1101 (Control of Toxic Air Pollutants).

BILL ANALYSIS: Legislative Proposal 2011-SBz-25 [v.16] would provide that State Air Toxics Program rules that control emissions of toxic air pollutants will not apply to any air emission source that is subject to any requirement under either:

- 40 C.F.R. Parts 61 and 63 (as amended): These regulations established by the United States Environmental Protection Agency (USEPA) require sources of toxic air pollutants to control emissions of toxic air pollutants through the use of maximum achievable control technologies or MACT.
- 42 U.S.C. § 7412(j) (as amended): This section of the federal Clean Air Act provides that if the USEPA fails to establish toxic air pollutant regulations for a particular category of sources subject to the federal program, a state must establish controls for sources within the category on a case by case basis.

Legislative Proposal 2011-SBz-25 [v.16] would also:

- Codify a provision of the State Air Toxics Program rules, the "Director's Call" provision, 15A NCAC 02Q .0712. This codified provision would authorize the Department of Environment and Natural Resources, upon a written finding that a source or facility presents or will present an unacceptable risk to human health, to require the owner or operator of the source or facility to submit a permit application for any or all emissions of toxic air pollutants from the facility that eliminates the unacceptable risk to human health. This provision would apply to any source or facility, including those that would otherwise be exempt from the State Air Toxics Program. If the Department requires the owner or operator of a source or facility to submit a permit application pursuant to this provision, the Department must report

to the Chairs of the Environmental Review Commission on the circumstances surrounding the permit requirement, including a copy of the written finding.

- Direct the Commission to amend the State Air Toxics Program rules so that they are consistent with the other provisions of the Legislative Proposal.
- Direct the Division of Air Quality to review the air toxics rules adopted pursuant to G.S. 143-215.107(a) and the implementation of those rules to determine if changes could be made to the rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining protection of public health. The Division will conduct this review in consultation with interested parties. The Division will report the results of its review, including recommendations, if any, to the Environmental Review Commission no later than November 30, 2012.

EFFECTIVE DATE: An act based upon this legislative proposal would become effective when it becomes law.

2011-SBz-25-SMSB-58 v1

Executive Summary

Background

In Session Law 2011-276, the North Carolina General Assembly directed the North Carolina Department of Environment and Natural Resources (DENR), the Department of Commerce (Commerce), and the Department of Justice, in conjunction with the nonprofit Rural Advancement Foundation International (RAFI), to study the issue of oil and gas exploration in the state and specifically the use of directional and horizontal drilling and hydraulic fracturing for natural gas production.

DENR researched oil and gas resources present in the Triassic Basins (Section 1 of this report), methods of exploration and extraction of oil and gas (Section 2), potential impacts on infrastructure, including roads, pipelines and water and wastewater services (Section 3), potential environmental and health impacts (Section 4), potential social impacts (Section 6), and potential oversight and administrative issues associated with an oil and gas regulatory program (Section 7).

S.L. 2011-276 directed the Department of Commerce, in consultation with DENR, to gather information on potential economic impacts of natural gas exploration and development (Section 5 of this report). Department of Commerce prepared Sections 5.A through 5.F of the report which discuss job creation and other projected economic impacts of natural gas drilling. DENR prepared Sections 5.G though 5.N which address the different financial tools (such as bonding requirements and severance taxes) used by oil and gas producing states to assure funding for reclamation of drilling sites, cover regulatory costs and offset public infrastructure costs.

The law directed the Consumer Protection Division of the Department of Justice to study consumer protection and legal issues relevant to oil and gas exploration in the state, including matters of contract and property law, mineral leases, and landowner rights (Section 8). The Consumer Protection Division was directed to consult with RAFI on the consumer protection issues.

Study Limitations

As requested by the General Assembly, this report analyzes the potential environmental, health, economic, social and consumer protection impacts that an oil and gas extraction industry may have in North Carolina. The analysis is constrained by the limited information available at this time. We do not have detailed or comprehensive information on the extent and richness of the shale gas resource in North Carolina. For purposes of this report we have been forced to extrapolate from data gathered from only two wells in the Sanford sub-basin; those well values have been averaged to project an estimate of the natural gas resource potentially available in that sub-basin. Since there are only two data points and the two wells have significantly different values, it is not clear how well the average value represents the resource throughout the Sanford sub-basin. This report generally uses the Sanford sub-basin as the basic unit for analysis of all impacts because the available data came from that sub-basin.

The Sanford sub-basin represents only a fraction of the total Triassic basin formations in the state – approximately 59,000 acres out of a total of 785,000 acres.

These limitations carry over into the assessment of both potential economic and environmental impacts. DENR projected the number of wells and total gas production *for the Sanford sub-basin,* using the limited data derived from averaging the values of two wells. Those projections are used throughout the report as the basis for assessing economic and environmental impacts.

Many impacts of natural gas extraction will vary based on local characteristics, such as water resources and even the weather. For example, the depth and quality of groundwater resources in the Triassic basins of North Carolina appear to be very different from conditions in the Marcellus shale formations in Pennsylvania. North Carolina does not seem to have as great a separation between potential drinking water resources and the gas-producing zone; understanding the geology and groundwater hydrology of North Carolina's shale formations will be critical to ensuring protection of drinkable groundwater. In terms of infrastructure impacts, weather can be an important factor. A local government official in Pennsylvania told DENR staff that when the natural gas industry first came to Pennsylvania from the South, oil and gas operators were surprised at how the harshness of the winters magnified the road damage caused by heavy oil and gas trucks.

There are some aspects of oil and natural gas extraction for which data is extremely limited even at a national level; the limited time available to prepare this report prevented us from taking into account additional research that is currently underway. This includes EPA's research on potential groundwater impacts in Pavillion, Wyo., and Dimock, Pa. and EPA's study of hydraulic fracturing and its potential impact on drinking water resources. EPA's first report of results related to drinking water is expected in 2012; the final report is not expected until 2014.

To our knowledge, no comprehensive studies are currently available on the long-term impacts to health from hydraulic fracturing for natural gas, and DENR is not qualified to conduct such a study. DENR recognizes that questions remain about health impacts. The EPA drinking water study may provide additional insight on heath effects. In March 2012, the New York State Assembly proposed $100,000 in its budget for an independent health impact study of hydraulic fracturing to be conducted by a school of public health following a model recommended by the Centers for Disease Control and Prevention.

Key Findings

North Carolina's potential shale gas resource

Most of the N.C. Geological Survey's information on potential shale gas resources in the state comes from the Sanford sub-basin of the Deep River geologic basin — a 150-mile-long area that runs from Granville County southwestward across Durham, Orange, Wake, Chatham, Lee, Moore, Montgomery, Richmond, Anson and Union counties into South Carolina.

The Deep River Basin is one of several similar geologic formations in North Carolina that cover approximately 785,000 acres.

The available organic geochemical and seismic data has caused NCGS to focus on an area of more than 59,000 acres in the Sanford sub-basin as the most promising location for organic-rich shale and coals from which natural gas can be extracted.

The shale formation in this area can be found at depths generally ranging between 2,100 and 6,000 feet below the surface. This particular shale formation has a maximum thickness of 800 feet and an average thickness that ranges from 180 to 540 feet.

Hydraulic Fracturing

Natural gas extraction by hydraulic fracturing involves drilling a well vertically and then horizontally into the shale formation. The natural gas production company perforates the well and then pumps fracturing fluid into the well under pressure to fracture the shale.

Fracturing fluids are composed primarily of water and a proppant (such as sand) to keep the fractures open. Water and sand represent between 98 percent and 99.5 percent of the fracturing fluid. The fluid also includes chemical additives used to condition the water. Additives may be used to thicken or thin the fluid, prevent corrosion of the well casing, kill bacteria or for other purposes.

The exact makeup of fracturing fluid varies from company to company and may also be adjusted based on conditions at the individual well site. Several hundred chemical compounds have been identified by the industry as chemicals that have been used in fracturing fluid. Any single fracturing fluid generally contains between 6 and 12 chemical additives.

Some chemicals that have been used in fracturing fluids, such as diesel fuel, have raised concern because of potential health impacts. EPA has discouraged use of diesel fuel in hydraulic fracturing.

Environmental Impacts

Water Supply: Hydraulic fracturing requires between 3 and 5 million gallons of water per well. To put this in perspective, a number of small cities in North Carolina withdraw 5 million gallons per day to serve their water system customers.

Based on some informed assumptions about the number of wells that could potentially be located in the Sanford sub-basin and the pace of well development, there appear to be adequate surface water supplies to meet the needs of the industry.

The timing of water withdrawals will need to be managed, however, to avoid injury to other water users and the environment. A 3 million gallon withdrawal made over a three-day period (which is technically possible for the industry) has a much greater potential impact than a 3 million gallon withdrawal made over the course of three weeks. In the absence of permit conditions to prevent rapid withdrawals during drought or seasonal low flow periods, streams can run dry and other water users may be harmed.

Water Quality: In the Sanford sub-basin, there appears to be much less separation between groundwater used for drinking water and the gas-producing layer than in other gas-producing states. Water supply wells of up to 1,000 feet deep have been found in North Carolina's Triassic Basins and the depth to which freshwater extends is unknown. Some of the shale that might be

tapped for natural gas in the Triassic Basins of North Carolina lies at depths of 3,000 feet or less. (By contrast, the Pennsylvania shale gas resource lies at depths of roughly 10,000 feet or more and the deepest water supply wells are generally no more than 600 feet deep.)

At least two recent studies have found higher levels of methane in groundwater near natural gas wells that had been hydraulically fractured. In Pavillion, Wyo., EPA found methane of thermogenic origin and organic chemicals consistent with those used in hydraulic fracturing fluids in both monitoring wells and water supply wells. Conditions in Pavillion are not necessarily representative of most shale plays, however; the hydraulic fracturing that occurred in Pavillion involved injection of hydraulic fracturing fluids directly into the same formation tapped by water supply wells.

A study in Pennsylvania found methane water supply wells close to active exploration and production wells in the Marcellus shale have higher levels of dissolved methane than wells farther away. The study did not find constituents of hydraulic fracturing fluids in any of the water supply wells that were sampled. The study did find methane in water supply wells. The methane had an isotopic signature indicating that it originated from deep, thermogenic sources consistent with a Marcellus shale source, rather than from shallow biogenic sources. The lack of pre-drilling groundwater samples make it difficult to definitively link the methane to drilling practices.

Water quality problems have been associated with oil and gas operations generally; the problems can result from a number of production activities other than hydraulic fracturing. A Groundwater Protection Council study found that most Texas groundwater contamination incidents related to oil and gas activity reviewed were traced to either the production phase of well operations or involved waste management and disposal.

Oil and gas exploration and production can disturb large areas of land to develop access roads, well pads, impoundments and other infrastructure. These activities have impacts very similar to the stormwater impacts of any large development project: sedimentation and erosion, water pollution, increased peak discharges, increased frequency and severity of flooding, and other stormwater concerns. Unlike other construction projects, oil and gas exploration and production activities are exempt from federal Clean Water Act stormwater requirements.

Air Quality: Federal Clean Air Act standards have only been adopted for natural gas processing facilities. In 2011, EPA developed draft standards for air emissions from natural gas exploration and production activities. As proposed, the rules would affect gas wellheads, centrifugal compressors, reciprocating compressors, pneumatic controllers, storage vessels and sweetening units. Until the proposed rules go into effect, no federal new source performance standards or hazardous air pollution standards apply to emissions from these natural gas exploration and production activities. EPA had originally planned to finalize the rules by Feb. 28, 2012, but that timeline has been pushed back due to an extended public comment period.

A recent New York Environmental Impact Statement estimated that statewide NOx emissions could be increased by 3.7 percent from hydraulic fracturing operations and as much as 10.4 percent in the upstate New York area where the Marcellus Shale is located. These increases in

NOx emissions raise concerns for the impact on ozone concentrations and the state's ability to attain and maintain compliance with the federal ozone standard.

With the exception of internal combustion engine standards, North Carolina's state air toxics standards will be the only air quality rules that apply to many natural gas production activities, at least until EPA finalizes the proposed new source performance standards and hazardous air pollution rules for natural gas production.

Earthquakes: Hydraulic fracturing fluid under pressure cracks the surrounding rock; these cracks generate vibrations while breaking and can be picked up by sensitive geophones.

Data from other states suggests that the process of hydraulic fracturing causes microseismic events that do not pose a threat to the environment or human health or safety. An Oklahoma Geologic Survey study of an earthquake complaint near a hydraulic fracturing operation found that seismographs had recorded as many as 50 very small events on the day of the complaint. Most of the earthquakes occurred within a 24-hour period after the hydraulic fracturing operations had ceased and were so minor (between 1 and 2.4 on the Richter scale) that they could not be felt.

Most reports of significantly increased earthquake activity have occurred in regions where disposal wells are operated and related to underground injection of waste rather than hydraulic fracturing. Only a small fraction of injection wells have caused significant seismic activity. Limiting injection volumes, decreasing pressure and distributing the waste between more disposal wells have been shown to reduce and even eliminate induced seismicity, while reusing and recycling of wastewater can reduce the need for other waste management options.

Wastewater and Solid Waste: Between 9 and 35 percent of the fluid pumped into a well for hydraulic fracturing returns to the surface as "flowback" shortly after fracturing. During the remainder of the productive life of the well, a much smaller volume of wastewater is generated more or less continuously as the well produces gas; this wastewater is produced water.

In many states, flowback or produced water from a drilling operation can be disposed of by underground injection. N.C. General Statute 143-214.2(b) prohibits the use of wells for waste disposal.

It is not clear that injection wells would be a feasible option for managing produced waters from a gas well in the Triassic Basins of North Carolina. The areas with potential for natural gas development have not been sufficiently characterized to determine whether the formations would be suitable for disposal of shale gas production wastewater. The sedimentary rocks of these basins generally have very low permeability, and natural fractures are responsible for nearly all of the permeability and groundwater movement in these basins. Disposal by injection into fractured rock presents difficulty in predicting the fate and transport of the injected wastewaters. These conditions suggest that Triassic Basins in North Carolina generally do not have suitable hydrogeologic conditions for disposal by injection.

Some wastewater streams can go to a municipal wastewater treatment plant. These waste streams can be difficult to treat in a conventional wastewater treatment plant, however, and it would be advisable to require pretreatment.

A number of states allow land-application of produced water from hydraulic fracturing. The acceptability of wastewater for that purpose may depend on its quality at the time of land application since high levels of salts and chlorides can be a problem.

Chesapeake Energy is currently recycling and reusing 100 percent of the flowback water that returns to the surface (only a small percentage of the volume of water used in hydraulic fracturing) by a filtering process.

EPA has exempted "drilling fluids, produced waters, and other wastes associated with the exploration, development or production of crude oil, natural gas or geothermal energy" from regulation under the Resource Conservation and Recovery Act (RCRA) -- the federal statute that regulates hazardous waste.

Since some exploration and production wastes may have the characteristics of hazardous wastes, but are not regulated under RCRA, oil and gas-producing states have generally developed specific standards for handling exploration and production wastes. North Carolina does not have standards that specifically address disposal of or transportation of exploration and production waste.

Since North Carolina statutes and rules have not been written to address these particular types of wastes, existing state rules would allow disposal of all RCRA-exempt exploration and production wastes (other than oils and liquid hydrocarbons) in a municipal solid waste (MSW) landfill. Although North Carolina has strong standards for design and construction of both industrial and MSW landfills, those standards were not developed for disposal of hazardous waste.

Economic Analysis

The economic impact analysis focuses on the statewide economic impact of gas drilling activities in the Sanford sub-basin. (The Sanford sub-basin is approximately 59,000 acres of the 785,000 acres of the Triassic Basins in North Carolina.) The analysis does not take site preparation, leasing of land, hydraulic fracturing or extraction, production or transmission of gas into consideration.

Review of studies from other parts of the country show that a large infusion of economic activity from shale gas drilling will increase the incomes of some individuals and communities and will add jobs. Without reliable expenditure inputs for North Carolina, however, it remains uncertain how much wealth, income or benefits from long-term employment would accrue to Lee, Chatham and surrounding counties.

For its analysis, the Department of Commerce used the IMPLAN model. IMPLAN allows researchers to develop local level input-output models to estimate the economic impacts associated with marginal changes in the economy, such as "shocks" of new production or output.

The model estimates that North Carolina vendors will provide only 36 percent of drilling investments. Since North Carolina does not presently have a developed fossil fuel extraction industry, there will likely be substantial economic "leakages" as dollars are spent outside the

North Carolina economy. For example, drilling requires specialized equipment that is not available from in-state companies.

The IMPLAN model estimates drilling activities in the Sanford sub-basin would sustain an average of 387 jobs per annum over the seven-year time period studied:

- In the peak well year, drilling activities are estimated to sustain 858 jobs over a one-year period.
- In Year 1, the year with the lowest level of drilling expenditures, the IMPLAN model estimates that 59 jobs will be either created or partially supported by these expenditures.

At the completion of all drilling activities in the state, it is estimated the economy will have increased output by $453 million. Output represents the level of all economic activity from production and is typically larger than value added impacts, which measure the direct change in North Carolina's gross domestic product (GDP). Anticipated drilling activities are estimated to positively affect the state's GDP by $292 million by year 2019.

It is not likely that North Carolina's shale play will be developed in the near-term. IHS Global Insight, in a December 2011 study for the American Natural Gas Alliance, reported that six prominent plays are expected to account for more than 90 percent of U.S. shale capacity by 2035. North Carolina was not on this list and, at this time, does not appear on U.S. Geological Survey maps of North American shale plays.

Low natural gas prices also make activity in North Carolina unlikely in the near-term. The Energy Information Administration's preliminary 2012 *Annual Energy Outlook* assumes that with increased production, average annual wellhead prices for natural gas will remain below $5 per thousand cubic feet (2010 dollars) through 2023. Low prices make it less likely that the industry will move from areas already in production to a new and unproven area.

Bonding: North Carolina Session Law 2011-276 revised the amount of the bond required for an oil and gas-drilling permit to $5,000 plus $1 per linear foot. Under North Carolina's law, the bond only covers proper closure and abandonment of the well. The bond does not cover the costs of restoring the surface of the site to pre-existing conditions or remediation of any contamination caused by the drilling operation.

States vary significantly in the amount of bond required per well, but typically the uses of those bonds extend beyond well closure and often cover site reclamation.

As one measure of the adequacy of bond requirements for wells on public lands, the General Accounting Office (GAO) looked at the cost to the Bureau of Land Management of reclaiming orphan wells. Over a 21-year period, BLM spent about $3.8 million to reclaim 295 orphaned wells, or an average of about $12,900 per well. The GAO report states that "the amount spent per reclamation project varied greatly, from a high of $582,829 for a single well in Wyoming in fiscal year 2008 to a low of $300 for 3 wells in Wyoming in fiscal year 1994." The BLM also estimated the costs of wells it has yet to reclaim at approximately $1.7 million for 102 orphaned wells, an average of roughly $16,700 per well.

Severance Taxes: North Carolina's Oil and Gas Conservation Act currently sets the state's severance tax for natural gas at 5/100 of a cent – $.0005 per 1,000 cubic feet of gas. The revenues can only be used to pay the costs of administering the law.

North Carolina has one of the lowest severance taxes in the nation. With the exception of those states that do not assess any severance tax, North Carolina's tax rate was the lowest of all states for which severance taxes were identified as part of this study. Maryland, New York and Pennsylvania do not assess severance taxes on the production of natural gas, however, Pennsylvania recently enacted a law imposing an "impact fee" on natural gas production, and New York assesses a "property type production tax" on the amount of natural gas produced.

Community, Infrastructure and Social Impacts

In Pennsylvania, road impacts have been a major problem for municipalities in the Marcellus shale region. Gas development significantly increases truck traffic on roads that often were not designed for such heavy use. For many of Pennsylvania's small towns, road maintenance and repair accounts for the largest part of the town budget.

New York's EIS estimated 1,148 one-way heavy-duty truck trips and 831 one-way light-duty truck trips per well during the construction phase of gas development. For early well pad development, this is a total of 2,296 round-trip heavy-duty truck trips and 1,662 round-trip light-duty truck trips per well when all water is transported by truck.

In some states, natural gas production companies have entered into road maintenance agreements with local government – committing to return the roads to good condition.

Pennsylvania recently enacted a local option impact assessment to provide additional revenue to counties and towns affected by drilling activity.

Significant increases in truck traffic can lead to an increase in accidents and increased demand for traffic control. Both place additional demand on police and other emergency services. Given the volume and nature of the liquids being transported, accident response can be both more complex and more time-consuming than a typical one- or two-car accident.

Spills of hazardous chemicals require labor- and time-intensive responses from law enforcement and environmental agencies. In regions unaccustomed to oil and gas activity, the specialized nature of the response required for spills, explosions or fires related to the industry might necessitate new equipment, training and staff. This can place a special strain on rural areas still served by volunteer fire and rescue services.

As drilling activity has increased in certain parts of the United States, rural areas and small towns have, in some cases, been overwhelmed by the demand for worker housing. The impact of gas production on housing costs and availability likely depends on three key factors: 1) the speed and scale of industry growth in a given community; 2) the existing housing capacity of a community before drilling begins; and 3) the industry's need to import workers skilled in gas production activities.

Property owners who control the mineral rights to economically recoverable gas resources under their land may see substantial increases in property values. Analysis claimed that the

taxable value of oil and gas properties in Texas' Barnett shale region increased from $341 million to $5.9 billion, a 1,730 percent increase, from 2000-2005. Other studies of property values have generally shown much more modest increases.

Increased value can be attributed to two financial benefits to property owners: bonuses upon signing an oil and gas lease agreement and royalty payments. Lease agreements can range anywhere from $5 per acre to $20,000 per acre. On properties where lease agreements have not been signed, potential buyers may factor an expected bonus payment into the value of the property. Mineral owners receive royalties on income from gas production, typically earning 12.5 percent to 20 percent of the gas revenue generated at their wellhead.

Regulatory Program

The fact that oil and gas production activities are exempt from a number of federal environmental statutes that otherwise apply to industrial activities places a special burden on oil and gas-producing states to create adequate state regulatory programs.

Storage and disposal of oil and gas wastes have been exempted from federal hazardous waste regulation, specifically to allow states to develop tailored programs for management of those wastes. Congress has also deferred to the states to regulate stormwater runoff from drilling sites, exempting those sites from Clean Water Act permitting requirements for construction stormwater and industrial stormwater discharges.

States that have a long history of oil and gas production typically have very detailed regulations for well siting, well construction, wastewater disposal, storage and disposal of solid wastes, and water use. Since North Carolina does not have an active oil and gas industry, the state does not have standards appropriate for the special nature of these activities and the waste products generated in the process.

Guidelines for state oil and gas regulatory programs developed by the State Review of Oil and Natural Gas Environmental Regulations (STRONGER) recommend:

- Standards for casing and cementing sufficient to handle highly pressurized injection of fluids into a well for purposes of fracturing bedrock and extracting gas.
- Rules requiring the driller to identify potential conduits for fluid migration; address management of the extent of fracturing; and identify actions to be taken in response to operational or mechanical problems.
- Standards for dikes, pits and tanks, including contingency planning and spill risk management procedures.
- Waste characterization, including testing of fracturing fluids. Waste should be tracked to ensure appropriate disposal.
- Prior notification of fracturing activity.
- Assessment of water use for hydraulic fracturing in terms of volume in light of water supply, competing water uses and the environmental impacts of withdrawing water for

fracturing. Use of alternative water sources and recycling of water should be encouraged.

Recommendations for siting standards, such as setbacks from streams, wetlands and floodplains, can be found in the New York Department of Environmental Control EIS and in recent legislation enacted in Pennsylvania.

In the last three years, a number of states have moved to require disclosure of the chemicals used in hydraulic fracturing fluids to state regulatory and emergency response agencies. Several states have also required disclosure to the public with appropriate safeguards for proprietary information.

Oil and gas producing states have also found it necessary to address the issue of local authority to regulate natural gas production activities. Several states that have comprehensive state oil and gas regulatory programs continue to allow local governments to exercise some degree of planning and zoning authority with respect to production activities.

Conclusions and Recommendations

After reviewing other studies and experiences in oil and gas-producing states, DENR believes that hydraulic fracturing can be done safely as long as the right protections are in place. It will be important to have those measures in place before issuing permits for hydraulic fracturing in North Carolina's shale formations. A number of states have experienced problems associated with natural gas exploration and development because the appropriate measures were not in place from the beginning – forcing both the state and the industry to react after damage had already been done. DENR has identified a number of immediate recommendations for management of natural gas exploration and development activities. A complete oil and gas permitting program will require more detailed standards than it is possible to provide in this report and those standards should be based on conditions in North Carolina. Conditions in the Triassic Basins of North Carolina are not identical to those found in Pennsylvania or other gas-producing states. For example, a better understanding of the depth of usable groundwater in the Triassic Basin will be necessary to set well construction standards that will adequately protect drinking water resources.

Based on the research and analysis in this report, the Department of Environment and Natural Resources in consultation with the Department of Commerce developed the following recommendations for the General Assembly. It should be noted that these recommendations do not take into account information from the Department of Justice's section on consumer protection, because DENR had not received that section of the report in time for preparation of the recommendations. These recommendations also do not take into account public comments, which will be collected in before the report is finalized.

A brief description of each recommendation is listed; a more detailed explanation of each recommendation is included in Section 9. The recommendations are not listed in order of priority.

1. **Collect baseline data including groundwater, surface water and air.**

2. **Require oil and gas operators to prepare and have a DENR-approved Water Management Plan and limit water withdrawals to 20 percent of the 7Q10 stream flow.**
3. **Enhance existing oil and gas well construction standards to address the additional pressures of horizontal drilling and hydraulic fracturing.**
4. **Develop setback requirements and identify areas (such as floodplains) where oil and gas exploration and production activities should be prohibited.**
5. **Develop a state stormwater regulatory program for oil and gas drilling sites.**
6. **Develop specific standards for management of oil and gas wastes.**
7. **Require full disclosure of hydraulic fracturing chemicals and constituents to regulatory agencies. With the exception of trade secrets, require public disclosure of hydraulic fracturing chemicals and constituents.**
8. **Prohibit the use of diesel fuel in hydraulic fracturing fluids.**
9. **Improve data management capabilities and develop an e-permitting program.**
10. **Ensure that state agencies, local first responders and industry are prepared to respond to a well blowout, chemical spill or other emergency.**
11. **Develop a modern oil and gas regulatory program, taking into consideration the processes involved in hydraulic fracturing and horizontal drilling technologies, and long-term prevention of physical or economic waste in developing oil and gas resources.**
12. **Keep the environmental permitting program for oil and gas activities in DENR where it will benefit from the expertise of state geological staff and the ability to coordinate air, land and water quality permitting.**
13. **Develop a coordinated permitting process.**
14. **Address the distribution of revenues from oil and gas excise taxes and fees to support the oil and gas regulatory program, fund environmental initiatives and support local governments impacted by the industry.**
15. **Identify a source of funding for repair of roads damaged by truck traffic and heavy equipment.**
16. **Clarify the extent of local government regulatory authority over oil and gas exploration and production activities.**
17. **Complete additional research on impacts to local governments and local infrastructure.**
18. **Complete additional research on potential economic impacts.**
19. **Address the natural gas industry's liability for environmental contamination caused by exploration and development, particularly for groundwater contamination.**
20. **Provide additional public participation opportunities**

Recommendations on issues related to property rights and consumer protection will be added when Section 8 of the report has been completed.

Control of Toxic Air Pollutants in North Carolina

DENR, Division of Air Quality

ERC Meeting - March 22, 2012

Recap from 09/28/11 Presentation

- Toxic air pollutants – known to cause cancer or other serious health effects
- Federal Approach
  - Identified source categories (e.g., wood furniture-surface coating, boilers, etc.) for which technology standards would be developed
  - Did rulemaking to set technology based emission standards
  - Facilities comply with technology standards
  - EPA is required to evaluate whether any residual risk remains 8 years after technology standard was established, and, if necessary, revise the standards to address such risk

Recap from 9/28/11 Presentation

- State Approach
  - Identified the toxic air pollutants of concern in NC
  - Secretary's Science Advisory Board on Toxic Air Pollutants study exposure data and make recommendation as to the health based standard for a given toxic pollutant
  - Environmental Management Commission adopts health based standards via rulemaking
  - Permitted sources evaluate whether health based standards are being met at the property boundary

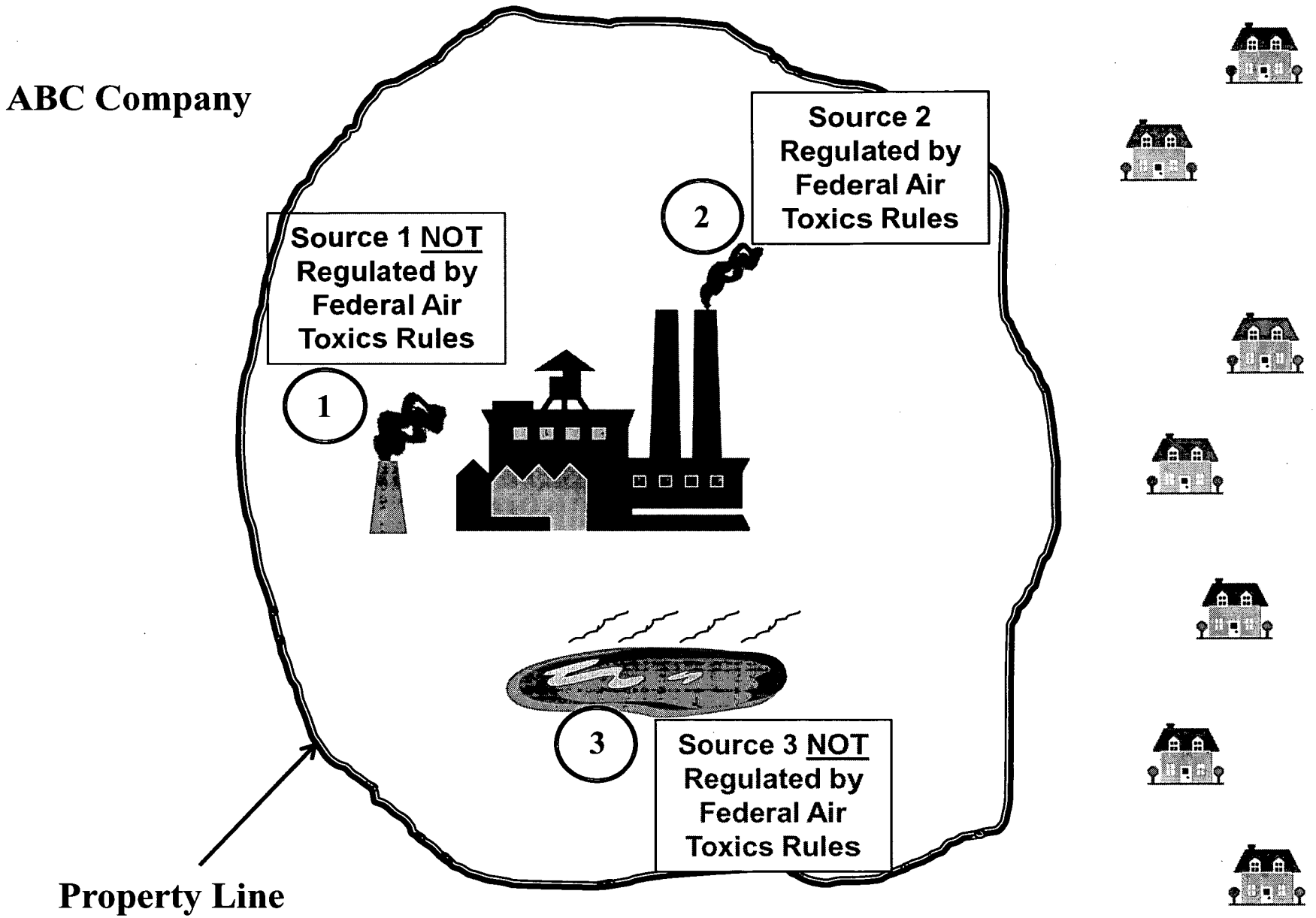
Proposed Legislation

- State Air Toxics rules will not apply to any air emission source that is subject to fedral requirements:
  - EPA rules that require control of toxic air pollutants, or
  - A permit issued under Section 112(j) of the Clean Air Act, which requires States to establish toxic emission standards when EPA fails to do so for a given industrial sector

Proposed Legislation

- Authorizes DENR to require a federally regulated source or facility to meet the requirements of the state air toxics program if DENR makes a written finding that a source or facility presents or will present an unacceptable risk to human health
- DAQ to review rules to determine if additional regulatory reform can be accomplished while maintaining protection of public health. Report due by November 30, 2012

Example Illustrating State and Federal Air Toxics Programs



Source: DENR-DAQ

What would change with passage of proposed legislation?

- Facilities – would not include emission sources subject to federal rules in state air toxics facility-wide modeling during permitting.
- State – would review permit application to determine if a closer look at all air toxics emissions sources is warranted, and take action if unacceptable health risk is found.
- State – would revise air toxics rules to reflect changes made in the legislation.

What would not change with passage of proposed legislation?

- Air quality permits would continue to cover all emissions sources at a facility, both federal and state requirements.
- DAQ will still receive a complete periodic emission inventory from each facility that will include the emissions from all federally regulated sources.
- DAQ inspection frequency of all permitted facilities to ensure compliance with both federal and state rules.
- Protection of public health consistent with current health based standards.

Questions from February ERC Meeting

- How are other states implementing their state programs and the federal air toxic program?
- Examples are Virginia and South Carolina
- Both states have similar exemptions for federally covered emission sources.
- One difference is that the South Carolina exemption only covers toxic air pollutants regulated under the federal standard.
- Both states have the ability to call in facilities if public health is found to be at risk.

Questions from February ERC Meeting

- What percentage of emissions sources are covered by the federal program?
- Best estimate is about 45% of the emission sources are now or about to be covered by the federal rules.

Questions from February ERC Meeting

- What percentage of emissions are covered by the federal program?
- Best estimate is about 66% of the 2009 toxic air emissions in North Carolina are now or about to be covered by federal rules. Those emissions will decline as those sources complete installation of the federally required air pollution controls.

Key Points

- Updates the State Air Toxics rules to fully consider the more robust federal regulatory framework that did not exist when the State Air Toxics rules were first developed.
- Serves the public's interests by retaining the regulatory tools to address any unacceptable health risks from sources of toxic air emissions.
- Provides continued environmental protections for sources not covered by federal regulations.
- Increases the implementation efficiency of the State air toxics rules by reducing repetitive modeling.

March 20, 2012

To Members of the NC Legislature:

As North Carolina medical professionals, we are writing to you with concern about recent reports that state legislators may be considering dismantling or weakening the crucial Air Toxics Program in North Carolina. The EPA links exposure to toxic air pollution to fetal death, cancer, pediatric respiratory disease, adult respiratory and cardiac disease and premature death. Children, pregnant women, and senior citizens are at risk for serious health problems if the air they breathe is contaminated by nearby industrial emissions – emissions that they are powerless to control.

When drafting the North Carolina rules in 1990, our state's Department of Environment and Natural Resources (DENR) identified toxic air pollutants emitted in North Carolina that could harm the health of North Carolinians. During 2010, North Carolina industries self-reported releasing over 34 million pounds of toxic substances and nearly 1.5 million pounds of cancer causing chemicals in air emissions. These emissions included PCBs, dioxins, asbestos, arsenic, cadmium, hexavalent chromium, mercury, selenium, formaldehyde, cyanide, benzene, toluene and dozens of known carcinogens that are covered by existing state regulations designed to protect the public health.

The intent of the air toxics program – which is distinct from technology-based federal programs aimed at toxins of concern on a national level – is safeguarding the health of North Carolinians, by protecting communities near heavy industry from exposure to levels of toxic air pollutants that have been determined to create harmful health effects. And the program is working. Since adoption of the rules, there has been a steady decline in reported toxic air emissions—emissions reported in 2009 were about one-third the levels reported in 1998.

Federal rules are source-specific and do not address all emission sources at a facility. For example, federal rules for pulp and paper mills don't cover sources that account for about 37% of facility-wide toxic air emissions. In addition, federal rules set standards for only a limited number of pollutants and do not address all air toxics. In the case of pulp and paper mills, these rules do not cover 11 compounds such as ammonia, hydrogen sulfide, and methyl mercaptan that are evaluated under the state program because they are considered a health threat locally, despite not rising to the concern level nationally.

Now is *not* the time to weaken North Carolina's protective Air Toxics Program. North Carolina's natural beauty and clean air make this state a destination for families, tourists, and business investments. Having more toxic air pollutants in the air we breathe will only diminish our state's appeal and will certainly decrease public health, especially for seniors, children, and those with existing medical conditions.

If the legislature's attempts to weaken the Air Toxics Program are successful, it will be paid for by personal health tragedies and medical expenses for many families in North Carolina. These costs are assessed to the people of the state and are shown to far outweigh any additional administrative costs the program may place on the polluters themselves.

Sincerely,

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10.

Comments on proposed Air Toxics Legislation

Dan Conrad, Legislative Counsel, NC Conservation Network

Environmental Review Commission Meeting

March 22, 2012

Regulation and the Economy

* Numerous studies show the benefits of regulation to the economy.
* Businesses choose to locate here because of high quality of life.
* North Carolina should seek to add jobs that add a net benefit to the economy.

Permitting

* Allows a company or industry to do something that is otherwise prohibited by law:
  * In this case the emission of Toxic Air Pollutants on to others' property
* Indemnification
* Burden?

Proposed Legislation

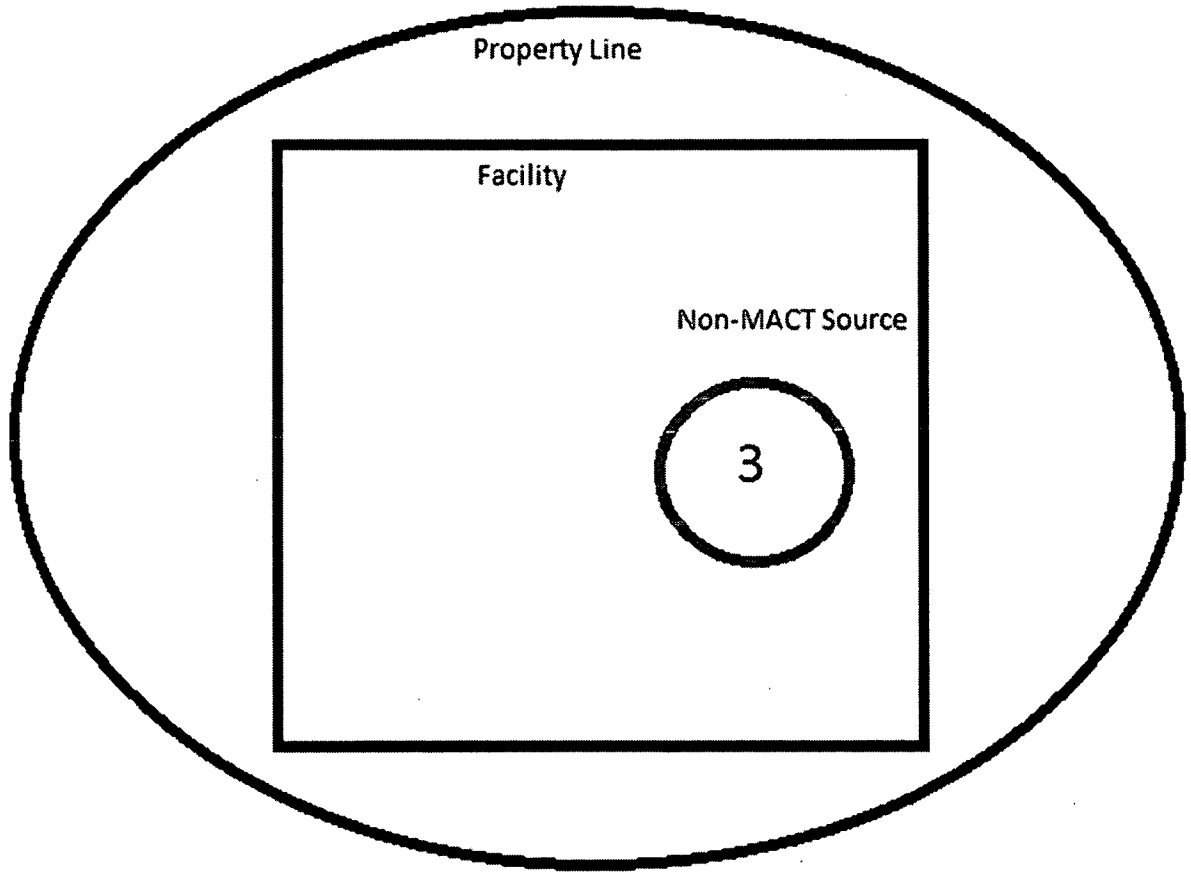
* Analysis of the Legislation:
  * Primary goal to reduce the modeling requirements in the Air Toxics Program by exempting federally regulated sources.
  * Shifts the default position from in the program to out of the program for 2/3rds of toxic air pollution in the State.
  * Director's Call to serve as "public health backstop"

Concerns

* Director's Call Concerns
  * Program could shift from preventative to retroactive protection.
  * Director's Call framework lacks certainty.
  * Interplay with S781.
  * Funding for DENR with new responsibilities.

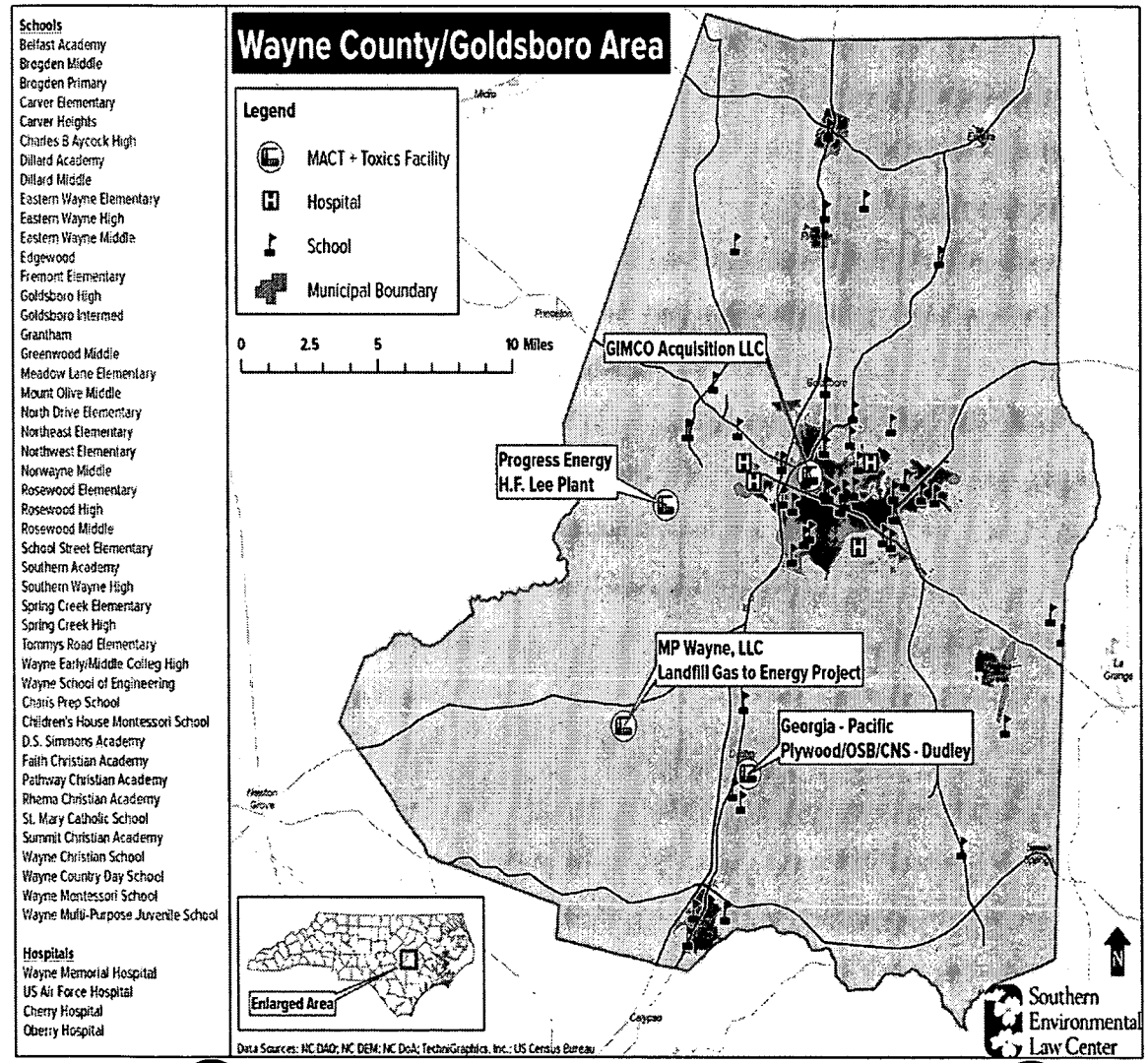
Concerns cont.

* Modeling Concerns:
  * When already required for a non-exempt source, modeling does not include all sources at a facility.



Concerns cont.

* MACT/Federal regulation is a one size fits all technology based approach:
  * Same MACT if a facility is next to a school as if it were in the middle of a 300 acre field.



Concerns cont.

* Toxins Unique to North Carolina.
* Exemption Loopholes:
  * Proposal exempts sources subject to "any requirement" of Parts 61 and 63 of the C.F.R.
  * Purely record keeping requirements exist in Parts 61 and 63 for sources not subject to emissions regulation.

  Example: 40 C.F.R. §63.1(b)(3)
    * "(3) An owner or operator of a stationary source who is in the relevant source category and who determines that the source is not subject to a relevant standard or other requirement established under this part must keep a record as specified in §63.10(b)(3)."

Suggestions

* Strengthen the Director's Call to make it mandatory to both review facilities and exercise the Director's Call when objective criteria have been met.
* When modeling is required for a non-exempt source, include all sources at a facility in that modeling.
* Add proximity to urban areas/schools and emission of TAPS as factors in triggering the Director's Call.
* Change the exemption from subject to "any requirement" to subject to an established "Emission standard" or "Equivalent emission limitation."
* Add a reporting requirement on the implementation of the legislation.

Conclusion

* The economy and public health protection are not mutually exclusive.
* Several concerns with the proposal as it shifts a significant proportion Toxic Air Pollution out of the program.
* There are ways to address these concerns that do not result in any increase in modeling for almost all facilities from what would be required in the proposed legislation.
* Failure to address these concerns unnecessarily increases threats to public health.

Questions and Contact Information

* Questions?

* Contact Information:

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MCIC

MANUFACTURERS AND CHEMICAL INDUSTRY COUNCIL
OF NORTH CAROLINA

Presentation to the Environmental Review Commission

22 March 2012

Preston Howard

THANK YOU!

- Representative Gillespie
- DENR Staff
- Legislative Staff

The State Program Affects Our Competitiveness

- In the global market our companies need flexibility to change quickly in order to remain competitive
- Modeling every change increases costs and time from concept to production – often with little or no environmental benefit
- Dual regulation of individual sources by both State and Federal programs results in unnecessary and costly permit delays and duplicative reporting requirements that are not experienced in our neighboring states
- Startup in other SE states – quicker & less costly
- Project costs and time lines matter in today's competitive marketplace!

Air Toxics Reform

- Its about more than just a reduction in paperwork and administrative costs for regulated sources
- Recognition of an effective Federal program that was nonexistent when the State program was adopted
- Eliminating duplicative regulation of individual sources
- Preserving important health protections of the current program
- **Its about improving our competitiveness!**

Eliminate State Air Toxics Program



PLEASE SUPPORT

the

common sense reforms

called for in

Representative Gillespie's

Draft Bill

Preston Howard

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18.

Status of Orphaned Inactive Hazardous Substance or Waste Disposal Sites

Charlotte Jesneck
Inactive Hazardous Sites Branch
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North Carolina Department of Environment and Natural Resources

Status of Orphaned Inactive Hazardous Substance or Waste Disposal Sites

- Review of HB 45 (2011 Session) implementation
- Overview of orphaned sites under the Inactive Hazardous Sites Response Act

Risk-Based Remediation of Industrial Sites

- HB 45 (2011 Session) establishes option for risk-based remediation of industrial sites
- Pre-Existing risk-based remediation programs: Underground Storage Tank, Dry Cleaner Solvent Cleanup Act, & Pre-Regulatory Landfill Programs
- Risk-based remediation already available for soils
- What's new: Groundwater

Risk-Based Remediation of Industrial Sites

- Remediation under:
  - Inactive Hazardous Sites Response Act
  - Resource Conservation & Recovery Act sites
  - National Priorities List sites
  - 15A NCAC 2L groundwater corrective action requirements
  - Oil Pollution and Hazardous Substances Control Act (excluding petroleum underground storage tank releases)

HB 45 Eligibility Criteria

- Property is or has been primarily used for manufacturing of commercial products
- Contaminant release reported to the DENR prior to March 1, 2011
- No soil or groundwater contamination off property at time remedial action plan is submitted
- No contaminant will migrate to adjacent properties above unrestricted use standards

Risk-Based Remediation of Industrial Sites

- Eligibility guidance on DENR web site *http://portal.ncdenr.org/web/wm/quick-links*
- DENR setting up contracts to assist in review of data provided by those applying for alternate cleanup levels under HB45
- Several inquiries, but no parties seeking alternate cleanup levels yet

Inactive Hazardous Sites Response Act

- Inactive Hazardous Sites Response Act addresses properties contaminated with hazardous substances
- Prior to the 1980s, virtually no regulations on disposal of solid and hazardous wastes
- Thus old disposals/discharges of various chemical-containing wastes
- Also, newly occurring spills of products containing hazardous substances

Sites include:

- Abandoned chemical wastes
- Spills and disposal of various chemicals on manufacturing and other properties
- Residential properties with contaminated soils/groundwater from previous uses or discharges by homeowner

Inventory of Sites Contaminated With Hazardous Substances

- Currently 1930 open contaminated site cases
- 62 new sites on average discovered each year
- 14 sites completed and assigned "No Further Action Status" on average each year
- 453 sites currently assigned "No Further Action Status"
- Staff are able to work on about 150-160 high risk sites with and without responsible parties at a time

What Makes a Site "Orphaned"?

- Discharger is bankrupt or out of business
- Discharger does not have sufficient funds to address
- Cannot determine what party discharged the contamination

Difficulties in Determining Responsibility

- Not required to keep records of spills and disposal prior to the 1980s
- Many operators in succession may have used same chemicals
- High cost of cleanup (thousands to millions of $) an incentive not to be forthcoming with facts

Orphaned Sites

- Currently 323 known orphaned hazardous substance contaminated sites
- 283 high risk orphaned hazardous substance contaminated sites

High-Risk Orphaned Contaminated Sites

- Contaminated water supply wells from:
  1. unknown source
  2. homeowner discharge
  3. migration of contaminated groundwater from adjoining facility where no responsible party could be identified

- Contaminated soil or wastes on residential property

- Abandoned waste

High-Risk Orphaned Site Exposure Concerns

- Contaminated drinking water supplies
- Direct contact with contaminated soils on residential property
- Vapors from contaminated groundwater entering homes and other buildings

High-Risk Orphaned Sites:
Sites With Affected or Threatened Wells
(1 or more wells affected at each site)

# Sites with Wells Above Fed Drinking Water Limits (MCLs)	18
Detectable Contamination Below MCLs	124
Additional Sites Wells Less Than 500 ft From Known Source	83
Total	225 Sites

Other High-Risk Orphaned Sites

- 174 sites where residential property is the primary source site
- Sites affecting parks, schools and other sensitive use properties and no responsible party
- Groundwater contaminant vapors entering homes and businesses and no responsible party

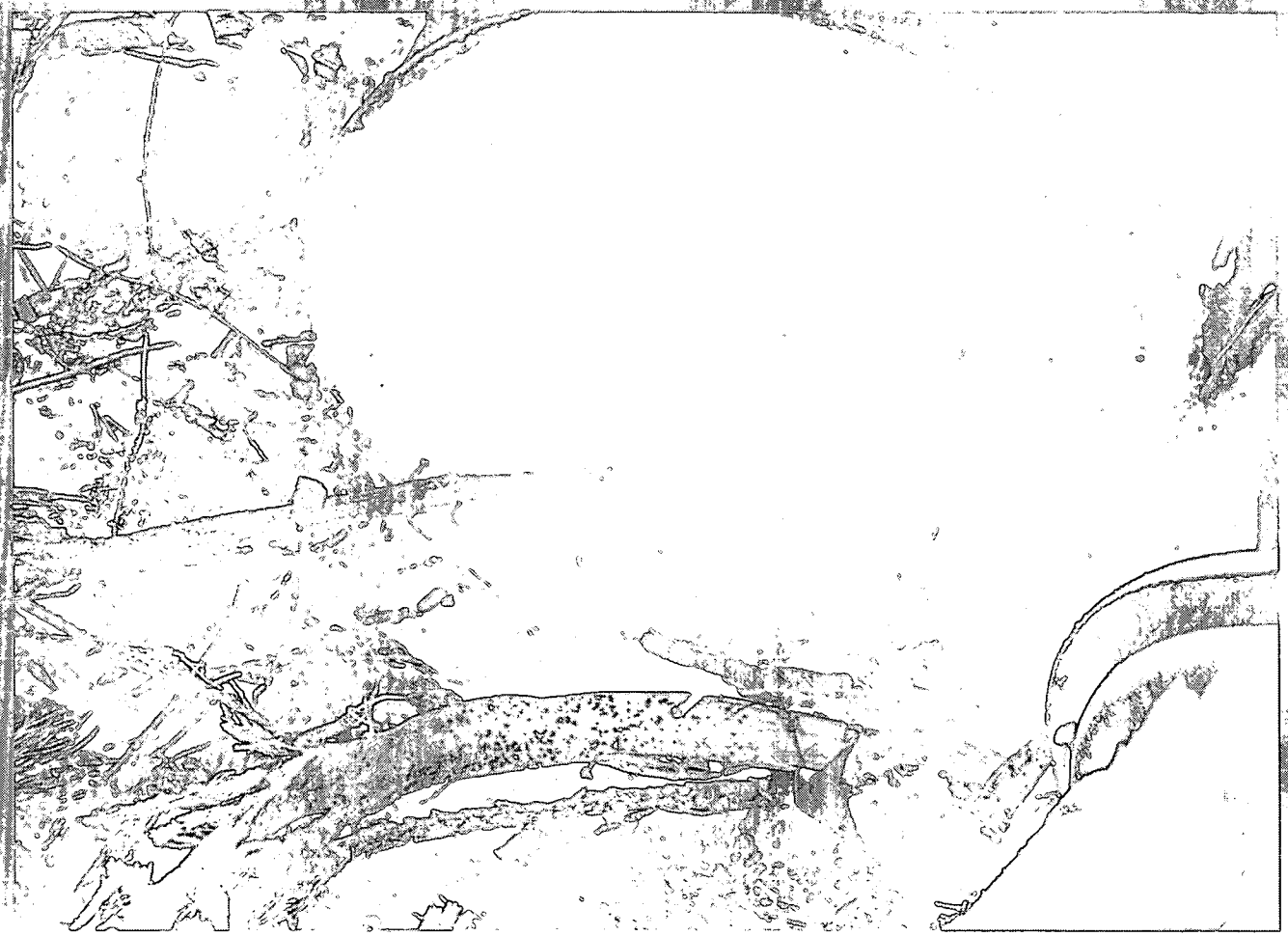
Recent Orphaned Site Case Actions

- Crowders Mountain State Park (Gastonia)
- Oak Haven Mobile Home Park (Salisbury)
- Texfi (Fayetteville)
- Phoenix Resources (Havelock)

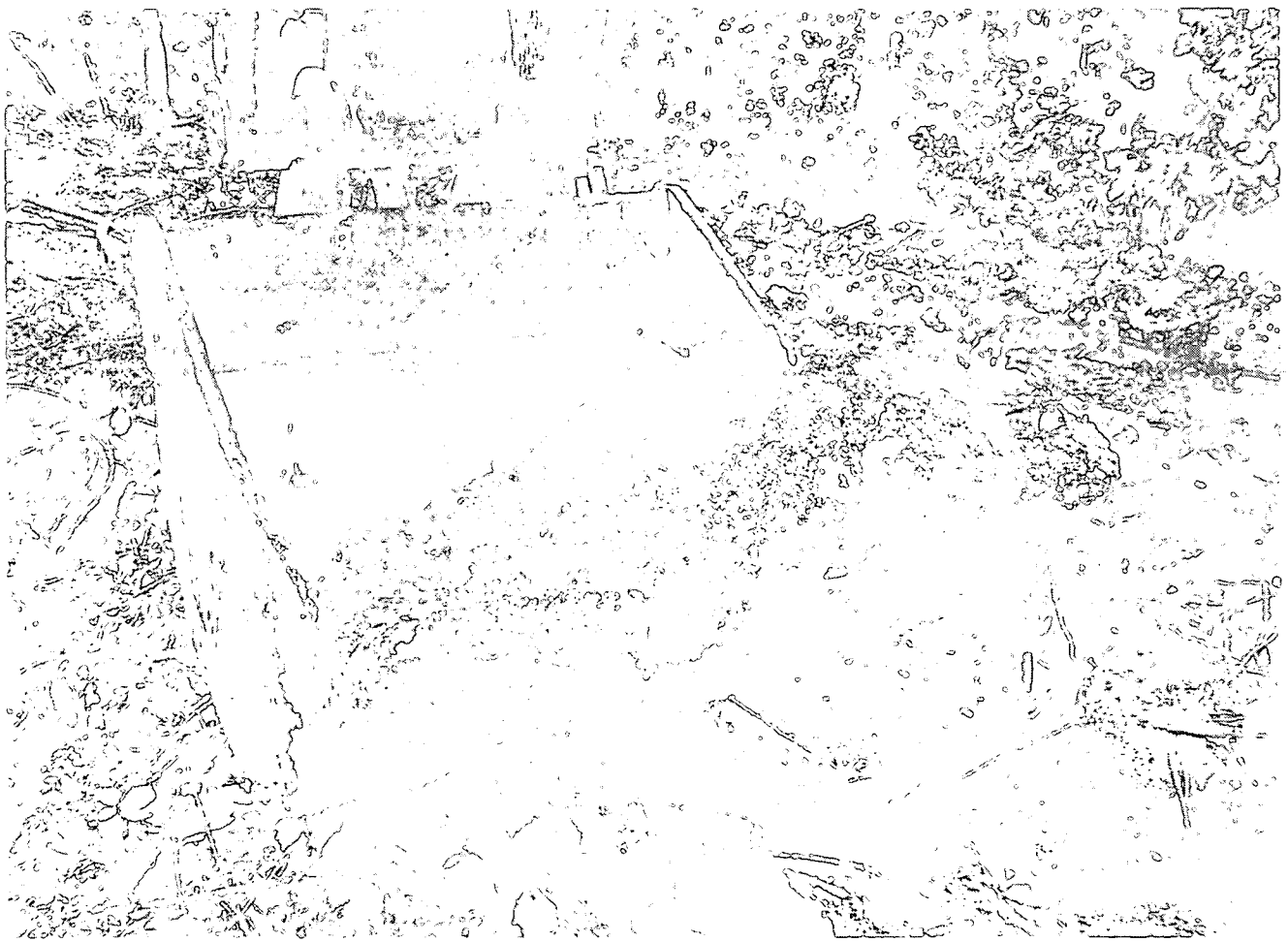
Crowders Mountain State Park



Crowders Mountain State Park



Crowders Mountain State Park



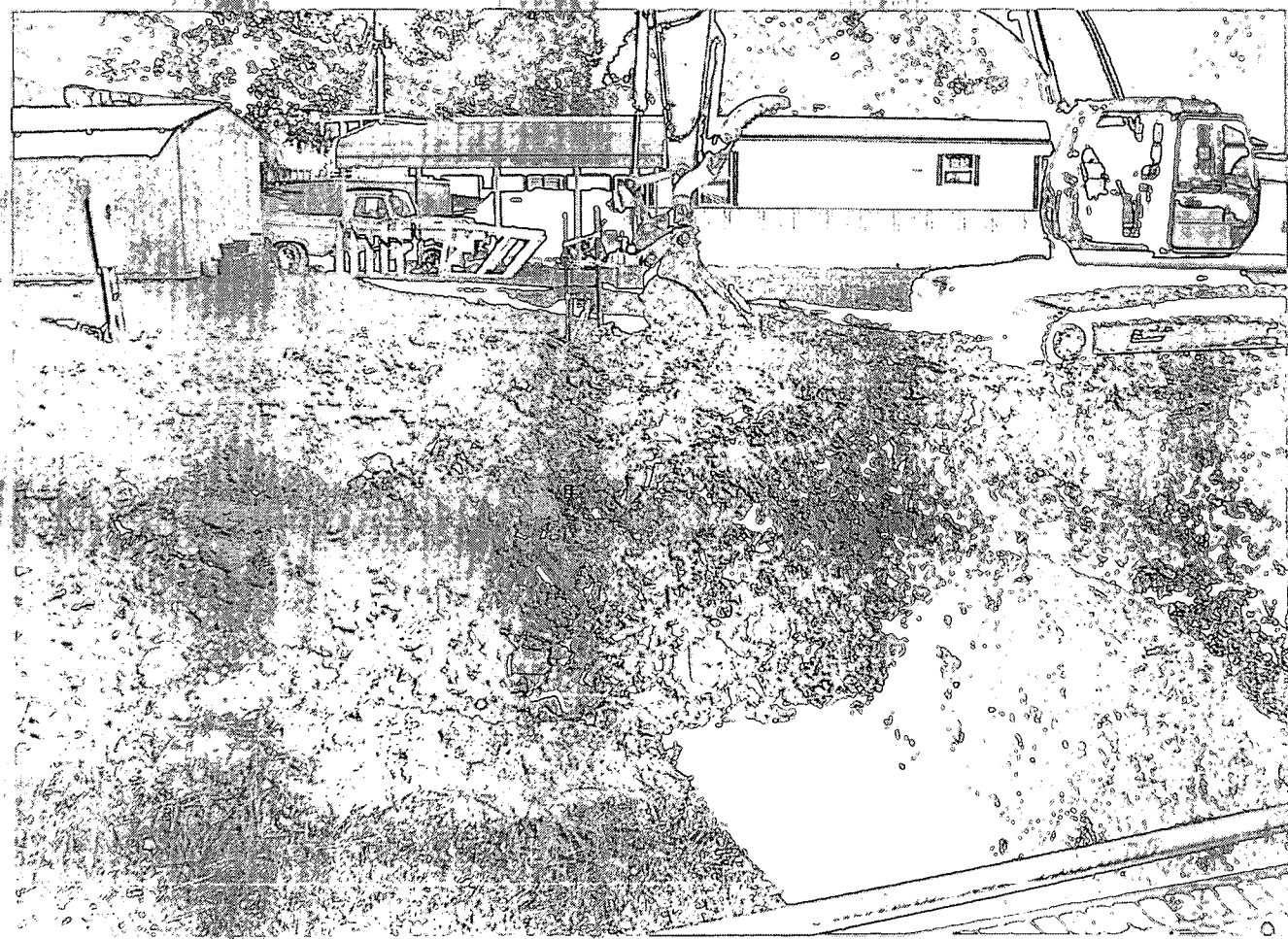
Crowders Mountain State Park



Crowders Mountain State Park

- $141,706 State cleanup funds expended
- $930,000 USEPA cleanup funds expended
- Total cost of sampling and contaminated soil and waste removal - $1,071,706
- Some groundwater contamination remains

Oak Haven Mobile Home Park



Oak Haven Mobile Home Park

- $298,501 State cleanup funds expended
- Approx. $500,000 USEPA cleanup funds expended
- Total cost of sampling and contaminated soil and waste removal – Approximately $800,000
- Site assigned "No Further Action Status"

Texfi-Fayetteville

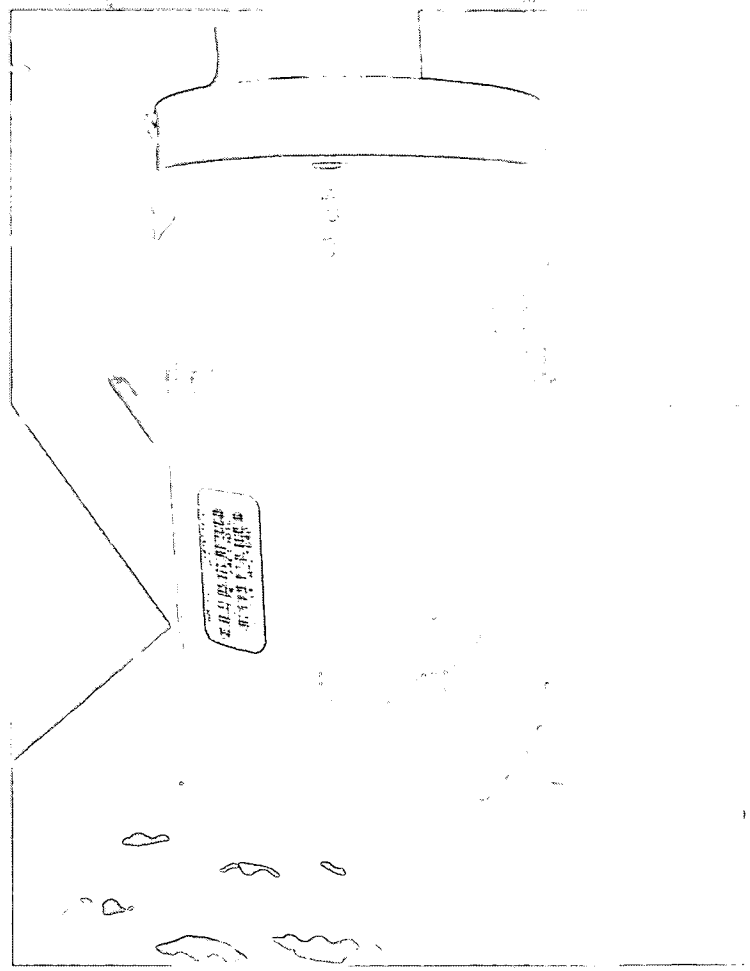


Texit-Texville

Texfi-Fayetteville



Texfi-Fayetteville



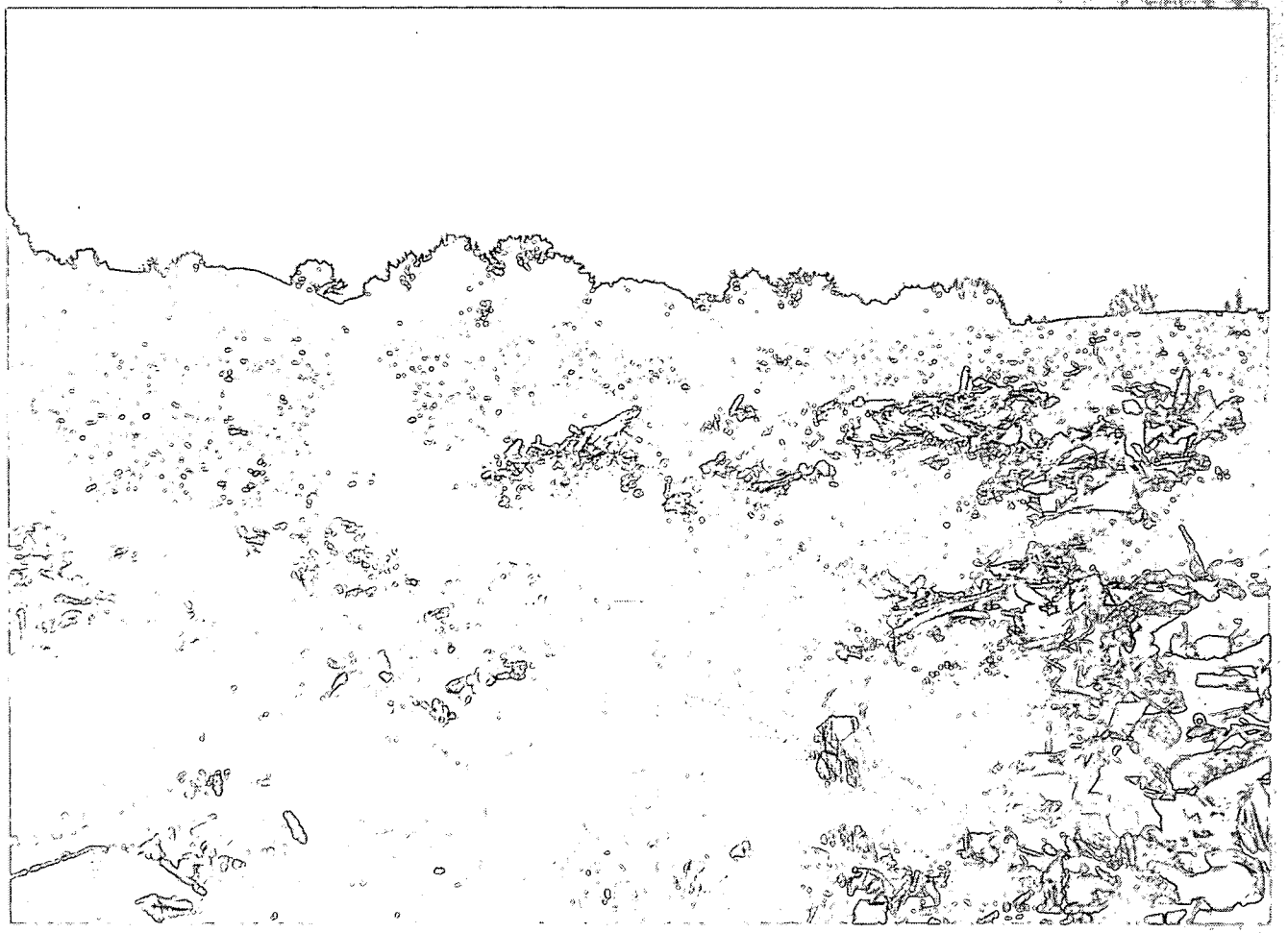
Texfi-Fayetteville Funds Obtained/Expended

- Approx. $700,000 from the Inactive Hazardous Sites Cleanup Fund expended
- $941,214.65 obtained from state's bankruptcy claim against Texfi
- Four special appropriations from the General Assembly, totaling $250,000 expended

Texfi-Fayetteville Remaining Funds

- $218,746 remains of bankruptcy funds
- $50,000 special legislative transfer for FY11-12

Phoenix Recycling-Havelock



Recent/Ongoing Orphaned Site Projects Providing Alternate Water (installation)

- Atkinson Street Contamination-Hamlet/Richmond
- Brekenwood Subdivision-Pleasant Garden/Guilford
- Busick Road-Reidsville/Rockingham
- Clontz Residence-Marshville/Union
- Country Club Lane-Roxboro/Person
- Durwood Grocery-Willard/Pender
- Fairland Lane-Lincolnton/Lincoln
- Painter Well
- Pawley Drive Contamination-Charlotte/Mecklenburg
- Priddy-Lawsonville/Stokes
- Scercy Wells-Charlotte/Mecklenburg
- Spectrum Yarns-Kings Mountain/Cleveland
- Staley PCE-Liberty/Randolph
- Tom Sadler Road Wells/Mingus-Charlotte/Mecklenburg
- Woodleaf Road Solvent Site-Salisbury/Rowan

Recent/Ongoing Orphaned Site Projects

Contaminant Assessment to Determine Risk/ Responsibility

- Alkalai Screen Printing-Wilmington/New Hanover
- Atkinson Street Contamination-Hamlet/Richmond
- Boyette Property-Wilson/Wilson
- Cox Mobile Home Park-Asheboro/Randolph
- Hollingsworth Property-Fayetteville/Cumberland
- Mary Chappell Residence-Hamlet/Richmond
- Paziuk Warehouse-Wilmington/New Hanover
- Pender Plating-Burgaw/Pender
- Phoenix Recycling-Havelock/Craven
- Rochelle Street Wells-Durham/Durham
- Walker Drum Disposal-Gold Hill/Rowan

Recent/Ongoing Orphaned Site Projects
Source Removals/Remedial Action

- Cheeseman Property-Rockwell/Cabarrus
- Crowders Mountain State Park-Gastonia/Gaston
- G&B/Farmer Property-Scotland Neck/Halifax
- Levi Watts Property-Tabor City/Columbus
- Oak Haven Mobile Home Pk-Salisbury/Rowan
- Texfi-Fayetteville/Cumberland
- Villa Mobile Home Park-Kannapolis/Cabarrus
- Vinegar Hill-Tabor City/Columbus

Funding Sources for High Risk Orphaned Sites

- US EPA
- Bernard Allen Memorial Drinking Water Fund
- Inactive Hazardous Sites Cleanup Fund
- Bankruptcy Claims

Bernard Allen Memorial Drinking Water Fund

- Received total of $915K appropriations in 2006 and 2007
- Has been receiving 2.5% of Scrap Tire Tax since Nov 2009 (approx. $390K annually)
- Used to sample wells and to provide alternate drinking water to affected wells

Bernard Allen Memorial Drinking Water Fund

Alternate Water for Contaminated Water Supply Wells

- For wells with hazardous substance contamination and other pollutants
- Can be from natural conditions or normal application of pesticides
- Contaminant must be greater than Fed. drinking water standard
- Owner income must be less than 3X US poverty guidelines
- Fund can pay no more than 1/3 of water line cost and no more than $10K/residence

Bernard Allen Memorial Drinking Water Fund



Inactive Hazardous Sites Cleanup Fund

- Can only be used for hazardous substance releases
- IHSRA and most federal and state contaminant remediation law excludes contamination from natural sources or due to normal application of pesticides

Inactive Hazardous Sites Cleanup Fund Income- Appropriations and Legislative Transfers

Year	Amount	Source	Notes
FY87-88	$100,000	Appropriations	
FY88-89	$500,000	Appropriations	
FY04-05	$50,000	NPL Cost Share	For Texfi Only
FY05-06	$50,000	NPL Cost Share	For Texfi Only
FY06-07	$100,000	Appropriations	For Texfi Only
FY07-08	$400,000	Dry Cleaner Solvent Cleanup Fund	
FY10-11	$50,000	Solid Wst Mgt Trust Fund	For Texfi Only
FY11-12	$50,000	Solid Wst Mgt Trust Fund	For Texfi Only

Inactive Hazardous Sites Cleanup Fund-Other Income

Year	Amount	Source	Notes
FY87/88 to FY95/96	$2,741,864	Solid & Hazardous Waste Penalties	No longer receive. Includes interest. Data from program rpt to the legislature.
FY96/97 – FY10/11	$1,160,793	Interest	Prior to FY96/97, included above.
FY97/98-Current	$32,915	Overflow of Emergency Response Fund	Only when fund exceeds cap. Fund has no income outside interest.
FY09/10-Current	$978,209	Scrap Tire Tax	2.5% of tax. Began FY09/10.
FY97/98-FY10/11	$28,794	No Further Action Review Fees	Fee began FY97/98.

Inactive Hazardous Sites Cleanup Fund-Other Income

- $237,266 in recovered expenses
- Recovery limited as fund primarily used for orphaned cases

Inactive Hazardous Sites Cleanup Fund

- February 2012 Balance: $700,885
  $218,434 (Texfi Only Funds)
  $482,451 for Orphaned Sites
- FY10/11 Income: $401,963 plus $50K for Texfi
- FY11/12: $50K for Texfi
- Average Cleanup Cost: Approx $560,000 per site

Bankruptcy Funds

- $14,890,784 recovered under Inactive Hazardous Sites Program to date
- 14 bankruptcy cases /multiple sites
- Funds held in state and private trust funds
- Funds can only be used for specific sites

Other State Funding Mechanisms

- Solid and Hazardous Waste Disposal Fees/Tax
- Targeted Waste Disposal Taxes (e.g. batteries, dry cleaning)
- Penalty Receipts
- Appropriations
- Registration/Permit/License fees

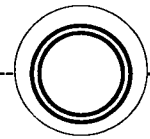
19.

Oil and Gas Study

March 22, 2012

NCDENR

Overview of Presentation



1. Limitations
2. Findings
3. Areas for further study
4. Recommendations
5. Questions

Study Limitations

- Lack of detailed information on extent and richness of shale gas resource in NC
- This carries over to assessment of environmental and economic impacts
- Potential for unknown impacts based on local characteristics
- Timeframe prevented us from considering ongoing work from EPA and others
- No comprehensive study of long-term health effects
- Awaiting information on consumer protection

Overview of Findings

- Regulations and protections must be in place before any hydraulic fracturing occurs
- NC lacks regulatory standards necessary to manage the impacts of gas production
- For example, NC has no mechanism to regulate water withdrawals for hydraulic fracturing and no standards for disposal of production wastes
- The industry can also have significant impacts on local communities and infrastructure
- Economic benefits to NC are unclear in part because of limited information on the resource
- More research is needed on groundwater, the shale gas resource, and other topics

Areas for Further Study

- Further research on the extent and richness of the shale gas resource in North Carolina
- Groundwater, particularly the separation between shale resources and groundwater supplies in NC
- Evaluation of the existing state air toxics program and its ability to protect landowners who lease to oil and gas operators
- Appropriate level of severance tax and use of those revenues
- Liability of gas producers for groundwater contamination

Baseline Data Collection and Water Management

1. Collect pre-drilling baseline data on resource quality
   - Industry: groundwater quality
   - DENR: surface water quality
   - DENR: air quality
     - Further research on state air toxics program
2. Water management
   - Require oil and gas operators to have a Water Management Plan
   - Limit water withdrawals to 20% of the 7Q10

Well Construction and Siting

3. Enhance existing oil and gas well construction standards to address the additional pressures of hydraulic fracturing and horizontal drilling

4. Develop setback requirements and identify areas where oil and gas activities should be prohibited.
   - Existing setbacks for impervious surfaces
     - Water supply watersheds, wetlands, floodplains, stormwater programs, high quality waters, etc.
   - Protect neighbors
     - Property boundaries, safety hazards, noise, etc.

State Stormwater Management Program

5. Develop a state stormwater regulatory program for oil and gas drilling sites
   - Potential for disturbing large amounts of land
   - Oil and gas activities have a federal exemption from NPDES stormwater requirements
   - Requirements for stormwater permitting, inspections and compliance activities

Waste Management Standards

6. Develop specific standards for management of oil and gas wastes
   - Develop a regulatory program to address the unique characteristics of oil and gas solid wastes during transportation, on-site storage and final disposal
   - Prohibit land application of oil and gas solid waste and wastewater
   - Maintain the state's prohibition on underground injection of wastewater due to NC's unsuitable geology and seismic risks
   - For wastewater, encourage 1) recycling and reuse of hydraulic fracturing fluids, 2) pretreatment, and 3) centralized waste treatment facilities

Hydraulic Fracturing Constituents

7. Require:
   - Full disclosure of hydraulic fracturing chemicals and constituents to regulatory agencies, and
   - Public disclosure of hydraulic fracturing chemicals, except for trade secrets, through FracFocus or state agency website
8. Prohibit the use of diesel fuel in hydraulic fracturing fluids

Data Management

9. Develop a robust data management system to:
   - Include GIS capabilities
   - Store baseline water and air quality data
   - Track production for royalties / severance tax
   - Facilitate public disclosure of data
   - Provide electronic permitting to the industry
   - Enable effective permitting, inspection and enforcement

Emergency Response

10. Ensure state agencies, local first responders and industry are prepared to respond to a well blowout, chemical spill or other emergency
    - Oil and gas operators should be required to develop emergency response plans, including
      - Wild will qualified person on site at all times
      - 911 addressing of well locations
    - Identify funding to support local governments that will need to train local emergency services providers
    - Encourage the Department of Labor to review its readiness to inspect drilling sites and enforce OSHA standards for oil and gas

Modern Oil & Gas Regulatory Program

11. Develop a modern oil and gas regulatory program while preventing physical and economic waste of oil and gas resources
    - Authorize DENR to establish complete regulator program, including:
        - Well pad density requirements
        - On-site regulatory agency inspections during cementing
        - Funding for rigorous oversight and regular inspections
        - Broaden authority for use of performance bonds
        - State water quality standards for hydraulic fracturing constituents

Environmental Permitting in DENR

12. Keep environmental permitting in DENR where it will benefit from the expertise of state geological staff and the ability to coordinate air, land and water quality permitting
13. Develop a coordinated permitting process

Distribution of Revenues

14. Address the distribution of revenues from oil and gas excise taxes and fees
    - Severance tax and program fee revenue should fund:
        - The administration of the oil and gas program
        - Conservation initiatives
        - Reclamation and remediation
        - Local government infrastructure
    - Conduct further study on the appropriate severance tax rate for NC
    - Assess an annual fee to perform inspections of oil and gas sites

Local Governments

15. Identify a source of funding for repair of roads damaged by truck traffic and heavy equipment
    - Ask NCDOT to study this issue
16. Clarify the extent of local government regulatory authority over oil and gas activities
    - Models exist in other states for sharing authority between state and local government
17. Complete additional research on impacts to local governments and local infrastructure
    - Ask the School of Government, the League of Municipalities, the Association of County Commissioners, or others for research assistance

Economic Impacts

18. Complete additional research on potential economic impacts
    - In draft report, economic impacts section does not consider site preparation, leasing of land, hydraulic fracturing, or extraction, production or transmission of gas
    - Data quality issues prevented further study
    - Follow-on analysis with better data is recommended

Address Liability

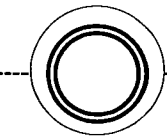
19. Address the natural gas industry's liability for environmental contamination caused by exploration and development, particularly for groundwater contamination
    - We recommend that the General Assembly study this issue further

Public Participation

20. Provide additional public participation opportunities
    - Public comments received through April 1 will be used in the development of the final report
    - Use technical advisory groups to develop specific requirements for an oil and gas program

Public Input

- Public Meetings (March 20 in Sanford and March 27 in Chapel Hill)
- Written Comments Accepted through April 1, 2012
  - Email to: Shale_Gas_Comments@ncdenr.gov
  - Mail to: NCDENR, attn: Trina Ozer
    1601 MSC
    Raleigh, NC 27699
- Get updates
  - Send an email to: DENR_Shale_Gas@ncdenr.gov
  - Visit http://portal.ncdenr.org/web/guest/shale-gas
- Final report due to General Assembly on May 1, 2012



Questions?

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Senator Bill Rabon

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips 0

(Member's Signature)

(~~Chairperson~~'s Signature)

Names of other official legislative or state government meetings attended during this visit:

Dent in Sanford 3/20 & claimed mileage yesterday
Committee in Raleigh 3/21

Number of days subsistence claimed for other meeting(s) 2

Car Mileage claimed for other meeting Yes ☒ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Senator Fletcher Hartsell

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) (3 21-22, 2012) 2

Car Mileage (Round Trip) 282

# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) _____

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Representative Pat McElraft

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 0

Car Mileage (Round Trip)
# of round trips 0 Already Charged

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Approp. Subcommittee NER Jues
Insurance wed

Number of days subsistence claimed for other meeting(s) 2

Car Mileage claimed for other meeting Yes ☒ No ☐

(1)

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Senator David Rouzer

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip)
# of round trips [redacted]
1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) —

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Representative Chuck McGrady

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip)
# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☒

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Senator Don East

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip) 270
# of round trips 1

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) _____

Car Mileage claimed for <u>other</u> meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Senator Brent Jackson

Number of days subsistence claimed 1

(If you come the night before and spend the night, you are entitled to an extra day.) _____

Car Mileage (Round Trip) _____

# of round trips _____

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

_____

_____

Number of days subsistence claimed for other meeting(s) 0

Car Mileage claimed for other meeting Yes ☐ No ☒

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Senator Stan Bingham

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip) 198
# of round trips 1

Stan Bingham
(Member's Signature)

David Rouzer
(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

_____

_____

Number of days subsistence claimed for other meeting(s) _____

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Representative Ruth Samuelson

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 2

Car Mileage (Round Trip) 340
# of round trips

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Representative Mitch Gillespie

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip) 0
# of round trips

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s) 3

Car Mileage claimed for other meeting Yes ☑ No ☐

COMMITTEE OR COMMISSION

REIMBURSEMENT INFORMATION

Environmental Review Commission
(Name of Committee or Commission)

Date(s) of Meeting: March 22, 2012 at 9:30am

Member: Representative Joe Hackney

Number of days subsistence claimed

(If you come the night before and spend the night, you are entitled to an extra day.) 1

Car Mileage (Round Trip) 60
# of round trips

(Member's Signature)

(Chairperson's Signature)

Names of other official legislative or state government meetings attended during this visit:

Number of days subsistence claimed for other meeting(s)

Car Mileage claimed for other meeting Yes ☐ No ☐

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
April 26, 2012

The Environmental Review Commission (ERC or Commission) met on Wednesday, April 26, 2012, at 9:30 AM in Room 544 of the Legislative Office Building. Representative Gillespie presided.

The following members were present: Representative Mitch Gillespie, Co-Chair; Representative Ruth Samuelson, Co-Chair; Senators Stan Bingham, Fletcher Hartsell, Brent Jackson; Representatives Joe Hackney, Chuck McGrady, and Roger West. Also present were: Mr. Jeff Hudson, Ms. Jennifer McGinnis, Commission Counsels; Ms. Jennifer Mundt, Commission Analyst; Ms. Mariah Matheson, Research Assistant; Ms. Cindy Hobbs, Commission Clerk (Attachment #1); and Sergeants-at-Arms Garland Shepheard, Wayne Davis, Martha Gadison, Steve Wilson, and Ronald Spann (Attachment #2).

On April 4, 2012, a notice was sent to members and interested parties via e-mail. A copy of the notice is included as Attachment #3. Copies of the agenda for the meeting and visitor registration sheets are included as Attachment #4 and Attachment #5, respectively.

Call to order and introductory remarks

Representative Gillespie called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized his Co-Chair, Representative Ruth Samuelson who had no remarks. Representative Gillespie called for the approval of the minutes for the January 26, February 23, and March 22, 2012 meetings, included as Attachment #6, #7, and #8 respectively. There being no changes, Representative Ruth Samuelson moved for approval.

Presentation by representatives from the Attorney General's Office

Representative Gillespie then recognized Mr. Kevin Anderson, Senior Deputy Attorney General, Consumer Protection Division, Department of Justice. Mr. Anderson gave opening remarks and presented the Attorney General Office's report on the North Carolina Oil and Gas Study under S.L. 2011-276: Impacts on Landowners and Consumer Protection Issues, Attachment #9. Mr. Anderson introduced Ms. Lynn Weaver, Assistant Attorney General, Consumer Protection Division, who then explained the report.

Ms. Weaver stated that strong protections should be in place for landowners before the State moves forward with hydraulic fracturing. Ms. Weaver said that normal drilling activities could cause disruption in the surface of the land, which could affect farming activities, which would then have to be taken out of production. Thus, this could cause a decrease in land values.

According to Ms. Weaver, there could be financial impacts in addition to the environmental impacts. Many consumers are not aware of these impacts. If a landowner enters into an oil and gas lease and has a mortgage loan on the referenced property, they could be in violation of the terms of their mortgage.

The bank prohibits the borrower from assigning or conveying an interest in the land without the lender's prior approval. If the owner does that, they can be declared in default of their mortgage. A "due-on-sale clause" is a clause in a loan or promissory note that stipulates that the full balance may be called due upon sale or transfer of ownership of the property used to secure the note. The lender has the right, but not the obligation, to call the note due in such a circumstance.

Additionally, all residential mortgages have a hazardous substance clause. It prohibits the borrower from using hazardous substances or engaging in activities that may require environmental cleanup. Some lenders have refused to make mortgage loans on oil and gas leased properties, such as the North Carolina State Employees Credit Union and the North Carolina Homeowners Credit Agency.

This is an emerging issue. Lenders in other parts of the country have looked at these risks, but since this is new to North Carolina, there are no procedures in place to address these risks. In order to take these risks into account there needs to be subordination and indemnity agreements in place. Some oil and gas companies have refused to enter into subordination and indemnity agreements. As a result, they wouldn't make the mortgage loan. Landowners need to understand that before entering into an oil and gas lease, they need to talk with their lender. There needs to be full disclosure of potential risks.

Ms. Weaver also discussed split estates. Most people own the entire estate, which includes the surface and subsurface underneath (i.e. minerals). However, it's not uncommon for those mineral rights to have been severed. There was quite a bit of coal mining in Lee County. So when land was sold, some owners held on to the mineral rights. Lee County tax officials identified 38 parcels consisting of 5,800 acres in which the person who owns the surface rights does not own the mineral rights. It's a complex process, however, landowners can go to the tax office and determine if they own the mineral rights.

Homebuilder D.R. Horton began to hold on to mineral rights in 2007, as there's no requirement that the seller disclose that the mineral rights do not convey. The severance of mineral rights would only come up at closing during a title search. There is no mandate to make that information knows when an offer of sale is made. Ms. Weaver said that the homebuyers need to know this information before they make an offer.

When mineral rights have been severed the mineral rights owner has an implied easement and has a right to access that property, to explore, use roads, drill, and use water on that property. That surface owner cannot prohibit access. Courts have found that if the owner does not grant access, then that property is considered to have been taken.

Fifteen states have adopted Surface Damage Acts. Surface Damage Acts generally require notice to the surface owner and require that oil and gas companies use "good faith" negotiations with landowners to determine and pay for the amount of damage that will likely occur to property as a result of oil and gas operations. The Attorney General's Office recommends that North Carolina go further to ensure greater protection for landowners.

Without a Surface Damage Act, land owners are only entitled to damages as a result of negligence, such as irresponsible conduct. **G.S. 113-421** provides that an operator pay a surface

owner for damages to personal property, which covers items like fencing. The statute does not include real property, such as a house, timber, or value for the land.

Ms. Weaver noted that water supply was also critical. New session law provides for damages to new water supply, however, other states have gone further. The Pennsylvania Department of Environmental Conservation can mandate the restoration of a water supply when it is found to have been damaged as a result of oil and gas operations.

Ms. Weaver went on to discuss in-person solicitation by brokers or "landmen," such as the American Association of Professional Landmen. Once an area has been identified to have oil and gas, the landmen determine who owns mineral rights. The landmen show up on the person's doorstep and encourage them to sign leases. Some landmen are independent, some work for oil and gas companies. Their job is to sign on as many people as they can, for the lowest price, and as quickly as possible.

Ms. Weavers said that homeowners need time to speak with their lender and understand the potential impacts of these leases. Landowners need to have some sort of cancellation period (perhaps 15 to 30 days), so they can review the lease properly. These leases are very complicated. Most landowners are not familiar with oil and gas leases, because it's new to North Carolina. The Attorney General's Office recommends that North Carolina establish a Surface Owner Protection Act, similar to other states. A Surface Owner Protection Act would require that landmen be brokered and provide landowners with some form of information sheet prepared by a State agency. Landowners should also be provided resources through the Attorney General's Office, the Department of Environment and Natural Resources (DENR), and other state cooperatives. The Attorney General's office also recommends that landmen be registered with the Secretary of State or DENR, so there is some measure of accountability and identification.

Ms. Weaver noted that in other states some oil and gas companies have also backed out of their leases and failed to make the bonus payments. With the decline of the price of natural gas, there have been lawsuits when oil and gas companies backed out. Oil and gas companies typically include a provision, which allows them time to conduct a 90 to 180 day title search. Thus, once some of these leases were signed, those payments were never made. It's important to require bonus payments be made within a short period of time. If they're not made within that time, the landowners should be able to cancel, so they can lease with someone else.

In conclusion Ms. Weaver said that there is no law requiring oil and gas leases be recorded. It's important that these leases be recorded somewhere. The lease will last as long as production lasts. Memoranda are being recorded, but not the entire lease. Other states have required the release of a lease be recorded and mandate notices of assignment. The oil and gas companies will sell those leases to other companies and the leases give them a right to sell. However, the lessees are not required to be notified if their lease has been sold.

Commission consideration of its report and legislative recommendations

Representative Gillespie recognized Mr. Jeff Hudson, Commission Counsel, to present the Commission's 2012 report, included as Attachment # 10. Mr. Hudson explained the non-legislative portions of the report. No comments were made by any member and the report was

accepted. Mr. Hudson explained the following proposed legislation, as recommended by the Commission:

- State Air Toxics Program Reforms, included as Attachment #11. Mr. Hudson described the air toxics proposal. There were no comments by members. Representative West moved for a favorable report, which passed on a voice vote.

- Protect DENR from Co-Applicant Liability, included as Attachment #12. Mr. Hudson explained that the bill, which protects DENR and the State from a potential liability associated with becoming a co-applicant with a regional water supply system on the federal approvals needed for the establishment or expansion of a water supply reservoir. Representative McGrady moved for a favorite report, which passed on a voice vote.

- Environmental Technical Corrections, included as Attachment #13. There being no comments from members, Representative Samuelson moved for a favorable report, which passed on a voice vote.

- ENR Reports Consolidation, included as Attachment #14. There being no comments from members, Senator Hartsell moved for a favorable report, which passed on a voice vote.

Representative Gillespie opened the floor for questions. Senator Hartsell inquired about a follow-up on Randleman Dam. Staff indicated that it would be answered before session began. Representative McGrady asked about the email that Representative McElraft circulated regarding the Coastal Area Management Act, in relation to the State Environmental Policy Act (SEPA). Representative McGrady asked if this issue would be taken up by the Commission. Representative Gillespie said that this issue could be discussed in one of the environmental committees.

Representative Gillespie made closing comments and thanked the Commission for its work. Representative McGrady moved to approve the entire report. The motion passed on a voice vote. Representative Hackney asked that he be recorded as voting "no."

There being no further business, the meeting was adjourned at 10:35 AM.

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Attest:

Cindy Hobbs, Commission Clerk

ATTENDANCE

Environmental Review Commission

DATES	March 22nd		April 26												
Sen. David Rouzer (Chair)	✓		–												
Rep. Mitch Gillespie (Co-Chair)	✓		✓												
Rep. Ruth Samuelson (Co-Chair)	✓		✓												
Sen. Stan Bingham	✓		✓												
Sen. Dan Clodfelter															
Sen. Don East	✓														
Sen. Fletcher Hartsell	✓		✓												
Sen. Brent Jackson	✓		✓												
Sen. Bill Rabon	✓														
Sen. Michael Walters			–												
Rep. William Brisson			–												
Rep. Joe Hackney	✓		✓												
Rep. Carolyn Justice															
Rep. Pat McElraft	✓		–												
Rep. Chuck McGrady	✓		✓												
Rep. Roger West			✓												
Staff:															
Jeff Hudson	✓		✓												
Susan Iddings															
Jennifer McGinnis	✓		✓												
Jennifer Mundt	✓		✓												
Mariah Matheson	✓		✓												

Committee Sergeants at Arms

NAME OF COMMITTEE Environmental Review Comm

DATE: 4/26/12 **Room:** 544

House Sgt-At Arms:

1. **Name:** Garland Shephard
2. **Name:** Wayne Davis
3. **Name:** Martha Gadison
4. **Name:**
5. **Name:**

Senate Sgt-At Arms:

1. **Name:** STEVE WILSON
2. **Name:** RONALD SPANN
3. **Name:**
4. **Name:**
5. **Name:**

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
SENATOR STAN BINGHAM
SENATOR DANIEL G. CLODFELTER
SENATOR DON EAST
SENATOR FLETCHER L. HARTSELL, Jr.
SENATOR BRENT JACKSON
SENATOR BILL RABON
SENATOR MICHAEL P. WALTERS

REPRESENTATIVE WILLIAM D. BRISSON
REPRESENTATIVE JOE HACKNEY
REPRESENTATIVE CAROLYN H. JUSTICE
REPRESENTATIVE PAT MCELRAFT
REPRESENTATIVE CHUCK MCGRADY
REPRESENTATIVE ROGER WEST

JEFF W. HUDSON
COMMISSION COUNSEL
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RALEIGH, NORTH CAROLINA 27603
(919) 733-2578

SUSAN S. IDDINGS
COMMISSION COUNSEL

JENNIFER L. McGINNIS
COMMISSION COUNSEL

JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

April 4, 2012

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Cindy Hobbs, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at **9:30 a.m.** on Thursday, April 26, 2012, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. ***(Please note the later starting time.)***

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Cindy Hobbs, Co

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

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JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

9:30 a.m. Thursday, April 26, 2012
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Gillespie, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Representative Mitch Gillespie
   Representative Ruth Samuelson
   Senator David Rouzer

3. Approval of the minutes for the January 26, February 23, and March 22, 2012 meetings of the Commission

4. Update on the consumer protection portion of the study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State as mandated by subdivision (8) of Section 4 of S.L. 2011-276 (House Bill 242) (*20 minutes)*
   Lynne Weaver, Assistant Attorney General
   Consumer Protection Division, North Carolina Department of Justice

5. Commission consideration of its report and legislative recommendations to the 2012 Regular Session of the 2011 General Assembly

   - State Air Toxics Program Reforms
   - Protect DENR from Co-Applicant Liability
   - Environmental Technical Corrections
   - Environmental Reports Consolidation

6. Commission discussion and announcements

7. Adjourn

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

VISITOR REGISTRATION SHEET

Environmental Review Commission — April 26, 2012

Name of Committee — **Date**

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NAME	FIRM OR AGENCY AND ADDRESS
Tammy Stevens	NCPC
K Rogers	NC CWMTF
PAIGE WORSHAM	LEGISLATIVE REPORTING SERVICE
TOM BEAN	EDF, NCCWF, NCSEA
Joe McClees	McClees Consulting
Diana Kees	DENR
Jim Joyce	K&L Gates
Trina Ozer	DENR
Kari Barsness	DENR
Mike Abraczinskas	DENR-DAQ
Sheila Holman	DENR-DAQ

VISITOR REGISTRATION SHEET

Environmental Review Commission — April 26, 2012

Name of Committee — **Date**

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Todd Roessler	Kilpatrick Townsend - Raleigh
Noelle Talley	NC DOJ
Meg Mackintosh	SELC
Sara Sands	UNC
Patrick Baker	NCAEC
Dave Hoon	S. A.
Jake Cashion	NC Chamber
DAVID BARNES	RS
Allison Waller	Nelson Mullins
Weldon Jones	Jordan Price
Beatrice Williams	CUCA
PRESTON HOWARD	MCIC

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Environmental Review Commission — April 26, 2012

Name of Committee — **Date**

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Elise Quick	Troutman Sanders
Ross Smith	PotashCorp - PCS Phosphate
Beth Warren	Attorney Gen. Office
Lisa Sorg	Independent Weekly
Jennifer Epperson	NC DOJ
Cordy McNeill	NC Granite Assn.
John Murawski	N&O
Jay Stem	NCAA
Doug Lassiter	NCSTA
Daniel Baum	Troutman Sanders
Rick Zechini	Progress Energy

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Environmental Review Commission — April 26, 2012

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NAME	FIRM OR AGENCY AND ADDRESS
CS Hollis	TSS
Gary Harris	NC PCM

VISITOR REGISTRATION SHEET

Environmental Review Commission — April 26, 2012

Name of Committee — **Date**

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Susanna Davis	Gov Office
Linda Culpepper	NC DENR DWM
Amy Simes	DENR
Jordan Treakle	RAFI - USA
T Reeder	NC DWR
D. Conrad	NCCW
Veronica Butcher Shingleton	Office of Governor
KENNETH TAYLOR	DENR - LAND RESOURCES
Jim Simons	DENR Land Resources
David McGowan	NCAR

VISITOR REGISTRATION SHEET

Environmental Review Commission — April 26, 2012

Name of Committee — **Date**

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NAME	FIRM OR AGENCY AND ADDRESS
Molly Diggins	Sierra Club
Allen Hardison	CRSWMA
Charles Case	Hunton
Doug Heron	Williams Mullen
Lisa Martin	NC Home Builders
Heather Bennett	Williams Mullen
Jon Cors	TNC
Scott Marlow	RAFI-USA
Kathy Hamilton	Duke
Dan Knight	DENR
Mark Wilde	DENR

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Environmental Review Commission — April 26, 2012

Name of Committee — **Date**

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NAME	FIRM OR AGENCY AND ADDRESS
Mac Hulslander	NA
Kelli Kulma	NC LM

#9

DRAFT

North Carolina Oil and Gas Study under Session Law 2011-276: Impacts on Landowners and Consumer Protection Issues

April 26, 2012

North Carolina Department of Justice
Consumer Protection Division

DRAFT

Impacts on Landowners and Consumer Protection Issues

Introduction

This report addresses some legal and consumer protection issues relevant to shale gas extraction and the leasing process, including: (a) an examination of potential impacts on landowners, and particularly landowners on whose land oil and gas operations occur; (b) a description of the ownership of oil and gas rights, including an explanation of "split estates," and the challenges posed by such estates; (c) a description of existing legal protections for landowners in North Carolina, with particular focus on those protections enacted pursuant to Session Law 2011-276, and identification of gaps in existing protections; and (d) identification of issues needing further study.

Given the relatively short timeframe for the preparation of this study as well as the complexity of these issues, this report is not intended to be a comprehensive review or treatment of the issues. If North Carolina proceeds with developing a regulatory program to regulate hydraulic fracturing, some of these issues will require further detailed study, and additional legal and consumer protection issues are likely to be identified in the future.

Pursuant to the mandate of Session Law 2011-276, in studying these issues and in preparing this report, the Consumer Protection Division of the Department of Justice consulted with the Rural Advancement Foundation International (RAFI).

Section 1 – Impacts on Landowners

A. Environmental Impacts

As detailed by DENR in its report, shale gas extraction has the potential to cause significant environmental impacts, which in turn, directly affect landowners that own or live on the land where extraction occurs, and, in some instances, neighboring landowners as well. Because DENR has discussed many of these environmental impacts, they are only briefly noted here.

Surface disturbance. Normal drilling activities can cause considerable surface disturbance to the land where drilling occurs. As noted by DENR, in the process of natural gas extraction and production, land is graded and cleared to develop well pads, access roads, and utility corridors for water and electrical lines, gas gathering lines, and compressor facilities. The New York Draft Environmental Impact Statement notes that industry estimates of the average total land disturbance per well pad is 7.4 acres. A study conducted by The Nature Conservancy reported that nearly nine acres of land was disturbed per well pad, which included the well pad itself and associated roads, water impoundments, and utility corridors for pipelines. (DENR report, section 4.H., "Impacts due to land disturbance"). Because this land area is devoted to

extraction activity, landowners are unable to use the affected surface area for other activities, such as farming, forestry, or grazing of livestock.

Impacts on soils and forestry resources. These surface disturbances can cause extensive damage to soils, resulting in immediate and future lost revenue for landowners engaged in agriculture production.[1] Among other impacts, the Penn State University Cooperative Extension Service ("CES") identified soil compaction as a particular problem for Pennsylvania farmers, leading CES to caution that "while Pennsylvania farmers have long understood the impact of increasingly heavier agricultural field equipment, this pales in comparison to the magnitude of size and weight of equipment commonly used by the natural gas industry."[2] Describing soil compaction from drilling activity as an "invisible thief" that "lowers soil productivity and environmental quality," the CES has instructed farmers that topsoil compaction can have an effect lasting from one year on sandy soils to five years on clay soils, but that deep subsoil compaction is "virtually permanent on all soil types and should be avoided at all costs."[3] According to the CES, in some instances, Pennsylvania landowners deliberately decided that certain affected areas were not worth the costs of restoration due to the extent of surface damage caused by natural gas extraction.[4]

In addition to soil compaction, shale gas extraction can result in soil erosion and sedimentation (DENR report, section 4.E., "Erosion and sedimentation issues") and removal of timber[5] (DENR report, section 4.E., "Habitat fragmentation and habitat loss"), which can cause particularly adverse impacts on landowners engaged in agriculture or forestry production activities.

Water contamination. As detailed by DENR, water contamination has been associated with oil and gas exploration and production, and some studies indicate that hydraulic fracturing has caused pollution of private water supplies (DENR report, section 4.C, "Potential releases to groundwater"). Some of these scientific studies have been widely debated, including whether contamination was caused by oil and gas extraction, and, if so, how contamination occurred. However, there is no doubt that water contamination, when it occurs, is one of the most serious adverse impacts that can be suffered by landowners as a result of shale gas activities, particularly where landowners depend on well water for their drinking water, irrigation, and for

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[1] Penn State Cooperative Extension Marcellus Education Team, "Avoiding and Mitigating Soil Compaction Associated with Natural Gas Development." Penn State University, 2009. Retrieved from <http://pubs.cas.psu.edu/>. New York State Department of Agriculture and Markets, "Guidelines for Construction and Restoration at Natural Gas Well Drilling Sites in Agricultural Areas." Cornell University Cooperative Extension, 2010. Retrieved from <http://www.cce.cornell.edu/>.

[2] Penn State Cooperative Extension Marcellus Education Team, "Avoiding and Mitigating Soil Compaction Associated with Natural Gas Development." Penn State University, 2009. Retrieved from <http://pubs.cas.psu.edu/> .

[3] Ibid.

[4] Ibid.

[5] Penn State Cooperative Extension Marcellus Education Team, "Forest Landowners and Natural Gas Development: Timber Resources." Penn State University, 2009. Retrieved from <http://pubs.cas.psu.edu/>.

their livestock.[6]

Air quality impacts. As observed by DENR in section 4.G. of its report ("Conclusions related to air quality impacts"), where shale gas production occurs on residential properties or farms, "the property owner or occupant may be exposed to unhealthy concentrations of toxic pollutants."

Additional environmental impacts. In addition to environmental impacts caused by normal drilling activity, accidents and spills do occur, which can cause serious damage to landowners' land. As stated by DENR, (section 4.H., "Potential impacts from spills, releases and air emissions"), "spills are extremely likely to occur with any natural gas drilling and production." These spills can affect landowners' land and livestock, as well as humans and pets. (DENR report, section 4.H., "Spills of fluids related to gas drilling operations"). For example, reports of the exposure of cattle to toxic drilling waste led to cattle quarantines in Pennsylvania in 2010, when 28 cows were believed to have been exposed to waste pools containing chemicals including chloride, magnesium, potassium, and strontium for three days.[7] According to local news reports, officials said that"[st]trontium, a heavy metal, [was] of particular concern because it can be toxic to humans, especially children."[8] The previous year, in 2009, 17 cows died in Louisiana, reportedly after drinking drilling fluid that leaked into a field.[9]

In addition to spills, well blowouts and explosions can occur, which can cause property damage and, in some instances, personal injury.[10] The *Calgary Herald* reported in January 2012 that "hydraulic fracturing of an oil well in southern Alberta could have caused an oil well blowout a

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[6] Wolf, Isaac, "At ground zero for fracking, residents say water has gone bad." Scripps Howard News Service, Nov. 18, 2010. Retrieved from <http://www.wcpo.com/>. Urbina, Ian, "A Tainted Water Well, and Concern There May Be More." The New York Times. Aug. 3, 2011. Retrieved from <http://www.nytimes.com/>. Associated Press, "Tests: Pa. gas drilling town's water still fouled." The Wall Street Journal, Oct. 15, 2011. Retrieved from <http://online.wsj.com/>

[7] Reuters, "Pennsylvania quarantine cattle over gas drilling fluid." July 1, 2010. Retrieved from <http://www.reuters.com/>

[8] Ibid.

[9] Lustgarten, Abraham, "16 Cattle Drop Dead Near Mysterious Fluid at Gas Drilling Site." ProPublica, April 30, 2009. Retrieved from <http://www.propublica.org/>. Bamberger, Michelle, New Solutions, Vol. 22(1) 51-77, 2012, "Impacts of Gas Drilling on Human and Animal Health."

[10] Eaton, Leslie, "Gas Blast Rocks Texan Town." The Wall Street Journal, Jun. 8, 2010. Retrieved from http://online.wsj.com/. Kidston, Martin, "5 years after gas well blowout, Clark residents vent frustrations." Gazette Wyoming Bureau, Aug. 4, 2011. Retrieved from <http://billingsgazette.com/>. wjactv.com, "Gas Well Blowout Under Control in Clearfield County." Cox Media Group, Jun. 4, 2010. Retrieved from <http://www.wjactv.com/>. Associated Press, "Gas explosion rocks small Ohio village." USA Today, Feb. 11, 2011. Retrieved from http://www.usatoday.com/. Casselman, Ben, "Pennsylvania Gas Well Blowout Forces Evacuation." The Wall Street Journal, April 20, 2011. Retrieved from <http://online.wsj.com/>. Lustgarten, Abraham, "Louisiana Well Blowout Forces Hundreds from Homes." ProPublica, April 20, 2010. Retrieved from <http://www.propublica.org/>. Associated Press, "2 Injured in Natural Gas Explosion in Seattle." Fox News, Sept. 26, 2011. Retrieved from <http://www.foxnews.com/>. Levy, Marc, Associated Press, "Talisman cited for gas well blowout." The Times-Tribune, Jan. 26, 2011. Retrieved from < http://thetimes-tribune.com/>.

kilometre away ... spewing what appeared to be oil and chemicals onto [a] neighbour's field. Black fluid from the well sprayed 15 metres in the air."[11] In media reports, landowners have reported that these types of drilling accidents have had substantial impact on their property, including "places in the pasture where grass [will] not grow."[12]

B. Financial Impacts

In addition to environmental impacts caused by gas exploration and development, landowners' acts of entering into oil and gas leases may have certain adverse financial impacts, including impacts on landowners' existing mortgages and their ability to obtain new credit. These impacts have not been closely studied or documented, but it is clear that entering into leases may pose financial risks to landowners which they should carefully consider and ensure that they understand before entering into leases.

Potential Impacts on Existing Mortgages and Landowners' Ability to Obtain New Credit

As observed in section 6.B. of DENR's report ("Valuation and mortgage issues"), with the growing number of landowners entering into oil and gas leases, particularly in more densely populated areas such as New York and Pennsylvania, questions have been raised about the potential impact of leases on landowners' existing mortgages, their ability to refinance their mortgages, and their ability to obtain new credit.[13]

Potential violation of due-on-sale clause and risk of foreclosure. In most residential mortgages, the mortgage is secured by both the surface and subsurface portion of the land, as well as all buildings and fixtures on the land.[14] Most residential mortgages contain a clause prohibiting a borrower from selling any portion of the mortgaged property or any interest in the property without the prior approval of the lender; this clause, often called a "due-on-sale clause," protects the property interests that lenders acquire when they enter into a mortgage loan.[15]

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[11] O'Meara, Dina, "Regulators say hydraulic fracturing may have caused oil spill on farm near Innisfail." Calgary Herald, Jan. 17, 2012. Retrieved from <http://www.calgaryherald.com/>.

[12] Robertson, Campbell, "Bitter Twist in Louisiana Family's Long Drilling Fight." The New York Times, Dec. 29, 2011. Retrieved from <http://www.nytimes.com/>.

[13] Urbina, Ian, "Rush to Drill for Natural Gas Creates Conflicts with Mortgages." The New York Times, Oct. 19, 2011. Retrieved from <http://www.nytimes.com/>. Radow, Elisabeth, "Homeowners and Gas Drilling Leases: Boon or Bust?" New York State Bar Association, Nov./Dec. 2011.

[14] Congressional Research Service, Letter from David Carpenter, Legislative Attorney to Rep. Carolyn Maloney, dated September 15, 2011. Retrieved from http://maloney.house.gov/issue/hydraulic-fracturing-fracking .

[15] Ibid. *See also* the form Deed of Trust approved by Fannie Mae and Freddie Mac for use in North Carolina, at paragraph 18, which prohibits the sale or transfer of the mortgaged property or any interest in the property without the lender's prior written consent, and further provides that if the borrower violates the provision, the lender may require immediate payment in full. This form can be accessed at http://www.freddiemac.com/uniform/unifsecurity.html (North Carolina Deed of Trust).

In a 2011 memorandum to a member of Congress, which discussed the practices of Fannie Mae and Freddie Mac in handling requests by borrowers to enter into gas leases,[16] the Congressional Research Service ("CRS") stated that a borrower's leasing of his or her rights to the subsurface minerals without the prior approval of the lender "generally will be in violation of this mortgage term" and could be considered an act of default under the mortgage.[17] CRS noted that such a violation could trigger the lender's rights pursuant to the mortgage "to demand the immediate payment of the full amount owed and the right to foreclose on the property if the borrower is unable to pay in full."[18]

CRS noted, however, that where borrowers' loans are owned or guaranteed by Fannie Mae or Freddie Mac, "[t]here may be circumstances under which Fannie Mae and Freddie Mac would be willing to relinquish the property rights that they hold in order for an oil, gas, or mineral lease to be duly executed on the same land," and that borrowers can make such a request to their mortgage loan servicer.[19] Fannie Mae has issued guidelines for servicers on how servicers should evaluate requests by borrowers to release a portion of the security, including the mineral rights, so that borrowers may enter into gas leases. The servicer guide allows servicers to approve the requested release on behalf of Fannie Mae if the lease "is customary in the area and the exercise of the lease will not have a material effect on the value of the property, prevent use of the property as a residence, or expose the residents to serious health or safety hazards."[20] The guide elaborates on how a servicer should make this determination.[21]

As discussed by DENR (section 1.D., "Leasing of mineral rights"), to date, only one company, Whitmar Exploration Company ("Whitmar"), is known to have entered into an appreciable number of leases with North Carolina landowners. As noted by DENR, Whitmar currently holds 63 leases covering 5,958.41 acres in Lee County. (Whitmar entered into two additional leases, but has subsequently released those leases and they are no longer in effect.) Another company, Tar Heel Natural Gas, LLC, entered into a single three-year lease, which expires in 2013. The remaining lease known to be in force is a single lease of 628 acres in Lee County, leased by Hanover NC, LLC; that lease was entered into in 2008 and expires in 2013. (DENR

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[16] Fannie Mae (the Federal National Mortgage Association) and Freddie Mac (Federal Home Loan Mortgage Corporation) are government-sponsored enterprises (GSEs) that purchase or insure most mortgage loans made in the U.S. The GSEs' primary business is purchasing mortgages made by other financial institutions as a way of creating liquidity in the mortgage market so as to encourage lenders to originate more mortgages. The GSEs either hold these mortgages in their own portfolios or convert the income streams of pools of mortgages into mortgage-backed securities and guarantee the performance of these securities for investors. For those loans that are held by lenders or investors rather than Fannie or Freddie, the loans typically adhere to Fannie's and Freddie's guidelines.

[17] Congressional Research Service, Letter from David Carpenter, Legislative Attorney to Rep. Carolyn Maloney, dated September 15, 2011. Retrieved from http://maloney.house.gov/issue/hydraulic-fracturing-fracking .

[18] Ibid.

[19] Ibid.

[20] Ibid.

[21] Ibid.

report, section 1.D., "Leasing of mineral rights").

A review of records recorded with the Lee County Register of Deeds shows that, out of the original 65 leases entered into by Whitmar, approximately 11 properties were subject to preexisting mortgages (or, more accurately, deeds of trust). The Consumer Protection Division is unaware of any instance either in North Carolina or elsewhere where a borrower's signing of a gas lease has caused a lender to declare the loan in default and request immediate repayment. However, as noted by CRS, lenders could potentially invoke that right under the terms of most mortgages, which, if it occurred, would have serious financial repercussions on landowners if they are unable to repay.[22] In most instances, landowners are not informed at the time they sign leases, that if they have a mortgage, they are required to obtain their lender's consent to enter into the lease, and if they do not do so, they risk being found in violation of the terms of the mortgage and being declared in default.[23]

Potential violation of hazardous substances clause. In addition to a due-on-sale clause, most residential mortgages contain a provision prohibiting the borrower from allowing (i) use or storage of hazardous substances beyond those used in normal residential activities; or (ii) activities that may require environmental cleanup under federal or state environmental laws, either of which may adversely impact the value of the property.[24] For borrowers seeking to refinance mortgages or obtain new mortgage loans, lenders may be hesitant to make the loans because it may be difficult for lenders to assess the potential impacts of shale gas extraction on the property, and on the property's value.[25] In addition, where shale gas extraction occurs, if the extraction causes serious environmental damage and requires environmental cleanup, then this could constitute a breach of the mortgage by the homeowner or landowner.[26]

The New York Times and the *New York State Bar Association Journal* have reported that, because of these concerns, some lenders will not issue new mortgage loans on homes with gas leases and that, as a result, some New York homeowners have had difficulty obtaining

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[22] Congressional Research Service, Letter from David Carpenter, Legislative Attorney to Rep. Carolyn Maloney, dated September 15, 2011. Retrieved from http://maloney.house.gov/issue/hydraulic-fracturing-fracking .

[23] Discussion with Harry Weiss. Mr. Weiss is a partner with the law firm of Ballard Spahr, LLC in Philadelphia, Pennsylvania. Mr. Weiss has represented numerous landowners in oil and gas lease transactions, and he was recently appointed by Maryland Governor Martin O'Malley to a task force studying shale gas issues in Maryland. *See also* Urbina, Ian, "Rush to Drill for Natural Gas Creates Conflicts with Mortgages." The New York Times, Oct. 19, 2011. Retrieved from <http://www.nytimes.com/>. Radow, Elisabeth, "Homeowners and Gas Drilling Leases: Boon or Bust?" New York State Bar Association, Nov./Dec. 2011.

[24] Fannie Mae/Freddie Mac Uniform Instrument (North Carolina), at paragraph 21, "Hazardous Substances," accessed from http://www.freddiemac.com/uniform/unifsecurity.html.

[25] Greg May, Vice President Residential Mortgage Lending Tompkins Trust Company, "Gas and Oil Leases Impact on Residential Lending," powerpoint presentation attached to CRS memorandum of September 15, 2011.

[26] Nathan Batts, Senior Vice President and Counsel, North Carolina Bankers' Association.

mortgages or refinancing their existing mortgages.[27]

In some instances, lenders and gas companies have acted to attempt to address these concerns so that borrowers may obtain credit. Where there is sufficient acreage, lenders may require gas companies to release a certain amount of land around a residence before issuing a mortgage loan to the landowner.[28] Examination of Lee County records shows that Whitmar has released two of its leases. While Whitmar's reasons for releasing the leases are unknown, following at least one release, the landowner subsequently obtained a mortgage loan. In addition, it appears that at least five mortgage loans were made to four property owners after they had entered into gas leases. In one instance, where a subsequent mortgage loan was made, Whitmar entered into a deed of subordination, subordinating its lease to the lender's deed of trust.

Similarly, in New York, Visions Federal Credit Union reported in a newsletter to its members in September 2011 that some gas companies had agreed to enter into agreements with the credit union, allowing the credit union to maintain its priority of title, to obtain title insurance, and agreeing to indemnify the credit union if there was environmental damage. Visions cautioned members that "it may take several months for an oil and gas company to respond to a request to sign [an agreement]," which extended the loan process.[29] Further, Visions stated that some companies had refused to sign such agreements, which resulted in the credit union denying the mortgage.[30]

Because hydraulic fracturing has not been conducted in North Carolina, and because there have been relatively few gas leases entered into in North Carolina compared with other states, this is still an emerging issue for lenders in North Carolina.[31] However, due to the above concerns, at least two North Carolina lenders, the North Carolina State Employees' Credit Union,[32] and the North Carolina Housing Finance Agency,[33] have stated that they will not make or purchase

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[27] Urbina, Ian, "Rush to Drill for Natural Gas Creates Conflicts with Mortgages." The New York Times, Oct. 19, 2011. Retrieved from <http://www.nytimes.com/>. Radow, Elisabeth, "Homeowners and Gas Drilling Leases: Boon or Bust?" New York State Bar Association, Nov./Dec. 2011.

[28] Greg May, Vice President Residential Mortgage Lending Tompkins Trust Company, "Gas and Oil Leases Impact on Residential Lending," powerpoint presentation attached to CRS memorandum of September 15, 2011.

[29] Visions Federal Credit Union, "Oil and Gas Leases Affect Mortgages," September/October 2011 newsletter.

[30] Ibid.

[31] Nathan Batts, Senior Vice President and Counsel, North Carolina Bankers' Association.

[32] Press release issued by RAFI, "Lenders: Fracking Presents Mortgage Risk," April 11, 2012, retrieved from www.rafiusa.org.

[33] Jennifer Percy, Counsel and Manager of Legal Services, North Carolina Housing Finance Agency ("NCHFA"). NCHFA is a self-supported public agency created by the General Assembly in 1973 to create affordable housing opportunities for North Carolinians. Among other lending activities, NCHFA offers low-cost mortgages and down payment assistance for first-time home buyers. It also finances affordable homes and apartments developed by local governments, nonprofit organizations, and private

mortgage loans on residential properties where the borrower does not own their mineral rights, or has leased their mineral rights. (The existence of "split estates" where mineral rights have been severed from surface rights is discussed in section 2.A, *infra*.)

Further, the Consumer Protection Division understands that landmen or gas companies rarely inform landowners that a lease may make it more difficult for landowners to refinance their mortgage loan or to obtain new credit.[34] As a result, landowners should exercise extreme caution in entering into gas leases if they anticipate refinancing their existing mortgage or seeking a new mortgage. Prior to entering into leases, landowners should consult with their lender to determine how the lease may impact their ability to obtain mortgage credit.[35]

Section 2 – Ownership of Oil and Gas Rights

A. The Leasing Transaction Generally

When oil and gas companies believe deposits containing oil or gas may exist in an area, the companies may approach private and public landowners with offers to lease their land. If a landowner decides to enter into a lease, the company pays the landowner for the right to access and use the landowner's land for exploration and extraction. The main forms of compensation that are paid to landowners who enter into leases are bonus payments, royalties, and rentals.

Primary Types of Compensation Paid to Landowners Who Lease

A *bonus payment* is a lump sum payment made to the landowner when the landowner executes the lease. Often, the bonus payment is paid on a per acreage basis. The amount of the bonus reflects the potential risks to the company, including the risk that there will be no oil and gas under the property leased, and the competition for leases in the area at the time.[36] The bonus payment is also affected by the prevailing market price of oil or gas; currently, the price of natural gas is very low, which has generally driven down bonus payments in shale gas areas over the last year. Other factors that affect the bonus payment price are the amount of acreage under the lease; whether the area has established oil and gas production or whether it is viewed to be a "wildcat" area; the availability of gathering pipeline infrastructure; whether competition exists for leases in the area; and the knowledge and negotiating skill of the

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owners.

[34] Harry Weiss.

[35] In addition, most mortgages will assert a lien on lease proceeds from bonus payments and royalties if the borrower fails to make the mortgage payments. Harry Weiss. Similarly, according to RAFI and the North Carolina Cooperative Extension Service, regulations of the U.S. Department of Agriculture Farm Service Agency's (FSA) direct loan program allow FSA to assert liens on all payments above $5,000 under an oil and gas lease and apply them to the loan if the loan is in default. 7 C.F.R. §§ 764.1 – 764.459.

[36] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 53.

parties.[37]

In other parts of the country, bonus prices have varied widely, depending on the location and the date the lease was entered. As reported by the Congressional Research Service in 2009, bonus prices have ranged from a low of $5 per acre in West Virginia in 2007 and 2008, to a high of $20,000 per acre in Texas in 2009, with payments of between $1,000 and $3,000 reported in Pennsylvania, New York, and West Virginia in 2009.[38] With the continued downward trend of natural gas prices, particularly over the past year, generally bonus payments are lower now than they were in 2009. In North Carolina, the bonus price paid by Whitmar to landowners in Lee County in 2010 was very low, as it reportedly ranged between $1 and $10 an acre, with $25 per acre being the highest bonus payment reported.[39] The fact that hydraulic fracturing is illegal in North Carolina undoubtedly negatively impacted bonus prices, as a company would not know if it would be allowed to drill, and, if so, how long it would take before laws and regulations were established permitting production.

In addition to bonus payments, standard gas leases provide that gas companies will pay landowners a *royalty*, which is a share of the production, when and if there is oil or gas production on the property. Royalties are discussed in section 6, *infra*, but the general industry floor, which is set as a statutory minimum in some states, is a 12.5% share of production, or the value or proceeds of production, that is attributed to the leased acreage.[40] In some areas, when leasing activity has intensified, royalty rates have risen to 15-20% (New York in 2009), and as high as 28% (Texas in 2009).[41] Recently, the low price of natural gas has reduced royalty rates. In North Carolina, the Whitmar leases that have been examined by the Division provide for a 12.5% royalty rate without deductions for costs.

A third type of payment commonly found in leases is *delay rentals*, which are rentals that are paid to the landowner to maintain the lease during the initial or primary term before production begins. Lease agreements often roll signing bonuses into rents and call for rents to be "paid-up" or paid upfront at the time the lease is signed.[42] The Whitmar leases reviewed by the Division show that they were "paid-up" leases and therefore did not provide additional payments for rentals.

Kinds of Ownership Interests

It is critical to understand certain basic types of property ownership, because the type of

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[37] Ibid. Harry Weiss.

[38] Congressional Research Service, "Unconventional Gas Shales: Development, Technology, and Policy Issues," Oct. 30, 2009.

[39] Jordan Treakle, RAFI. The two Whitmar leases examined by the Division provided for bonus payments of $20 per acre.

[40] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 278-79, 461.

[41] Congressional Research Service, "Unconventional Gas Shales: Development, Technology, and Policy Issues," Oct. 30, 2009.

[42] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 227-228.

property interest held by the landowner determines, as a matter of law, what rights the landowner has to his or her property – including whether the landowner can lease the mineral rights for oil and gas development, and whether the landowner can control access to and use of the surface of the property.

Fee interest owner or unified surface owner. In property law, the term "fee simple absolute" means an estate in which the owner is entitled to the entire property interest with an unconditional power to convey it.[43] As a result, the term "fee interest" owner is often used in the oil and gas industry to describe a property owner who owns the entire property, including the surface of the property and the underlying mineral rights to the property.[44] However, because the term "fee interest" is not widely understood outside legal parlance, and because "surface owner" is used in Session Law 2011-242 to include a property owner that owns the entire property, for purposes of this report, the Division uses the term *"unified surface owner"* to mean a property owner that owns the entire property, namely, *both* the surface and the mineral rights.

Mineral interest owner. Under long-established principles of property law, the minerals in place underneath the surface of the earth, including oil and gas, can be owned separately and distinctly from the surface of the property.[45] Therefore, minerals and mining rights, including oil and gas rights, can be created and transferred separately from the surface rights, and those mineral rights constitute a separate and distinct property interest.[46] Thus, mineral rights can be transferred by a reservation in a deed, or by a direct grant, sale, or assignment of the mineral rights.[47] Other documents that are sometimes used to create and separately convey mineral interests are grants of right of way and deeds of trust (or mortgages).[48]

When the mineral rights are separately reserved or conveyed from the surface rights, the rights are said to have been severed, and the estate is called a severed or *split estate*. Both of the estates, the mineral estate and the surface estate, are distinct estates that are governed by the laws of real property.[49] Because they are governed by the laws of real property, mineral rights must be created and conveyed in writing to be valid,[50] and may be recorded with the county register of deeds' office where the property is located.

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[43] Black's Law Dictionary (9th ed. 2009).

[44] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 38-39.

[45] Patrick K. Hetrick and James B. McLaughlin, Jr., *Webster's Real Estate Law in North Carolina* , § 1.07[3] (Matthew Bender, 6th Ed. 2011).

[46] Ibid.

[47] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 61-66.

[48] Ibid.

[49] Patrick K. Hetrick and James B. McLaughlin, Jr., *Webster's Real Estate Law in North Carolina*, § 1.07[3] (Matthew Bender, 6th Ed. 2011).

[50] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 62. Patrick K. Hetrick and James B. McLaughlin, Jr., *Webster's Real Estate Law in North Carolina*, § 1.07[3] (Matthew Bender, 6th Ed. 2011).

Oil and gas interests as distinct from mineral rights. It is not uncommon for mineral deeds to convey the rights to all minerals, and to specify the conveyance of oil and gas rights, in addition to mineral rights. It is important to note that in North Carolina, a mere reservation of "mineral rights" in a deed, or a mere conveyance of "mineral rights" alone may or may not convey oil and gas rights. The determination of whether a mineral rights conveyance alone would include oil and gas rights would be determined by the terms of the conveyance and the intent of the parties at the time of the conveyance. The Division is unaware of any North Carolina court decision on this issue. However, the Division notes that, in Pennsylvania, courts have held that a reservation or exception in a deed reserving only "minerals," without any specific mention of natural gas or oil, creates a presumption that the grantor did not intend for the "minerals" to include natural gas or oil.[51] Further, the Division notes that oil and gas is not included in the definition of "minerals" under the Mining Act of 1971.[52]

The Division notes that the common practice by oil and gas companies in leasing is to refer to oil and gas rights specifically in the lease. Because the case law of split estates typically refers to the "mineral estate" generally in distinguishing it from the surface estate, and because conveyances of minerals often include oil and gas, for ease of reference, the Division uses the term "mineral estate" and "mineral rights" in this report.

Surface owner. Finally, the third type of property owner in the context of a split estate is the surface owner, who owns the surface of the property (which includes any houses, buildings, crops, fields, timber and anything else on the surface), but does not own the mineral rights.[53]

Who has the right to lease? In order to lease mineral rights, one obviously has to own the mineral rights. Therefore, only the (i) unified surface owner, or (ii) mineral rights owner (in those situations where there is a split estate), have the right to lease the mineral rights. If a landowner is a surface owner only, then the landowner would not be a party to the oil and gas lease because he or she does not own the mineral rights.

Existence of Split Estates in North Carolina

In several western states such as Colorado and Texas, split estates are the rule rather than the exception.[54] In many instances, in the settlement of the West under numerous homestead

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[51] *Dunham v. Kirkpatrick*, 101 Pa. 36 (1882). However, a Pennsylvania court recently held that a reservation of "minerals and petroleum oils" in an 1881 deed raised a factual issue as to whether the Marcellus shale constitutes a "mineral," and therefore, whether the shale and shale gas was covered by the 1881 deed reservation. *Butler v. Charles Powers Estate*, 29 A.3d 35 (Pa. Super. Ct., 2011). This decision is currently on appeal to the Pennsylvania Supreme Court, which granted an appeal petition on April 3, 2012.

[52] N.C. Gen. Stat. § 74-49(6).

[53] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 43. Patrick K. Hetrick and James B. McLaughlin, Jr., *Webster's Real Estate Law in North Carolina*, § 1.07[3] (Matthew Bender, 6th Ed. 2011).

[54] It has been estimated that mineral rights are severed from surface rights for 85% of land in Colorado,

acts, the federal government reserved coal and mineral rights.[55] In addition, reservation of mineral rights has been practiced by individuals, land-grant railroads, lending institutions, and state governments.[56]

In North Carolina, most owners are unified surface owners and own their mineral rights.[57] However, split estates do exist and are not uncommon. As noted in a November 2011 *News & Observer* article, Lee County was active in coal mining decades ago, and "original owners, typically mining companies, were known to keep the mineral rights when selling land so they could keep the profits from coal mining later."[58]

According to the Lee County Tax Office, as of November 2011, officials had identified at least 36 parcels of severed mineral rights containing approximately 5,800 acres in the county. Lee County's tax administrator Dwane Brinson stated that this list of split estates was "incomplete," and would likely expand as more research was done, as the office was continuing to update older property information online in an effort to give landowners access to documents relating to mineral rights.[59] One large severed estate is a 2,700 acre mineral tract that the owner purchased from Weyerhaeuser in 1975. Since that time, Weyerhaeuser has subdivided and sold multiple tracts from the surface estate, including the entire Riverside subdivision, which sits in a bend of the Deep River.[60] The subdivision has resold lots to individual owners. In 2010, the mineral rights owner entered into a gas lease with Whitmar for the entire 2,700 acre tract. Some of these surface owners may not realize that they do not own gas rights under their properties, and that the rights have been leased.[61] In *The News & Observer* article, the mineral rights owner stated that he did not know who the surface owners were, and it appears it would take some research to identify them.[62]

In an effort to provide greater certainty with regard to ancient mineral rights in severed estates, the General Assembly has enacted a series of laws known as "dormant minerals" statutes.[63]

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and 90% of land in Texas, while it has been stated that in Kansas, the landowner usually owns both the mineral and surface rights. *See* Arkansas Public Policy Panel, "Model Oil and Gas Laws, Regulations, and Ordinances," March 2011, at 5. Oil and Gas Accountability Project, "Oil and Gas at Your Door? A Landowner's Guide to Oil and Gas Development," Second ed. (2005), at II-3, II-4.

[55] Montana Department of Natural Resources and Conservation, "A Guide to Split Estates in Oil and Gas Development." Retrieved from http://dnrc.mt.gov/trust/MMB/OG/splitestatesguide.asp

[56] Oil and Gas Accountability Project, "Oil and Gas at Your Door? A Landowner's Guide to Oil and Gas Development," Second ed. (2005), at II-3, II-4.

[57] Murawski, John, "Ownership of Lee County natural gas rights muddled." *The News & Observer*, Nov. 18, 2011. Retrieved from < http://www.newsobserver.com/

[58] Ibid.

[59] Ibid.

[60] Jordan Treakle. Murawski, John, "Ownership of Lee County natural gas rights muddled." *The News & Observer*, Nov. 18, 2011. Retrieved from < http://www.newsobserver.com/

[61] Ibid.

[62] Ibid.

[63] N.C. Gen. Stat. § 1-42.1 -- § 1-42.9.

Initially, the statutes only covered certain designated counties, but a law enacted in 1983 applies to all remaining North Carolina counties that were not the subject of prior statutes.[64] The laws extinguish ancient oil, gas, and mineral rights in severed estates where the holder of such mineral rights has not been listing them for tax purposes.[65]

Nonetheless, because of the way in which land records are kept, the age of some records, and because the conditions of the statutes must be strictly satisfied before mineral rights can be extinguished, for some landowners, it may take comprehensive title searches to determine whether they own their mineral rights, which can be very expensive.[66] In *The News & Observer* article noted above, Lee County officials stated that it would take extensive research to identify the corresponding surface owners of severed mineral tracts, because the mineral tracts involved thousands of acres and some of the surface parcels had been subdivided and could involve hundreds of properties.[67]

Further, beginning around 2007, national homebuilder D.R. Horton, Inc. began severing the mineral rights to properties it sold in subdivisions in Wake, Chatham, and other counties in North Carolina. Before selling these properties to homeowners, D.R. Horton severed the mineral rights and deeded those mineral rights to a D.R. Horton affiliate, DRH Energy, Inc. The sales contracts disclose that the mineral rights are being reserved by D.R. Horton. However, it is unknown whether purchasers of homes in those subdivisions fully understood the potential consequences of such reservations. On April 24, 2012, D.R. Horton issued a statement that it was suspending its practice of retaining mineral rights to properties sold to home buyers in North Carolina.

Based on the Division's research, including discussions with the North Carolina Real Estate Commission, there are no current statutes in North Carolina that specifically mandate a seller to disclose, at the time of a purchase offer, the seller's reservation of mineral rights or its

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[64] N.C. Gen. Stat. § 1-42.9. Patrick K. Hetrick and James B. McLaughlin, Jr., *Webster's Real Estate Law in North Carolina,* § 25.06 (Matthew Bender, 6th Ed. 2011).

[65] Ibid. More specifically, N.C. Gen. Stat. § 1-42.9, the most recent statute, creates "marketable title" in a surface owner free and clear of oil, gas or mineral interests in a previously severed subsurface estate subject to certain prerequisites. The prerequisites for establishing "marketable title" under the statute are: (1) the title to any oil, gas, or mineral interests must have been severed or separated from the surface estate; (2) the mineral interest must not be in the actual course of being mined, drilled, worked or operated, or in the adverse possession of another; (3) the record title holder of the oil, gas, or mineral interest must not have listed the property for tax purposes in the county of location for five years prior to January 1, 1986; and (4) the surface owner must have a legal capacity to own land, and must be able to establish an unbroken thirty-year chain of title of record (either through himself or previous owners) as of September 1, 1986.

[66] Murawski, John, "Ownership of Lee County natural gas rights muddled," quoting Professor Ted Feitshans, an attorney and associate professor at N.C. State University with N.C. State's Cooperative Extension Service. *The News & Observer*, Nov. 18, 2011. Retrieved from <http://www.newsobserver.com/,

[67] Ibid.

conveyance only of surface rights. The Residential Property Disclosure Act, N.C. Gen. Stat. § 47E-1, *et seq.*, mandates that, at the time a purchaser makes an offer to purchase, the seller must make certain written disclosures to the purchaser, including disclosures regarding the condition of the property. Section 47E-4(b) requires that the seller disclose the existence of any "zoning laws, restrictive covenants, building codes and other land-use restrictions affecting the real property," as well as any existing environmental contamination. However, the provision does not specifically require disclosure of the seller's reservation of mineral rights.[68] Moreover, the Act applies only to sales of previously-inhabited homes, and does not apply to the sale of new homes; therefore, a builder or developer is not required to make the disclosures set forth in Chapter 47E.[69]

Prior to closing, a buyer's lender or title insurance company will require a title search which should disclose any defects or limitations to the title, including a mineral rights deed (assuming the deed was conveyed within the past 30 years). However, the title search information may not be provided to the buyer until closing – which, as a practical matter, may be too late for the buyer to back out of the home sale, particularly if the buyer has already sold his or her existing home.

Because property sales in North Carolina have traditionally involved unified surface and mineral rights, the Division believes North Carolina homebuyers are unlikely to be alert to the possibility that they may be buying surface rights only. Homebuyers are even less likely to be aware of the ramifications of severed mineral rights. If hydraulic fracturing is allowed in North Carolina, the existence of severed mineral rights will be an important disclosure and consumer education issue for homebuyers.

B. The Dominance of the Mineral Estate and Its Right to Use the Surface for Extraction

Under the common law (which is the case law as determined by the courts) and the statutory law of all states, the mineral rights holder "has the right to the surface in such ways and to such an extent as is reasonably necessary to obtain the minerals under the property."[70] As such, in oil and gas extraction cases, the mineral rights owner's interest is referred to as the "dominant" estate, and the surface of the land is deemed "servient" to the mineral owner's right of use.[71]

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[68] In addition, the Division has reviewed the form property disclosure statement and form offer to purchase, which have been approved by the North Carolina Bar Association and the North Carolina Association of Realtors. The forms do not contain a provision concerning mineral rights.

[69] N.C. Gen. Stat. § 47E-4(b).

[70] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 39.

[71] Ibid. at 179-180. For detailed discussions of the principles set forth in this section, *see also* the following: Bruce M. Kramer, "The Legal Framework for Analyzing Multiple Surface Use Issues," Rocky Mountain Mineral Law Foundation: Severed Minerals, Split Estates, Rights of Access and Surface Use in Mineral Extraction Operations, Feb. 17-18, 2005, Paper 2; Rick D. Davis, Jr., "Private Lands -- Surface Access and Use," Rocky Mountain Mineral Law Foundation: Severed Minerals, Split Estates, Rights of Access and Surface Use in Mineral Extraction Operations, Feb. 17-18, 2005, Paper 9A; Patrick H. Martin

As noted in one legal treatise, if the mineral rights owner does not have the right to access and use the surface for purposes of mineral extraction, then the mineral rights may be worthless:

> "Of necessity, mineral ownership implies a right to use the land surface over the minerals because mineral ownership would be valueless without access to the minerals. Courts recognize an implied easement burdening the surface and benefiting the minerals on the basis either that it is the intention of the parties to the severance or that there is a public policy in favor of making the property economically useful."[72]

In applying these principles, following are examples of some of the specific rights that courts have held belong to mineral owners, and therefore, oil and gas operators, where mineral owners have leased their mineral rights: (a) the right to enter the surface for exploration and production;[73] (b) the right to construct roads to drill sites; (c) the right to take or use a reasonable amount of water, but not to take water off the leased premises; (d) the right to construct production and storage facilities, such as pipelines, storage tanks, power stations, and other structures; (e) the right to select drilling sites; (f) the right to select the timing of drilling operations; (f) the right to conduct geophysical exploration and seismic operations; and (g) the right to enter premises with growing crops.[74]

Notably, courts have expressly held that if a surface owner denies a mineral owner access to the surface, then that action can make the surface owner liable to the mineral owner for damages. If the surface owner is a public entity, then restrictions on access can be an unlawful taking of the mineral owner's property rights, entitling the mineral owner to compensation. This principle is illustrated in a recent decision in 2009 by the Pennsylvania Supreme Court in *Belden & Blake Corp. v. Commonwealth of Pennsylvania*.[75] In that case, Belden & Blake, a gas company, owned oil and gas leases (which it had leased from private mineral owners) on parcels in a state park, and sought to develop gas wells in the park. The Commonwealth of Pennsylvania owned the surface rights to the parkland. Pennsylvania's Department of Conservation and Natural Resources (DCNR) refused to permit surface access unless Belden agreed to a surface coordination agreement that increased the amount of the existing bond to

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and Bruce M. Kramer, 3 Williams & Meyers, *Oil and Gas Law*, § 218, Express and Implied Easements in Mineral and Royalty Deeds and Leases (LexisNexis Matthew Bender 2011).

[72] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 39-40.

[73] *See, e.g., Young v. Pittman*, 224 N.C. 175, 29 S.E.2d 551 (1944) (The North Carolina Supreme Court held that the defendant surface rights owner was prohibited from interfering with the plaintiff mineral rights owner's operation to mine mica and feldspar; however, where there was a dispute regarding whether the surface owner had come to own the mineral rights through "adverse possession," and the trial court had not yet ruled on that issue, the mineral rights owner was prohibited from using explosives within 200 yards of the defendant surface owner's home and spring that supplied his home with water.).

[74] Rick D. Davis, Jr., "Private Lands -- Surface Access and Use," Rocky Mountain Mineral Law Foundation: Severed Minerals, Split Estates, Rights of Access and Surface Use in Mineral Extraction Operations, Feb. 17-18, 2005, Paper 9A.

[75] 969 A.2d 528 (2009).

$10,000 per well, and Belden paid stumpage fees for the timber to be removed. DCNR maintained that these conditions were reasonable as it was a trustee for the Commonwealth's public natural resources, and had the right to prohibit access until Belden complied with its conditions. Belden filed suit seeking to enjoin DCNR from interfering with its implied easement to enter on the land to exercise its ownership of the natural gas rights.

The Pennsylvania Supreme Court, in a 4-2 decision, ruled in favor of Belden, holding that "the law recognizes [Belden's] right to enter upon the land to exercise its oil and gas rights."[76] Belden had a duty to exercise its rights "in a reasonable manner" but the mineral owner's rights "cannot be diminished because the surface comes to be owned by the government."[77] Therefore, under this case, a mineral owner is required to exercise "due regard" for a surface owner's rights, but a surface owner cannot prohibit the property's mineral owner (or his lessee) from accessing the land for extraction purposes.

Notwithstanding the dominance of the mineral estate, many courts, including the *Belden* court, have held that there are some limitations to the mineral owner's (or operator's) use of the surface: (a) the operator may only use so much of the surface as is "reasonably necessary" for the exploration and production of the minerals; (2) the operator must use the surface and conduct its exploration and production operations in a non-negligent manner; (3) the operator must conduct activities with due regard for the surface; and (4) the operator must comply with statutory limitations.[78]

Thus, under common law principles, if a gas operator acts negligently in drilling or in other activities, then the operator will be responsible to the surface owner for money damages. But if the operator has not acted negligently (which is generally defined as failing to act with reasonable care, or in a way that is unreasonable by industry standards), then the company will not be required to compensate the surface owner for damages caused to the surface of the property.[79]

The Reasonable Accommodation Doctrine

In an effort to balance the interests of surface owners with mineral rights owners, courts in numerous states have adopted a "reasonable accommodation" doctrine.[80] The doctrine was first stated as a separate principle by the Texas Supreme Court in 1971 in the seminal case of

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[76] Ibid., 969 A.2d at 530.

[77] Ibid., 969 A.2d at 532. The United States District Court for the Western District of Pennsylvania issued a similar ruling in a 2012 case involving federal park land where the mineral rights were held by private owners, but the U.S. Forest Service managed the surface; *see Minard Run Oil Co. v. U.S. Forest Service*, 2012 U.S. Dist. LEXIS 39978 (W.D. Pa. 2012).

[78] Ibid. Bruce M. Kramer, "The Legal Framework for Analyzing Multiple Surface Use Issues," Rocky Mountain Mineral Law Foundation: Severed Minerals, Split Estates, Rights of Access and Surface Use in Mineral Extraction Operations, Feb. 17-18, 2005, Paper 2.

[79] Ibid.

[80] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 182.

Getty Oil Co. v. Jones.[81] In that case, Jones, the owner of severed surface rights, sought damages for Getty's interference with his irrigation farming. Jones had drilled water wells and installed rolling irrigators that were elevated approximately 8 feet off the ground and pivoted in a circle. Subsequently, Getty drilled two wells on Jones' property under the authority of a lease from the severed mineral owners. Getty's wells required pumping units. The pumping units installed were substantially higher than the irrigators, so that the irrigators could not function. Jones contended that Getty's use was beyond the scope of its right because it effectively precluded him from farming his land. Getty countered that its pumping units were reasonably necessary to produce the oil.

The Texas Supreme Court held in favor of Jones, concluding that where a severed mineral interest owner or lessee asserts rights to use of the surface that will substantially impair existing surface uses, the mineral owner or lessee must accommodate the surface uses if he can reasonably do so. The court found that Getty could have afforded to sink its pumping units below the surface of the ground to avoid interference with Jones' irrigators, and therefore Getty was required to do so.

Therefore, in Texas, and in other states that have adopted the reasonable accommodation doctrine,[82] a surface owner may prevail or require a gas operator (as the lessee of the mineral rights) to accommodate the surface owner's uses if the surface owner can prove: (1) the surface use was in existence prior to the operator's conflicting use; (2) the surface owner has no reasonable means to develop his land other than with the pre-existing use; (3) the operator has other options which are (i) usual, customary, and reasonable methods; (ii) practiced in the industry; (iii) would not interfere with the surface owner's preexisting use; and (iv) are available on the premises. If the surface owner cannot prove these elements, under the reasonable accommodation doctrine, the surface owner must yield to the operator. In other words, "if there is but one means of surface use by which to produce the minerals, the mineral owner has the right to pursue that use, regardless of surface damages. On the other hand, if the operator has reasonable alternative means, one of which permits the surface owner to continue to use the surface in the manner intended, then the operator must use the alternative that allows continued use of the surface."[83]

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[81] 470 S.W.2d 618 (Tex. 1971).

[82] Other states that have incorporated "reasonable accommodation" or "due regard" language when resolving issues relating to the mineral estate's implied easement over the surface and the balancing of interests of the surface estate and the mineral estate include: Arkansas, Colorado (which codified the doctrine in 2007 at Colo. Rev. Stat. § 34-60-127), North Dakota, Utah and West Virginia. In addition, decisions by courts in a number of other states, including Mississippi, New Mexico, Pennsylvania, and Wyoming, indicate that those states may be leaning toward a "reasonable accommodation" doctrine. *See* discussion in Patrick H. Martin and Bruce M. Kramer, Williams & Meyers, *Oil and Gas Law*, § 218.8, "Accommodation doctrine", and cases cited in text and footnotes 17-30 (LexisNexis Matthew Bender 2011).

[83] Rick D. Davis, Jr., "Private Lands -- Surface Access and Use," Rocky Mountain Mineral Law Foundation: Severed Minerals, Split Estates, Rights of Access and Surface Use in Mineral Extraction Operations, Feb.

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Representative Mining Cases in North Carolina

As noted by DENR, there has been virtually no oil or gas development in the state, so unlike states such as Texas and Oklahoma, North Carolina does not have a developed body of law dealing with oil and gas extraction. In addition, there are relatively few reported cases in North Carolina dealing with mineral extraction; and the mineral cases that do exist tend to be older cases. North Carolina courts have not adopted a reasonable accommodation doctrine. Instead, North Carolina courts have held that mining operators may engage in activities that are "reasonably necessary" to extract the minerals and are only liable for damages that are caused by negligent activity. Two examples of this principle are decisions by the North Carolina Supreme Court in *English v. Harris Clay Co.*[84] and *Bayer v. Nello Teer Co.*[85]

In *English*, the plaintiffs owned the surface estate to a parcel of land, containing two houses (which were not occupied), a well, an orchard, and a fenced garden. Defendant Harris Clay Company obtained the mineral rights and mined kaolin from the property. In the process of recovering the kaolin, Harris removed a large quantity of the topsoil, took down the houses "piece by piece," and stacked and stored the materials on the premises. The Supreme Court held that Harris did not act negligently, and the plaintiffs could not recover damages, where Harris used the prevailing and accepted method of mining kaolin and used "due care in recovering the mineral so as not to injure any more of the surface than necessary."[86]

In *Bayer*, the defendant Teer Company engaged in open pit mining at a rock quarry, which was adjacent to the plaintiff's property. The company pumped a large quantity of water out of the quarry as part of its operations, and disposed of the water into a nearby creek. The mining operations caused the neighboring landowner's well to become undrinkable as the water became salty and had a petroleum odor. The neighbor contended that the value of his property was seriously impaired. The mining company introduced evidence that it had operated the quarry in accordance with the best industry practices at the time, and that the neighboring landowner could probably drill a well in a new location to obtain water.

17-18, 2005, Paper 9A, at § 3.03[3].

[84] 225 N.C. 467, 35 S.E.2d 329 (1945).

[85] 256 N.C. 509, 124 S.E.2d 552 (1962).

[86] *English*, 225 N.C. at 471, 35 S.E.2d at 332. In *dicta*, the Court noted the well-established principle that the surface estate is "dominant" in split estates where the surface owner contends that a mineral owner has damaged the "subjacent support" to the property. In property law, "subjacent support" is support of the surface by the underlying strata of the earth. *See* 1 Am. Jur. 2d *Adjoining Landowners* § 82. Therefore, where mining operations (or any other activity) cause the surface of the property to sink or collapse, generally, the surface owner can recover damages under the doctrine of subjacent support. The *English* court held that the doctrine of subjacent support, however, did not apply in that case because the mining method used did not cause the ground to collapse. The Court's iteration of the "dominance" of the surface estate is restricted to the context of subjacent support. Because shale gas extraction typically occurs in rock deep beneath the surface, it would not normally be expected to threaten a surface owner's subjacent support, and the Division is unaware of cases brought by surface owners asserting that claim in the context of hydraulic fracturing.

The North Carolina Supreme Court ruled for the mining company, stating that the company was not responsible for damage to the neighbor's water where the company had operated "in accordance with the best practices of open pit mining," had pumped no more water "than was necessary for the operation," and the company had not acted negligently.[87] In so ruling, the Court summarized the common law "reasonable use" rule for groundwater as it applies to mining operations:

> "Mining operations, being a reasonable use of land, do not, in general, make one carrying on such operations liable because percolating waters are intercepted or drawn away so as to destroy or injure springs or wells belonging to the owner of the surface or of adjoining lands..... Where the right to mine is separated from the ownership of the surface, the owner of the minerals is not liable to the surface owner because of the incidental loss of waters supplying springs or wells when caused by the ordinary working of the mine."[88]

Therefore, under the *Bayer* decision and, therefore, the common law of North Carolina – absent any statutory provisions to the contrary – a mining company that uses water in mining operations will not be liable for reducing or damaging the water supply of the surface owner or neighboring land owners. It should be noted, however, that *Bayer* states the previous common law in North Carolina, and that S.L. 2011-276 makes some important changes to this common law rule by requiring an operator to pay a surface owner compensation for damage to an existing water supply (N.C. Gen. Stat. § 113-421(a)(1)). This provision will be discussed in further detail in section 3.E. below.

Adoption of a Reasonable Accommodation Doctrine

As noted above, many state courts have moved to a "reasonable accommodation" standard in order to better protect surface owners. In addition, several states, most notably Colorado, have enacted statutes expressly requiring that oil and gas operators "reasonably accommodate" existing surface uses.[89] For example, Colorado's statute provides that an operator "shall conduct oil and gas operations in a manner that accommodates the surface owner by minimizing intrusion upon and damage to the surface of the land."[90] The statute goes on to define "minimizing intrusion upon and damage to the surface" as meaning "selecting alternative locations for wells, roads, pipelines, or production facilities, or employing alternative means of operation, that prevent, reduce, or mitigate the impacts of the oil and gas operations on the surface, where such alternatives are technologically sound, economically practicable, and reasonably available to the operator."[91]

In addition to some courts' and state legislatures' adoption of a "reasonable accommodation"

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[87] *Bayer*, 256 N.C. at 519, 124 S.E.2d at 559.

[88] Ibid., 256 N.C. at 518, 124 S.E.2d at 558.

[89] *See, e.g.*, Colo. Rev. Stat. § 34-60-127; Wyo. Stat. Ann. § 30-5-402(a).

[90] Colo. Rev. Stat. § 34-60-127.

[91] Ibid.

standard, there is some indication that the industry, in some instances, has made efforts to accommodate surface owners. For example, the Whitmar leases reviewed by the Division provide that the lessor may submit written objections to the company's proposed locations for work, and that the company will "make every reasonable attempt to abide by Lessor's requests, subject to the understanding that geological considerations ... shall be the overriding consideration on the location of any well site(s) on the leasehold premises." However, if the mineral rights have been severed, then the surface owner would not be a party to the lease and would not be afforded this consideration unless the mineral rights owner asserted objections on behalf of the surface owner.

Section 3 – Protection of Landowners from Surface Impacts

A. State Surface Damages Acts

In an effort to provide greater protections for surface owners than those afforded by common laws, a growing number of states have enacted surface damages acts.[92] Indiana was the first state to enact a surface damages act in 1951, and it was followed by North Dakota in 1979, with a number of states enacting their statutes in the 1990s.[93] The most recent state that enacted a surface damage act was New Mexico in 2007, and West Virginia enacted a revised surface damage act applying to horizontal wells in 2011.[94] While these statutes differ from state to state, the statutes typically contain provisions requiring some type of notice be given to surface landowners prior to the commencement of exploration and development activity, and requiring that surface owners be compensated for damages to their property.

In 2011, the North Carolina General Assembly enacted some landowner protections as part of Session Law 2011-276. These provisions provide some measure of protection for surface owners, but in some instances, these protections are limited. The remainder of this section will

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[92] To date, the states that have enacted surface damages acts are: Arkansas (Ark. Code Ann. §§ 15-72-214 to 15-72-219), Colorado (Colo. Rev. Stat. § 34-60-127), Illinois (765 Ill. Comp. Stat. 530/1 to 530/7), Indiana (Ind. Code § 32-5-7-2), Kentucky (Ky. Rev. Stat. Ann. §§ 353.595, 393.597), Montana (Mont. Code Ann. §§ 82-10-501 to 82-10-511), New Mexico (N.M. Stat. Ann. §§ 70-12-1 *et seq.*), North Dakota (N.D. Cent. Code §§ 38-11.1-01 to 38-11.1-10), Oklahoma (52 Okla. Stat. §§ 318.2 to 318.9), South Dakota (S.D. Codified Laws §§ 45-5A-1 to 45-5A-11), Tennessee (Tenn. Code Ann. §§ 60-1-601 to 60-1-608), West Virginia (W. Va. Code §§ 22-6B-1, *et seq.* (provisions enacted in 2011 that apply to horizontal wells), and §§ 22-7-1 to 22-7-8), and Wyoming (Wyo. Stat. Ann. §§ 30-5-401 *et seq.*). *See* discussion in Patrick H. Martin and Bruce M. Kramer, Williams & Meyers, *Oil and Gas Law*, § 218.15, "State Surface Damages Acts" (LexisNexis Matthew Bender 2011). *See also*, Bruce M. Kramer, "The Legal Framework for Analyzing Multiple Surface Use Issues," Rocky Mountain Mineral Law Foundation: Severed Minerals, Split Estates, Rights of Access and Surface Use in Mineral Extraction Operations, Feb. 17-18, 2005, Paper 2, at VII.

[93] Bruce M. Kramer, "The Legal Framework for Analyzing Multiple Surface Use Issues," Rocky Mountain Mineral Law Foundation: Severed Minerals, Split Estates, Rights of Access and Surface Use in Mineral Extraction Operations, Feb. 17-18, 2005, Paper 2, at VII.

[94] N.M. Stat. Ann. §§ 70-12-1 *et seq.*; W. Va. Code §§ 22-6B-1, *et seq.*

discuss existing protections for surface owners in North Carolina under S.L. 2011-276; identify limitations to existing statutory protections for surface owners; and discuss ways in which North Carolina's laws can be strengthened to provide greater protection for surface owners.

S.L. 2011-276 added a new part to North Carolina's Oil and Gas Conservation Act[95] to provide some protections for surface owners when oil and gas operations and activities occur. These new provisions are set out at N.C. Gen. Stat. §§ 113-420 -- 113-423. Pursuant to N.C. Gen. Stat. § 113-424, these provisions in the new part expressly apply to "leases or contracts, and amendments to leases or contracts, entered into on or after June 15, 2011." Therefore, pursuant to this section, if a lease was entered into prior to June 15, 2011, the protections of S.L. 2011-276 (N.C. Gen. Stat. §§ 113-420 -- 113-423) would not appear to apply.

B. Notice to Surface Owners Prior to Entry and Operations on the Property

Operations that Do Not Disturb the Surface

N.C. Gen. Stat. § 113-420(a) provides that an oil and gas operator must give a surface owner at least 7 days' written notice before entering the property for oil and gas operations "that do not disturb the surface,"[96] such as inspections, staking, surveys, and measurements. Notice must be given by certified mail, and must include, at a minimum, the following information: (1) the identity of person(s) requesting entry on the property; (2) the purpose for entry on the property; and (3) the dates, times, and location on which entry to the property will occur, including the estimated number of entries. If the operator fails to give the required notice, then the surface owner "may seek appropriate relief in the superior court for the county in which the oil or gas well is located and may receive actual damages."[97]

Operations that Disturb the Surface

N.C. Gen. Stat. § 113-420(b) provides that an oil and gas operator must give a surface owner at least 14 days' written notice prior to entering the property for "operations that disturb the surface." Notice must be given by certified mail, and must include, at a minimum, the following information:

> (1) A description of the exploration or development plan, including, but not limited to (i) the proposed locations of any roads, drill pads, pipeline routes, and other alterations to the surface estate and (ii) the proposed date on or after which the proposed alterations will begin.
>
> (2) An offer of the oil and gas developer or operator to consult with the surface owner to review and discuss the location of the proposed alterations.

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[95] N.C. Gen. Stat. § 113-381, *et seq.*

[96] N.C. Gen. Stat. § 113-420(a).

[97] N.C. Gen. Stat. § 113-420(c).

(3) The name, address, telephone number, and title of a contact person employed by or representing the oil or gas developer or operator who the surface owner may contact following the receipt of notice concerning the location of the proposed alterations.[98]

Again, if the operator fails to give the required notice, then the surface owner may seek relief in superior court in the county where "the oil or gas well is located and may receive actual damages."[99]

These are relatively short notice periods. Several states, including Colorado,[100] New Mexico,[101] South Dakota,[102] and Wyoming,[103] require that at least 30 days' notice be given to surface owners prior to operations that disturb the surface. Montana[104] and North Dakota[105] require that 20 days' notice be given prior to operations that disturb the surface.

Particularly for those operations that disturb the surface, after notice is given, surface owners may need ample time to evaluate the operator's development plans, to confirm that water baseline samples have been taken (assuming that these will be required as recommended by DENR), and to secure or move property resources, such as crops, livestock, fences, equipment, and buildings. Further, because there has been virtually no oil or gas development in North Carolina -- and especially in those instances where the mineral rights have been severed, and the surface owner is not a party to the lease and may be unaware that the mineral rights have been leased -- the surface owners initially may not know what to expect and how best to ameliorate negative impacts from gas operations.

The Division has reviewed two Whitmar leases entered into with landowners in North Carolina.[106] The leases are virtually identical and appear to be a form lease used by Whitmar in North Carolina. The leases provide for a notice period of at least 30 days to the lessor (who will be either the unified surface owner or, where the mineral rights have been severed, the mineral rights owner) before entering the property for operations that disturb the surface. This further indicates that a minimum period of at least 30 days' advance notice to surface owners is a reasonable requirement. However, as written, this provision in Whitmar's leases (and, presumably, in any other leases that contain similar provisions) will *not* require Whitmar's

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98 N.C. Gen. Stat. § 113-420(b).

99 N.C. Gen. Stat. § 113-420(c).

100 Colo. Rev. Stat. § 34-60-106.

101 N.M. Stat. Ann. § 70-12-5.

102 S.D. Codified Laws § 45-5A-5.

103 Wyo. Stat. Ann. § 30-5-402.

104 Mont. Code Ann. § 82-10-503.

105 N.D. Cent. Code § 38-11.1-04.1.

106 As explained in section 4.E. below, Whitmar has recorded summary memoranda of its leases, but it has not recorded the entire leases with registers of deeds' offices. One of the leases reviewed by the Division was provided to RAFI by a landowner. The second lease reviewed by the Division was recorded by a lender when the lease was assigned to the lender following the lender's acceptance of a deed in lieu of foreclosure from the landowner.

notification of surface owners where the surface owner does not own the mineral rights and has not entered into the lease. Further, because all of the Whitmar leases appear to have been entered into in 2010, well prior to June 15, 2011, given the existing language of N.C. Gen. Stat. § 113-424, under current statutory law, Whitmar (and any other companies that entered into leases prior to June 15, 2011) arguably would not be required to give split estate surface owners (who only own the surface rights) prior notice of their operations.

C. Input of Surface Owners on the Development Plan

As set forth above, N.C. Gen. Stat. § 113-420(b) requires an operator to include, as part of the notice, an "offer... to consult with the surface owner to review and discuss the location of the proposed alterations." However, the section does *not affirmatively require* the operator to take the surface owner's concerns or objections into account if the surface owner raises objections or concerns, nor does the section require the operator to reasonably accommodate the surface owner's uses of the surface.

Several states, including Colorado,[107] New Mexico,[108] Oklahoma,[109] Utah,[110] West Virginia,[111] and Wyoming,[112] affirmatively require oil and gas operators either to enter into, or to offer, surface use agreements prior to beginning operations on the surface. New Mexico's statute, which was enacted in 2007, sets forth particularly detailed requirements for surface use agreements, as it requires that, with its notice, the operator include a proposed surface use and compensation agreement that addresses "at a minimum and to the extent known," the following issues:

> "(a) placement, specifications, maintenance and design of well pads, gathering pipelines and roads to be constructed for oil and gas operations;
>
> (b) terms of ingress and egress upon the surface of the land for oil and gas operations;
>
> (c) construction, maintenance and placement of all pits and equipment used or planned for oil and gas operations;
>
> (d) use and impoundment of water on the surface of the land;
>
> (e) removal and restoration of plant life;
>
> (f) surface water drainage changes;

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107 Colo. Rev. Stat. § 24-65.5-103.3.
108 N.M. Stat. Ann. § 70-12-5.
109 52 Okla. St. § 318.3.
110 Utah Admin. Code R649-3-34(6).
111 W. Va. Code § 22-6A-16(c)(3).
112 Wyo. Stat. Ann. § 30-5-402.

(g) actions to limit and effectively control precipitation runoff and erosion;

(h) control and management of noise, weeds, dust, traffic, trespass, litter and interference with the surface owner's use;

(i) interim and final reclamation;

(j) actions to minimize surface damages to the property;

(k) operator indemnification for injury to persons caused by the operator; and

(l) an offer of compensation for damages to the surface affected by oil and gas operations."[113]

In some states, a drilling permit will not be issued until the operator can show that it has reached agreements with surface owners, or alternatively, has posted a bond to cover surface damages.[114] If the parties cannot agree, then most states' surface damages acts require one party or the other to bring a court action, or allow the parties to submit the matter to private mediation or arbitration. In at least two states, Kentucky and Wyoming, mediation is available through state agencies if the parties cannot agree on a surface use and compensation agreement.[115]

Additionally, in an effort to incentivize operators to make fair settlement offers to surface owners, numerous state statutes provide that, if the surface owner rejects the operator's offer as inadequate and brings suit, and the court awards the surface owner more in damages than the operator offered in settlement, then the surface owner may recover attorneys' fees and costs.[116]

D. Compensation for Surface Damages

Existing law. N.C. Gen. Stat. § 113-421(a)(2) provides that an oil and gas operator is obligated to pay the surface owner compensation for "[t]he cost of repair of personal property of the surface owner, which personal property is damaged due to activities of the developer or

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[113] N.M. Stat. Ann. § 70-12-5.

[114] N.M. Stat. Ann. § 70-12-6; 52 Okla. St. §§ 318.3, 318.4; Wyo. Stat. Ann. § 30-5-402.

[115] In Wyoming, if the operator and surface owner cannot reach agreement on a surface use agreement, either of the parties may request mediation through the Wyoming agriculture and natural resource mediation board, which is a board that has been established to resolve disputes involving agriculture or natural resources. In Kentucky, if the operator and surface owner cannot reach agreement, and the mineral estate has been severed, the operator may request mediation by Kentucky's Department for Natural Resources. Ky. Rev. Stat. Ann. § 353.5901; Wyo. Stat. Ann. §§ 305-402(f); Wyo. Stat. Ann. §§ 11-41-101, *et seq.*

[116] N.D. Cent. Code § 38-11.1-09; § 765 Ill. C.S. 530/6; Kentucky § 353.595; Tenn. § 60-1-607.

operator, up to the value of replacement by personal property of like age, wear and quality."[117]

While this section provides for some compensation to surface owners, the compensation is limited to damage to personal property. (N.C. Gen. Stat. § 113-421 also provides for compensation for damage to an existing water supply, which will be discussed in section 3.E., *infra*.) Therefore, many other types of foreseeable damages are not covered by this section, such as damage to real property, damage to growing crops, subsequent agricultural production, timber, and diminution in the value of the land. If the surface owner sustains these damages, he would not be able to recover under section 113-421.

Laws in other states. Numerous states require operators to compensate surface owners for a considerably broader range of damages than those provided for under existing North Carolina law.[118] Some of these statutes cover damages to real property; personal property; and loss of agricultural production, including damage to crops, timber or livestock.[119] In addition, some statutes require the operator to compensate the surface owner for damages for lost income or expenses, and for the diminution in value of the land, if the operator's activities cause the value

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[117] N.C. Gen. Stat. § 113-421(c).

[118] *See, e.g.*, § 765 Ill. Comp. Stat. 530/6 (Requiring compensation for damage "to growing crops, trees, shrubs, fences, roads, structures, improvements, personal property, and livestock," as well as compensation for "subsequent damages" and "for the loss of the value of a commercial crop taken out of production."); Ind. Code Ann § 32-23-7-6 (Requiring compensation for "actual damage" to "the surface of the land; improvements to the land; or growing crops on the land."); Ky. Rev. Stat. Ann. § 353.595 (Requiring compensation for damage "to growing crops, trees, shrubs, fences, roads, structures, improvements, personal property, and livestock".); Mont. Code Ann. § 82-10-504 (Requiring compensation for "damages to real or personal property caused by oil and gas operations and production."); N.M. Stat. Ann. § 70-12-4 (Requiring compensation for "loss of agricultural production and income, lost land value, lost use of and lost access to the surface owner's land and lost value of improvements caused by oil and gas operations."); N.D. Cent. Code §§ 38-11.1-04, 38-11.1-08.1 (Requiring compensation for "lost land value, lost use of and access to the surface owner's land, and lost value of improvements caused by drilling operations," as well as for "loss of agricultural production and income".); 52 Okla. St. § 318.5 (Requiring compensation for "any damages which may be caused by the drilling operation."); S.D. Codified Laws § 45-5A-4 (Requiring compensation for "loss of agricultural production, lost land value, and lost value of improvements."); Tenn. Code Ann. § 60-1-604 (Requiring compensation for "lost income or expenses incurred as a result [of being unable to use the land];" "the market value of crops destroyed, damaged or prevented from reaching market;" "the costs of repair of personal property up to the value of replacement by personal property of like age, wear and quality;" and "the diminution in value, if any, of the surface lands and other property after completion of the surface disturbance".); W.Va. Code § 22-6B-3 (Requiring compensation for "lost income or expenses"; "the market value of crops, including timber, destroyed, damaged or prevented from reaching market;" "the costs of repair of personal property up to the value of replacement by personal property of like age, wear and quality;" and "the diminution in value, if any, of the surface lands and other property after completion of the surface disturbance".); Wyo. Stat. Ann. § 30-5-405 (Requiring compensation for "damages sustained by the surface owner for loss of production and income, loss of land value and loss of value of improvements".).

[119] *See* footnote 119, *supra*.

of the land to decrease.[120]

Increased property taxes. For landowners engaged in agricultural production activities, oil and gas operations may cause the landowner to incur substantial additional property taxes. Under North Carolina law and some federal conservation programs, land that is currently used for agricultural, horticultural, or forestry purposes may qualify for the present-use value tax program.[121] Under this program, the property is assessed for tax purposes at its present-use value, which is the value of the land based on its ability to produce income, rather than its market value, which is usually much higher than the present-use value.[122] If land becomes disqualified under the program, for example, by no longer being used for agricultural, horticultural or forestry purposes, the property owner becomes responsible for deferred taxes, often called "rollback taxes," for the current year, as well as taxes for the preceding three years, plus interest.[123] Further, if the land is disqualified, the surface owner will pay higher property taxes in subsequent years. In recognition that oil and gas activities may cause surface owners' property taxes to increase, at least one state, West Virginia, requires operators to make a one-time payment to surface owners of $2,500 solely for property taxes, in addition to payment for other surface damages.[124]

Applicable provisions of Whitmar leases. Two Whitmar leases reviewed by the Division indicate that Whitmar agreed, if and when operations commenced, to pay the lessor (who, as the mineral owner, may not necessarily be the surface owner) a onetime payment of $10,000 "per drill site location" for surface damages for the "location of the well site, an access road thereto and/or a pipeline right of way." In addition to this onetime payment, Whitmar agreed to pay compensation for any damage caused to "crops, trees, shrubs, structures, and existing roads." Further, Whitmar also agreed to reimburse the lessor for any tax penalties, including any rollback taxes, interest, or other increase in ad valorem, severance, real estate or mineral taxes that are subsequently levied against the property as a result of its operations.

At this time, the Division does not have sufficient information to state whether these provisions in Whitmar's leases are representative of other leases in the industry generally. However, following a review of more than 110,000 gas leases, addenda and related documents by *The New York Times* – most of which were from Texas, but some were from Maryland, New York, Ohio, Pennsylvania and West Virginia – the *Times* reported that only about half the documents

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[120] *See* footnote 119, *supra*.

[121] North Carolina Department of Revenue, "Present Use Value Program Guide," Second edition, Oct. 18, 2011. North Carolina Cooperative Extension Service, "Frequently Asked Questions about Oil and Gas Leasing and Production in North Carolina: What Every Landowner Should Know." Retrieved from <http://www.rafiusa.org/docs/gasleasingncsufaq.pdf>

[122] North Carolina Department of Revenue, "Present Use Value Program Guide," Second edition, Oct. 18, 2011.

[123] Ibid.

[124] W. Va. Code § 22-6A-17.

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required payment for damages to livestock or crops.[125]

It is well established that oil and gas operations cause extensive damage to the surface, prevent landowners from using the land that is being used for gas operations, and can cause landowners to incur significant losses and expenses, including loss in land value and tax liabilities.

E. Damage to Water Supply

Existing law. N.C. Gen. Stat. § 113-421(a)(1) obligates an operator to pay the surface owner compensation for "any damage to a water supply in use prior to the commencement of the activities of the developer or operator which is due to those activities." While this provision provides some measure of protection for landowners for damage to their water supply, it has significant limitations, including the following: (1) the provision does not require the operator to restore or replace the surface owner's water at the time of contamination, but instead only requires compensation after the damage occurs; (2) the provision does not require the operator to conduct baseline tests of water; unless baseline tests are conducted prior to operations, the surface owner will likely have considerable difficulty in proving that the operator's activities caused the damage; (3) the provision applies only to a water supply in use prior to the commencement of the gas activities and does not cover a well or water supply that the surface owner may drill or access later, even if the surface owner can show that the subsequent water supply was contaminated by the operator's activities; and (4) under N.C. Gen. Stat. § 113-424, this provision arguably only applies to activities pursuant to leases entered into on or after June 15, 2011.

Because water supply is a critical issue for landowners, and because shale gas extraction has been linked with water contamination, several states, including Pennsylvania and West Virginia, have recently adopted provisions requiring operators to immediately restore or replace damaged water supplies of affected surface owners and other users with an alternate source of water of adequate quality and quantity.[126] In Pennsylvania, a landowner suffering pollution or diminution of a water supply due to oil and gas operations may notify Pennsylvania's Department of Environmental Protection and request that an investigation be conducted.[127] The Department is required to investigate the claim within ten days of notification and make a determination within 45 days. If the Department finds that the contamination or diminution was caused by the operations, the Department must issue orders to the operator to require the operator to restore or replace the water supply. Additionally, the Department is required to publish on its Internet website confirmed cases of water supply contamination resulting from hydraulic fracturing.[128]

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[125] Urbina, Ian, "Learning Too Late of Perils in Gas Well Leases." The New York Times, Dec. 1, 2011. Retrieved from <http://www.nytimes.com/>

[126] 58 Pa. Stat. § 3218; W. Va. Code § 22-6A-18. *See also* N.D. Cent. Code § 38-11.1-06.

[127] 58 Pa. Stat. § 3218.

[128] Ibid.

Presumption of causation. Pennsylvania and West Virginia also have established statutory rebuttable presumptions of causation where contamination occurs.[129] In Pennsylvania, an operator is presumed to be responsible for contamination of a water supply if the water supply is within 2,500 feet of the well, and the contamination occurred within one year of the operations.[130] The operator can rebut the presumption if the operator shows that the contamination existed prior to the operations; or the contamination was not caused by the operator; or that the landowner refused to allow the operator to conduct pre-drilling tests of the water.[131] West Virginia's statutory presumption of causation is similar, and it recognizes a presumption of causation for water contamination occurring within 1,500 feet of a well and within six months of operations.[132]

Applicable provisions of Whitmar leases. The two Whitmar leases reviewed by the Division contain provisions regarding water use by Whitmar. The provisions provide that Whitmar will test the lessors' water wells prior to drilling operations, that a report of the testing will be provided to the lessors at no cost, and that if its operations adversely affect the lessors' water supply, Whitmar will be liable "at its own expense, to make every effort to return said water supply to as equal a condition as possible to pre-drilling conditions." In addition, the leases provide that Whitmar will not use water from the lessors' wells without prior written consent from the lessors. The leases allow Whitmar to drill its own water well and use water from that well for drilling operations, but state that Whitmar will not damage the lessors' water wells and will not operate in such a way as to "interfere with or restrict" the lessors' water supply.

Thus, the Whitmar leases contain provisions that provide some protection for landowners for damage to their water supply, which indicates that at least some gas companies voluntarily agree to assume such liability. However, it is reported that many companies do not assume such liability. Based on its review of more than 110,000 gas leases, *The New York Times* reported that "[f]ewer than half the leases require companies to compensate landowners for water contamination after drilling begins."[133] In addition, in the same article, a lease lawyer in Denver, Colorado, stated that in his experience, leases often lacked a clause requiring drillers to pay for a test of the property's well water before drilling started, and that "landowners often do not think to do the tests themselves." The attorney further observed that, if no baseline tests have been conducted, "landowners have few options if they want to prove that their water was fine before drilling started."[134]

F. *Restoration of the Surface*

Current law in North Carolina does not require that the operator restore or reclaim the surface

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[129] 58 Pa. Stat § 3218; W.Va. Code § 22-6A-18.
[130] 58 Pa. Stat § 3218.
[131] Ibid.
[132] W. Va. Code § 22-6A-18.
[133] Urbina, Ian, "Learning Too Late of Perils in Gas Well Leases." The New York Times, Dec. 1, 2011. Retrieved from <http://www.nytimes.com/>
[134] Ibid.

following the completion of drilling operations, and existing law does not give the surface owner a right of action if the surface is not restored. Further, as noted by DENR, under existing North Carolina law, bonds collected for oil and gas wells "can only be used to plug abandoned wells," and do not cover reclamation and remediation of the surface. (DENR report, section 9, "Recommendations and limitations," recommendation no. 11.) Numerous other states obligate an oil and gas operator to reclaim or restore the land surface to its original condition, or to as near as practicable to its original condition,[135] following the completion of operations, and allow a surface owner to bring a legal action for restoration or remediation if the site is not restored.[136] Further, some states require operators, prior to the commencement of activities, to post a bond to cover reclamation of the property.[137] In addition, some states mandate that, following the plugging of a well, the operator remove all production or storage facilities, supplies and equipment from the well site within a certain period of time.[138]

A review of two Whitmar leases indicates that Whitmar agreed "on completion of any operation, [to] restore the ... premises to predrilling conditions, remove all debris, equipment, and personal property which [Whitmar] placed on the ... premises (except for equipment needed for the operation of producing wells, which shall be removed within six (6) months after a well permanently ceases to produce)." Therefore, in addition to many states' statutory requirement of restoration or reclamation, some operators have contractually agreed to such restoration or reclamation.

In its recommendations, DENR has recommended broadening existing law to allow bonds to be used for "reclamation and remediation of sites contaminated by oil and gas activities," and has recommended that revenues collected from severance taxes and program fees be used in part for restoration and reclamation "for lands adversely by oil and gas exploration and production." (DENR report, section 9, "Recommendations and limitations," recommendation nos. 11, 14) The Division fully supports those recommendations.

G. Indemnification

N.C. Gen. Stat. § 113-422, titled "Indemnification," provides: "An oil or gas operator shall indemnify a surface owner for damage to property that is adjacent to property on which drilling occurs, as well as adjacent infrastructure, and wells." While not defined in the statute, as set forth in *Black's Law Dictionary*, which is often cited by courts, "indemnify" means, in part, "to reimburse (another) for a loss suffered because of a third party's or one's own act or default; [to] hold harmless."[139] In turn, a "hold harmless agreement" is a "contract in which one party

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[135] *See, e.g.*, Ark. Code Ann. § 15-72-219; § 765 Ill. Comp. Stat. 530/6; Ky. Rev. Stat. Ann. § 353.595(7); La. Rev. Stat. Ann. § 31:22; N.M. Stat. Ann. § 70-12-4; Ohio Rev. Code Ann. § 1509.072; 58 Pa. Cons. Stat. § 3216; W. Va. Code § 22-6A-14.

[136] *See, e.g.*, Ark. Code Ann. § 15-72-219; § 765 Ill. Comp. Stat. 530/6; Ky. Rev. Stat Ann. § 353.595(7); La. Rev. Stat. Ann. § 31:22; N.M. Stat. Ann. § 70-12-4; Ohio Rev. Code Ann. § 1509.072.

[137] S.D. Codified Laws § 45-9-15.1; Wyo. Stat. Ann. § 30-5-104(d).

[138] *See, e.g.*, Ohio Rev. Code Ann. § 1509.072; 58 Pa. Stat. § 3216.

[139] Black's Law Dictionary (9th ed. 2009).

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agrees to indemnify the other," by assuming the liability inherent in a situation, thereby relieving the other party of responsibility."[140]

As previously noted, N.C. Gen. Stat. § 113-421(a)(2) obligates an operator to pay the surface owner compensation for "[t]he cost of repair of personal property of the surface owner." N.C. Gen. Stat. § 113-422 requires indemnification of the surface owner for "damage to property that is adjacent to property on which drilling occurs." Unlike N.C. Gen. Stat. § 113-421(a), which is limited to "repair of personal property," N.C. Gen. Stat. § 113-422 does not specify whether it is intended to cover real property, personal property, or both. Presumably, the term is intended to include both. Therefore, by their terms, the statutes appear to give broader protection for adjacent lands of surface owners than property where drilling occurs. Because this construction seems illogical, and by its use of the term "indemnify," which often is used in the context of claims by third parties, the Division presumes that the intent of N.C. Gen. Stat. § 113-422 is to require the operator to indemnify the surface owner for any claims brought against the surface owner by adjacent landowners for damages to their property caused by the operator's activities. However, as this section refers only to damage to "property," it would not cover claims of personal injury.

As a general principle of tort law, the party that caused a harm or injury is held to be liable for compensation to the injured party. In recognition of this principle, and to assure landowners who enter into leases that they will not be at personal financial risk if an accident or damage occurs, some operators contractually indemnify surface owners against any third party claims that may be brought against the surface owner as a result of the operator's activities.

Notably, Whitmar's leases provide for indemnification for lessors (namely, the person giving the lease, who is either the unified surface owner, or the mineral rights owner if the mineral rights are severed), as the leases provide that Whitmar will pay for any claims of any kind, whether relating to property damage or personal injury, that may be asserted against the lessor relating to Whitmar's operations:

> Indemnification/Environmental: Lessee [Whitmar] agrees to hold Lessor harmless from any claims, which may arise as a result of Lessee's operations on the Leasehold Premises. Lessee shall indemnify and hold Lessor harmless from any and all liability, liens, demands, judgments, suits, and claims of any kind or character arising out of, in connection with, or relating to Lessee's operations under the terms of this lease, including, but not limited to, environmental issues, claims for injury to or death of any persons, or damage, loss or destruction of any property, real or personal, under any theory of tort, contract, or strict liability. Lessee further covenants and agrees to defend any suits brought against Lessor on any claims, and to pay any judgment against Lessor resulting from any suit or suits, together with all costs and expenses relating to any claims, including reasonable attorney's fees, arising from Lessee's operations under the terms of this lease.

[140] Ibid.

H. *Remedies Are Intended to Be Cumulative*

A common feature of at least nine states' surface damages acts is the acts' express statement that the remedies afforded by the acts are intended to be cumulative, and do not preclude any person from seeking other remedies allowed by law.[141] For example, New Mexico's Act provides: "The remedies provided by the Surface Owners Protection Act are not exclusive and do not preclude a person from seeking other remedies allowed by law."[142] While courts generally treat statutory enactments as cumulative of common law remedies, in some situations courts have held that where statutes specifically address a particular subject, then that statute affords the exclusive remedy. In light of many states' pronouncements that their surface owner protection acts are not intended to afford exclusive remedies to landowners, the General Assembly may wish to adopt similar legislation making its intent clear.

Section 4 – Challenges Posed by the Leasing Process

A. *Lack of Knowledge and Imbalance of Bargaining Power*

Oil and gas leases are offered by a wide variety of entities, including major oil companies, smaller oil and gas exploration companies, and independent entities that broker deals between landowners and drilling companies. Oftentimes, these leases are purveyed by "landmen" who go door-to-door and solicit landowners in oil or shale-rich areas to sign leases. In other instances, leases may be mailed to landowners.[143] Some landmen work for oil and gas companies; others are employed by independent landman companies, and others are self-employed contractors. Once an area is identified as having potential for oil or gas development, the landman's job is to research property titles in the area to identify mineral rights owners, and to offer leases to those owners.

Landmen are not licensed, and there does not appear to be any official regulation of the industry by any state. Some landmen belong to the American Association of Professional Landmen (AAPL), which is based in Fort Worth, Texas and is recognized as the leading association in the industry. AAPL has education programs and certifies landmen who meet certain educational and professional requirements, and has a code of conduct for its

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[141] § 765 Ill. Comp. Stat. 530/7; Ky. Rev. Stat. Ann. § 593.595(8); Mont. Code. Ann. § 82-10-511; N.M. Stat. Ann. § 70-12-8; N.D. Cent. Code § 38-11.1-10; S.D. Codified Laws § 45-5A-10; Tenn. Code Ann. § 60-1-608; W. Va. Code § 22-6B-4; Wyo. Stat. Ann. § 30-5-407.

[142] N.M. Stat. Ann. § 70-12-8.

[143] The Division understands that some landowners in Lee County received leases in the mail in 2010, which were accompanied by a check. At a Cooperative Extension Service meeting in Pittsboro for landowners in the fall of 2011, which the Division attended, a landowner reported receiving such a lease in the mail, but stated that he had thrown away the mailing and did not remember the name of the company that had sent it.

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members.[144] However, landmen are not required to belong to AAPL.

When an area is identified as having potential oil or shale gas reserves, the goal of oil and gas companies is to lease as much acreage in a given area as possible, in the shortest amount of time, and at the lowest possible price. As a result, pressure sales are not uncommon. According to interviews with more than two dozen landowners in Ohio, Pennsylvania and Texas by *The New York Times*, landowners were encouraged to sign leases immediately, as the landmen told them they were "in town until tomorrow," and they had "already signed up all your neighbors."[145] The landowners also reported being told that "if you do not sign right away you will miss out on easy income because other drillers will simply pull the gas from under your property using a well nearby."[146] *The New York Times* article reported that some landmen "show up in poorer areas shortly before the holidays, offering cash on the spot for signing a lease."[147]

A similar news article reported on sales practices used by representatives of an oil and gas producer at a leasing open house at Ohio University in October 2011.[148] According to the article, a representative told one landowner, who recorded the conversation, that the company just used "sand, water, and household chemicals like Dawn dishwashing detergent" in the drilling process and failed to disclose that some of the chemicals used are carcinogenic. The representative also implied that the landowner had a choice as to whether to renew the lease after a five-year term, when the lease actually allowed the company to renew at its option, but did not permit the landowner to cancel. Finally, the representative quoted the landowner a vastly below-market price as a bonus payment, offering him $200 an acre; a local real estate broker who commented for the article stated that the going price for leases in the area at the time was between $2,500 and $3,000 an acre.[149]

A 2011 report issued by the Environmental Working Group, a Washington-based advocacy group which studied leasing practices in five states, found that the risks of shale gas development, including leaks, spills, explosions and blowouts are rarely disclosed to landowners.[150] The report noted that these same risks are routinely disclosed to shareholders and potential investors in disclosure forms filed with the Securities and Exchange

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[144] Website of American Association of Professional Landmen, retrieved from www.landman.org; John McFarland, Esq., attorney with Graves, Dougherty, Hearon & Moody, of Austin, Texas, and who represents landowners, "Dealing with landmen," posting Dec. 11, 2011, retrieved from www.oilandgaslawyerblog.com.

[145] Urbina, Ian, "Learning too late of perils in Gas Well Leases," The New York Times, Dec. 1, 2011, retrieved from www.nytimes.com .

[146] Ibid.

[147] Ibid.

[148] Eichelberger, Erika, "As Fracking Boom Hits Ohio, Deceptive Industry Practices Squeeze Landowners," EcoWatch, Feb. 26, 2012, retrieved from www.alternet.org.

[149] Ibid.

[150] Horwitt, Dusty, "Drilling Doublespeak: Gas Drillers Disclose Risks to Shareholders – But Not to Landowners," Environmental Working Group, December 2011, retrieved from www.ewg.org .

Commission.[151] Some of the landowners interviewed for the report stated that they would not have leased their land if they had been informed of the risks of hydraulic fracturing.[152]

Because of the complexity of most oil and gas leases, and because most landowners have never negotiated an oil and gas lease, a researcher at the Massachusetts Institute of Technology commented, "When it comes to negotiation skills and understanding of lease terms, there is a gaping inequality between the average landman and the average citizen sitting across the table."[153] Additionally, the consequences of signing such a lease can be far reaching and long lasting. As noted by a lawyer in West Virginia who represents landowners, "[W]ith a gas lease, you're permitting industrial activity in your backyard, and you're starting a relationship that will affect the quality of living for you and your grandchildren for decades."[154]

Leasing practices in North Carolina. As set forth in DENR's report, (section 1.D, "Leasing of mineral rights"), only one company, Whitmar Exploration Company, is known to have entered into an appreciable number of leases with landowners in North Carolina. The company currently holds 63 leases covering a total acreage of 5,958.41 acres in Lee County. The remaining two companies, Tar Heel Natural Gas, LLC and Hanover, LLC, each hold one lease, and both of those leases expire in 2013. To the knowledge of the Division, other than Whitmar, no other oil or gas company has made substantial efforts to offer leases to North Carolina landowners.

It appears that leasing activity halted after 2010. The reasons for the cessation are unclear, but one reason may be the Cooperative Extension Services' and RAFI's extensive efforts to provide information to landowners through numerous community information sessions on leasing from 2010 to the present.[155] Other likely reasons are that hydraulic fracturing is illegal in North Carolina, there is no established production of oil or gas in the State, and there has been a decline in the price of natural gas.

While the Division has not received any complaints from North Carolina consumers regarding oil and gas leasing practices by Whitmar or by any other entity, the Division believes that the oil and gas leasing process generally raises consumer protection concerns.

B. *Need for Consumer Education and a "Cooling-Off" Period*

As set out in section 1 above, oil and gas leases can have long-lasting and profound impacts on landowners. Among negative impacts, oil and gas leases have the potential to prevent or restrict landowners from refinancing their residential mortgage or obtaining new credit; and leases can reduce the value and available market for landowners' land. Further, if oil and gas

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[151] Ibid.

[152] Ibid.

[153] Urbina, Ian, "Learning too late of perils in Gas Well Leases," The New York Times, Dec. 1, 2011, retrieved from www.nytimes.com .

[154] Ibid.

[155] Susan Condlin; Jordan Treakle.

extraction occurs, landowners will lose the ability to use a portion of their land, and the land surface will be damaged. In addition, particularly if accidents occur, landowners may be exposed to substantial environmental and health hazards.

Provision of Information to Landowners

Based on information available to the Division, it appears that very few, if any, landowners are informed of these risks at the time they enter into a lease. In North Carolina, where there has been virtually no oil and gas exploration and development, landowners are likely to know even less about leasing and about oil and gas development than landowners in other states with long histories of oil and gas extraction. Even for educated landowners, gas leases are extremely complex legal documents that contain terms that are unfamiliar to most people, which can present major challenges for landowners in the negotiation process. As noted by one Pennsylvania landowner, "If you've never seen a good lease, or any lease, how are you supposed to know what terms to try to get in yours?"[156]

As recommended by North Carolina's Cooperative Extension Service and landowner advocacy organizations, landowners should not be rushed into signing when approached with a lease offer.[157] Before signing a lease or any documents, landowners should consult with an attorney to be sure they understand the lease's terms. Further, landowners should contact their lender if they have a mortgage loan, or anticipate seeking a mortgage, to ensure that the lease will not jeopardize their mortgage, and that they will be able to obtain new credit in the future. Also, landowners should talk with their neighbors to compare lease terms and, if they decide to lease, landowners should consider joining together with their neighbors as a group to increase their bargaining power.

North Carolina's Cooperative Extension Service has made extensive efforts to hold numerous landowner education meetings in Lee, Chatham, and Moore counties, among others, to inform landowners in these areas about shale gas extraction and leasing issues. However, it is unknown what percentage of affected landowners attended the meetings.

C. Bonus Payments

As previously explained in section 2.A. above, a bonus payment is a lump sum payment made to the landowner when the landowner executes the lease, and it is often paid on a per acreage

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[156] Urbina, Ian, "Learning too late of perils in Gas Well Leases," The New York Times, Dec. 1, 2011, retrieved from www.nytimes.com .

[157] *See, e.g.*, North Carolina Cooperative Extension Service, "Frequently Asked Questions about Oil and Gas Leasing and Production in North Carolina: What Every Landowner Should Know." Retrieved from <http://www.rafiusa.org/docs/gasleasingncsufaq.pdf>. Emmett Environmental Law and Policy Clinic, "An Ohio Landowner's Guide to Hydraulic Fracturing." Harvard Law School, Jun. 16, 2011. Retrieved from <http://www.law.harvard.edu/>. Weidner, Krista, "Natural Gas Exploration – A Landowner's Guide to Leasing Land in Pennsylvania." Penn State Cooperative Extension, 2008. Retrieved from <http://pubs.cas.psu.edu/FreePubs/pdfs/ua448.pdf>.

basis. The amount of the bonus payment in gas leases is determined by market factors and lease-specific conditions, including the market price of natural gas; whether oil and gas production has been established in the area; the availability of gathering pipeline infrastructure; whether competition exists for leases in the area; the amount of acreage under the lease; and the knowledge and negotiating skill of the parties.[158]

Low Bonus Payments Made in North Carolina

Some public comments have expressed concern that in 2010, North Carolina landowners leased their land in exchange for very low bonus prices – with typical prices ranging between $1 and $10 an acre, with some up to $25 an acre.[159] As observed in section 2.A., in 2009, the Congressional Research Service reported that bonus prices ranged from a low of $5 per acre in West Virginia in 2007 and 2008, to a high of $20,000 per acre in Texas in 2009, with payments of between $1,000 and $3,000 reported in Pennsylvania, New York, and West Virginia in 2009.[160] With the continued downward trend of natural gas prices, particularly over the past year, generally bonus payments are lower now than they were in 2009.

Based on the Division's legal research, there do not appear to be any reported cases from any jurisdiction, either state or federal, where a court has held a particular bonus payment in an oil or gas lease to be *per se* illegal, or where a court has invalidated a bonus payment on the ground that it was too low in comparison with other bonus payments paid. Additionally, unlike the numerous state statutes regulating the payment of royalties (namely, the mineral owner's share of production), the Division is unaware of any state statutes addressing the amount of bonus payments in oil and gas leases. To date, legislatures and courts have left the amount of bonus payments to the market.

Timing and Manner of Bonus Payment

In some instances, bonus payments are made at the time the landowner signs the lease. However, it is not uncommon for leases to provide that the bonus payment will be deferred to a future date, so as to allow the gas company time to complete its title research and verify the landowner's ownership of the mineral rights. Whitmar's leases entered into in 2010 with North Carolina landowners exemplify this practice. The leases include a separate payment agreement which allows Whitmar 90 banking days to verify that the landowner has full ownership of the mineral estate, and allows Whitmar to extend the payment period for an additional 30 banking days for the purpose of completing title work. The Division is unaware of any complaints by North Carolina landowners that Whitmar failed to pay them the bonus payments specified in their leases.

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[158] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 53.

[159] Jordan Treakle, RAFI. Both of the payment agreements reviewed by the Division provided for bonus payments in the amount of $20 per acre.

[160] Congressional Research Service, "Unconventional Gas Shales: Development, Technology, and Policy Issues," Oct. 30, 2009.

However, recent news reports and lawsuits filed by landowners in other parts of the country allege that, due to economic factors or drilling prospects, some oil and gas companies have systematically failed to pay bonus payments after signing up landowners for leases.[161] For example, a lawsuit filed in federal court in Texas against Chesapeake Exploration, LLC and its affiliates alleged that, because of adverse economic conditions that had nothing to do with the leases, Chesapeake attempted to renegotiate agreed lease bonuses at a lower price and delayed or refused to pay agreed full lease bonuses on over 500 leases in Texas.[162] News reports indicate that Chesapeake has engaged in similar activity in Colorado, North Dakota, and Michigan, where, according to one report, approximately 140 lawsuits are pending against Chesapeake and a Chesapeake subsidiary.[163]

An analogous lawsuit was filed by landowners in federal court in West Virginia against Range Resources-Appalachia, LLC, a subsidiary of Range Resources Corp.[164] In their complaint, the plaintiffs alleged that, beginning in early 2008, as oil and natural gas reserves in the Marcellus shale formation became highly sought after, Range offered leases with higher royalties and bonuses than paid by its competitors, in an effort to lock up leases in the area. The bonus contracts stated that the payments would be subject to a 180-day approval period during which Range would confirm the landowner's title to the property. The plaintiff landowners alleged that, despite the representations of Range's landmen that the title searches were "mere formalities," Range spent the approval period monitoring the spot markets for oil and natural gas in order to determine the profitability of the leases and bonus contracts. When oil and gas prices began to plummet in the fall of 2008, Range refused to honor most of the contracts and failed to pay the bonus payments, returning the leases to plaintiffs stamped "void."[165]

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[161] Jaffe, Mark, "Chesapeake Energy cancels some mineral leases in two Colorado counties," The Denver Post, April 4, 2012, retrieved from www.denverpost.com. Donovan, Lauren, "Chesapeake Energy pulling back, won't honor lease agreements," Bismarck Tribune, Feb. 7, 2012, retrieved from www.bismarcktribune.com. Reuters, "Energy giant hid behind shells in `land grab,'" Dec. 28, 2011, retrieved from www.reuters.com.

[162] *Witt v. Chesapeake Exploration, LLC, et al.*, 276 F.R.D. 458 (E.D. Tx. 2011) (denying class certification to the plaintiffs on their claims).

[163] Jaffe, Mark, "Chesapeake Energy cancels some mineral leases in two Colorado counties," The Denver Post, April 4, 2012, retrieved from www.denverpost.com . Donovan, Lauren, "Chesapeake Energy pulling back, won't honor lease agreements," Bismarck Tribune, Feb. 7, 2012, retrieved from www.bismarcktribune.com. Reuters, "Energy giant hid behind shells in `land grab,'" Dec. 28, 2011, retrieved from www.reuters.com .

[164] *Backwater Properties, LLC v. Range Resources-Appalachia, LLC, et al.*, 2011 U.S. Dist. LEXIS 48496; 2011-1 Trade Cas. (CCH) P77,479 (N.D. W.Va. 2011) (denying defendants' motion to dismiss the plaintiffs' claims for breach, specific performance, and fraud, among other claims).

[165] Ibid. The Division notes that most standard oil and gas leases place the risk of title on the landowner, although the Division understands that there generally appears to be an absence of actions by lessees for breach of warranties of title. One reason for this may be due to gas companies' practice of performing some amount of title research *before* seeking to enter into leases. (Harry Weiss)

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D. *Term of Leases*

Most modern oil and gas leases contain a term clause that provides for a primary term and a secondary term. The *primary term* of an oil and gas lease is a fixed term of years during which the lessee (namely, the oil and gas operator), has the option, but not the obligation, to explore for and produce oil and gas. Essentially, the lease primary term sets the maximum period of time for which the operator can maintain its lease rights without drilling.[166] The purpose of the lease primary term is to give the operator time to acquire additional leases in the area, to do geological and geophysical tests to evaluate whether to drill a test well, and to arrange for financing and support services to drill.[167] The length of the primary term is determined by the market and by the bargaining leverage of the parties. According to one legal treatise, ten years was once a common primary term, and ten-year leases are "still frequently seen in leases in unproven and marginally producing areas."[168] In areas with established oil and gas production, the primary term is typically from one to five years.[169]

Under the common law of most states, and the language of most leases, prior to the expiration of the primary term, the operator has an obligation to complete a well and establish actual production. Once actual production is established, then the lease typically transitions to its secondary term. The *secondary term* is for an indefinite period of time, and is typically for as long as oil or gas is produced.[170] The purpose of the secondary term is to give the operator the right to hold a producing lease as long as it is profitable or economically viable.[171]

Existing Whitmar leases. Most of the leases entered into by Whitmar with North Carolina landowners in 2010 provide for an initial primary term of ten years. However, most of the leases alllow Whitmar, at its sole option, to extend the primary term for another ten years, provided that Whitmar makes a second bonus payment to the landowner in ten years in the same amount as the first bonus payment. As a result, most of the existing Whitmar leases extend for an extremely long term, allowing Whitmar up to twenty years to drill. If a well is drilled, the leases provide that they will extend indefinitely so long as Whitmar is producing oil or gas "in paying quantities." The term "paying quantities" is very commonly used as a standard in the oil and gas industry. In a widely-followed case, the Texas Supreme Court in 1959 held that "the standard by which paying quantities is determined is whether or not under all the relevant circumstances a reasonably prudent operator would, for the purpose of making a profit and not merely for speculation, continue to operate a well."[172]

North Carolina law. Pursuant to Session Law 2011-276, new General Statute section 113-423 restricts the term of oil and gas leases to a maximum of ten years, unless, at the end of the ten-

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[166] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 193.
[167] Ibid., at 192.
[168] Ibid., at 193.
[169] Ibid.
[170] Ibid.
[171] Ibid.
[172] *Clifton v. Koontz*, 325 S.W.2d 684 (Tex. 1959).

year period, "oil or gas is being produced for commercial purposes." In addition, if, after the ten-year period "commercial production" is terminated for six months or more, then the lease expires. Specifically, the section provides:

> § 113-423. Maximum lease terms.
>
> Any lease of oil or gas rights or any other conveyance of any kind separating rights to oil or gas from the freehold estate of surface property shall expire at the end of 10 years from the date the lease is executed, unless, at the end of the 10-year period, oil or gas is being produced for commercial purposes from the land to which the lease applies. If, at any time after the 10-year period, commercial production of oil or gas is terminated for a period of six months or more, all rights to the oil or gas shall revert to the surface owner of the property to which the lease pertains. No assignment or agreement to waive the provisions of this subsection shall be valid or enforceable. As used in this subsection, the term "production" includes the actual production of oil or gas by a lessee, or when activities are being conducted by the lessee for injection, withdrawal, storage, or disposal of water, gas, or other fluids, or when rentals or royalties are being paid by the lessee.

Section 113-423 applies to all leases entered into on or after June 15, 2011.[173] Thus, it does not apply to leases that North Carolina landowners entered into with Whitmar in 2010, and the primary terms of those leases will remain at least ten years, and possibly twenty years, if Whitmar decides to extend them with the payment of second bonus payments.[174]

The goal of landowners who lease their oil and gas rights is to obtain development of their property as soon as possible. The salutary intent of section 113-423 is to require that an operator attain "commercial production" within ten years, or the lease will expire. However, the definition of "production" in the statute is broad and could include relatively minimal activities by an operator, as production is expressly defined to include "activities ... for injection, withdrawal, storage, or disposal of water, gas, or other fluids, or when rentals or royalties are being paid by the lessee." Thus, under this definition, the mere payment of rental payments

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[173] N.C. Gen. Stat. § 113-424.

[174] Some comments have raised concerns regarding the long term of the Whitmar leases and have queried whether legislative action can be taken to shorten the terms of these existing leases. It is a well-established principle of law that legislation is presumed to have a prospective, and not retroactive, effect. *See, e.g., Wilson Ford Tractor, Inc. v. Massey-Ferguson, Inc.*, 105 N.C. App. 570, 414 S.E.2d 43 (1992). Additionally, the contract clause of the U.S. Constitution, Art. I, sec. 10, forbids the enactment of any law that impairs the obligations of existing contracts, as doing so may constitute an unconstitutional taking of property. Therefore, the General Assembly properly provided that G.S. § 113-423 applied to leases entered into on or after June 15, 2011; any attempt to retroactively limit the terms of existing leases would likely be subject to challenge as being unconstitutional. *See, e.g., Bank of Pinehurst v. Derby*, 218 N.C. 653, 12 S.E.2d 260 (1940) (invalidating retroactive application of statute imposing additional assessment on the sale of stock, as the result would be to impair the obligations of existing contracts and deny due process).

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could obviate the ten-year limitation and extend the lease.

A ten year primary term is a long term, even by industry standards, and it gives an operator ample time to establish production.

E. *Recording of Leases*

As discussed in section 2.A. *supra*, mineral rights are interests in real property. Therefore, transfers, assignments and leases of mineral rights are customarily recorded with the register of deeds of the county where the property is located. By recording a lease, or at least a memorandum of lease, a gas operator places third parties on notice, including creditors and other claimants, that the operator has leased the mineral rights of the landowner, and therefore possesses the legal right to enter the property and extract the minerals specified in the lease for the lease's duration. North Carolina law does not require that a mineral lease be recorded, although a provision of the 1945 Oil and Gas Conservation Act requires any person "holding petroleum leases" to file in the register of deeds of the county where the land is located, "a list showing the leases which have been renewed for the ensuing year."[175] A mineral lease is valid even if it is not recorded. However, because leases are valuable assets, prudent gas operators will record at least a notice or memorandum of lease in order to protect their mineral rights against third parties.

Based on statements from several officials in county register of deeds and tax offices, the Division understands that, as a general practice in North Carolina, lessees of mineral rights have recorded leases in their entirety.[176] When it entered into oil and gas leases with North Carolina landowners in 2010, Whitmar did not record the actual leases. Instead, Whitmar recorded a summary "Memorandum of Lease" for each lease, which served as notice that Whitmar had entered into a mineral lease with the landowner. Each memorandum identifies only the date of the lease; the land covered by the lease; the landowner from whom Whitmar leased the mineral rights; the minerals covered by the lease; and the duration of the lease.

When only memoranda of leases are recorded, other affected or interested parties, such as creditors, other owners or claimants to the mineral rights, tenants on the land, neighboring landowners, potential purchasers of the property or of neighboring properties, and the local community, including municipalities, are unable to determine how the lease may affect their rights and interests. For example, these affected third parties may have an interest in, among other lease terms, whether the lease specifies where wells, pipelines and other infrastructure will be located; whether the lease contains provisions for the use of water on the property; whether storage facilities will be allowed on the property; whether the lease indemnifies the landowner and others for damage to the property and/or surrounding properties; whether the property will be reclaimed or restored following operations, and, if so, how.

Further, if the landowner dies, or the lease is lost or destroyed, it may be difficult for heirs or

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[175] N.C. Gen. Stat. § 113-414.

[176] Jordan Treakle, RAFI.

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subsequent property holders to review the lease unless the lease has been recorded. As noted in section 4.D., *supra*, most of Whitmar's leases provide for an initial or primary term of ten years. If a well has not been drilled, or Whitmar is not engaged in efforts to drill, the leases allow Whitmar, at its sole option, to extend the lease for another ten years if it pays the landowner a second bonus payment. If a well is drilled at any point, then the lease automatically transfers to its "secondary" term, and the leases extend indefinitely, as long as the well is producing. Therefore, most of Whitmar's leases could be effective for twenty years, and could extend longer, if a producing well is drilled on the property.

G. *Notice of Assignment*

Leases are frequently transferred. As noted by one oil and gas treatise, "leases are considered by oil companies to be inventory, and oil companies frequently trade leases to put together 'blocks' that can be more efficiently explored and developed."[177] In addition, as with other assets, oil and gas companies may sell blocks of leases in an effort to raise capital.

Because leases are often assigned, most leases contain a clause expressly permitting the lessee (namely, the oil and gas company) to assign or transfer the lease.[178] Even if leases do not contain a provision specifically permitting assignment, courts generally treat leases as real property interests, and therefore as freely assignable, unless the lease provides otherwise.[179] When a lease is assigned or transferred, the terms of the lease do not change, and therefore the new gas company that purchased the lease is bound by the lease's terms.

Many leases require landowners to notify the lessee/gas company if the landowner sells or transfers the land, or any interest in the land. However, leases often do not require the gas company to notify the landowner if it sells or assigns the lease. The Whitmar leases do not require Whitmar to notify the lessor (namely, the landowner or, if the mineral rights have been severed, the mineral rights owner) if Whitmar sells or assigns the lease. Therefore, under the terms of many leases, the lease could be sold multiple times, but the landowner may be unable to determine who owns his or her lease at any given point in time. In some situations, this lack of information could create a serious hardship for landowners. For example, if the landowner applies for a loan, and the lender needs to contact the gas company to obtain a subordination agreement, the landowner may be unable to get a loan if the company that holds the lease cannot be identified.

Section 5 – Oil and Gas Conservation Acts and Pooling

"Pooling" is the voluntary or compelled combination of tracts for drilling and extraction purposes. Pooling laws were first enacted in the late 1920s, when Oklahoma City enacted an ordinance in 1929, and oil and gas producing states followed.[180] As explained below, pooling

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[177] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 353.
[178] Ibid. at 354.
[179] Ibid. at 353.
[180] Bruce M. Kramer & Patrick H. Martin, *The Law of Pooling and Unitization* § 3.02, n.21 (LexisNexis

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was instituted for a variety of purposes, including equity in landowners' access to royalties, conservation of resources, and efficiency of drilling operations. However, when pooling can be forced through an eminent domain type process to facilitate oil and gas development, it is understandably controversial, particularly in the context of hydraulic fracturing. A review of the background and regulation of pooling is important to the understanding of this complex issue.

A. *Common law "rule of capture"*

Virtually all states, including North Carolina, have an oil and gas conservation act, although the terms of each state's statute vary. One of the primary reasons such acts were passed was to ameliorate against the common law doctrine of the "rule of capture." Essentially, the doctrine holds, because oil and gas are fluid and move from areas of high pressure to low pressure, they are owned by the person that "captures" them, regardless of where the oil and gas was drained from.[181] A widely cited decision by the Pennsylvania Supreme Court in 1889 sets out the doctrine:

> "Water and oil, and still more strongly gas, may be classed by themselves, if the analogy be not too fanciful, as minerals *ferae naturae*. In common with animals, and unlike other minerals, they have the power and the tendency to escape without the volition of the owner.... They belong to the owner of the land, and are part of it, so long as they are on or in it, and are subject to his control; but when they escape, and go into other land, or come under another's control, the title of the former owner is gone. Possession of the land, therefore, is not necessarily possession of the gas. If an adjoining, or even a distant, owner, drills his own land, and taps your gas, so that it comes into his well and under his control, it is no longer yours, but his."[182]

The rule of capture is a rule of nonliability. As noted by a legal treatise, "[s]o long as a mineral owner conducts operations without trespassing or interfering with the rights of neighboring owners to drill to the same formation under their lands, a mineral owner will not be liable. All the oil or gas the well produces will belong to the mineral owner, even if it drains from beneath

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Matthew Bender 2011).

[181] *See, e.g., Northwest Cent. Pipeline Co. v. State Corp. Comm'n*, 489 U.S. 493, 497-98 (1989); *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W. 3d 1, 13 (Tex. 2008).

[182] *Westmoreland & Cambria Nat. Gas Co. v. DeWitt*, 18 A. 724, 725 (Pa. 1889). *See also* discussion by the following: Bailie, John K. "Pooling and Unitization in Pennsylvania," Feb. 10, 2011, accessed from http://law.psu.edu/_file/aglaw/Marcellus_Shale/Pooling_and_Unitization_in_Pennsylvania_Baillie.pdf; Sharon O. Flanery and Ryan J. Morgan, Steptoe & Johnson, PLLC, "Overview of Pooling and Unitization Affecting Appalachian Shale Development," (2011) at 5, retrieved from http://www.steptoe-johnson.com; John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 11-30, 92-93; Blackwell, Ronnie, "Forced Pooling Within the Barnett Shale: How Should the Texas Mineral Interest Pooling Act Apply to Units With Horizontal Wells?," 17 Tex. Wesleyan L. Rev. 1 (Fall 2010).

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others' lands."[183]

Hence, once a producing well has been drilled, the rule of capture motivates landowners in the area to protect their potential oil and gas assets by rushing to drill on their own land. Because oil and gas naturally exist in underground reservoirs or pools that often underlie numerous separately owned tracts, the traditional rule of capture left a landowner with two options: he could either drill on his own land to take possession of the oil and gas in the underlying pool; or, he could sit by while neighbors drilled wells that would likely drain those resources.[184]

The result of the rule of capture was a race to produce, which caused "excessive well density, substantial over-drilling, and waste, which led to undue surface waste, waste of economic resources, and waste of oil and gas reserves through premature depletion."[185] The epitome of the "race to drill" to avoid the rule of capture was illustrated at the Spindletop salt dome near Beaumont, Texas when oil was discovered in January, 1901. A wave of speculators followed, and by the end of 1901, there were 440 wells on the 125-acre hill where Spindletop sat.[186] New wells continued to be drilled as close together as possible, and by 1904, 1,000 wells had been drilled around Spindletop. However, the gross over-drilling greatly diminished the productivity and efficiency of the wells that were drilled; and only 100 of the wells produced oil at a rate of 10,000 barrels a day.[187]

In response to the effects of the rule of capture, many states enacted oil and gas conservation acts. The primary purposes of these acts are to avoid physical and economic waste of oil and gas resources. As stated by one legal commentator, whose observations are widely reflected throughout treatises, cases, and statutes:

> "Oil and gas conservation laws are concerned not only with saving resources, but with encouraging their rational development. Rational development prevents waste because it maximizes ultimate recovery. Thus, oil and gas conservation laws seek to further the public's interest in conservation and rational development. They also seek to protect owners' correlative rights by providing a structure to make it possible for each owner to get his or her fair share of the oil or gas present."[188]

B. North Carolina's Oil and Gas Conservation Act

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[183] Ibid.

[184] Sharon O. Flanery and Ryan J. Morgan, Steptoe & Johnson, PLLC, "Overview of Pooling and Unitization Affecting Appalachian Shale Development," (2011) at 5, retrieved from http://www.steptoe-johnson.com.

[185] Ibid. at 6.

[186] Ibid. at 6, citing Walter Rundell, Jr., *Early Texas Oil: A Photographic History* 1866-1936 (1977), and Richard O'Connor, *The Oil Barons: Men of Greed and Grandeur* (1971).

[187] Ibid.

[188] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 20.

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North Carolina's Oil and Gas Conservation Act, which was enacted in 1945, reflects these principles.[189] The purposes of the Act are to prevent economic waste of oil and gas caused by excessive or inefficient drilling, to protect the environment, and to ensure that landowners receive their fair share of compensation when oil or gas is extracted from their land. Specifically, the Act's declaration of policy states: "In recognition of imminent evils that can occur in the production and use and waste of natural oil and/or gas in the absence of equal or correlative rights of owners of crude oil or natural gas in a common source of supply to produce and use the same, and in the absence of adequate measures for the protection of the environment, this law is enacted for the protection of public interests against such evils by prohibiting waste and compelling ratable production and authorizing regulations for the protection of the environment."[190] DENR's regulations define "protection of correlative rights" to mean "that action or regulation by the Department which affords a reasonable opportunity to each person entitled thereto to recover or receive the oil or gas under his tract or tracts without being required to drill unnecessary wells or incur unnecessary expenses to recover such oil or gas."[191]

"Waste," which is expressly prohibited under the Act, includes "physical waste" and the following acts, among others:

a. The inefficient, excessive or improper use or dissipation of reservoir energy; and the locating, spacing, drilling, equipping, operating or producing of any oil or gas well or wells in a manner which results, or tends to result, in reducing inefficiently the quantity of oil or gas ultimately to be recovered from any pool in this State.

b. The inefficient storing of oil, and the locating, spacing, drilling, equipping, operating or producing of any oil or gas well or wells in a manner causing, or tending to cause, unnecessary or excessive surface loss or destruction of oil or gas.

c. Abuse of the correlative rights and opportunities of each owner of oil and gas in a common reservoir due to nonuniform, disproportionate, and unratable withdrawals causing undue drainage between tracts of land.

. . .

i. The escape into the open air, from a well producing both oil and gas, of gas in excess of the amount which is necessary in the efficient drilling or operation of the well.

j. Permitting gas produced from a gas well to escape into the air.

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[189] N.C. Gen. Stat. §§ 113-381, *et seq.*

[190] N.C. Gen. Stat. §§ 113-382.

[191] 15A N.C. A.C. 05D.0103(4).

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Under the Act, DENR has the authority to regulate oil and gas production, and the concomitant "duty ... to determine whether or not waste over which it has jurisdiction exists or is imminent."[192] Pursuant to waste prevention, DENR may collect data; investigate, inspect, and examine properties and records; test oil and gas wells; hold hearings; require the maintenance of records and reports; and take any other action as may be reasonably necessary to enforce the Act.[193] In particular, DENR may enact and enforce regulations to govern proper drilling and operating methods, limitation and proration of oil and gas production, spacing of wells, establishment of drilling units, and the pooling of oil and gas interests.[194]

Process for Pooling in North Carolina

In order to prevent waste and avoid the drilling of excessive wells, the Act provides that DENR may, after notice and a hearing, establish a drilling unit or units for each pool. As defined by the Act, "pool" means "an underground reservoir containing a common accumulation of crude petroleum oil or natural gas or both."[195] A "drilling unit" is that "area which can be efficiently and economically drained by one well."[196] DENR has discretion as to the size and shape of each drilling unit and may set dimensions as necessary to prevent any producer or owner within the pool from procuring "more than his just and equitable share of oil and gas."[197]

The Act defines a producer's or owner's "just and equitable share" as "that part of authorized production from the pool . . . which is substantially in the proportion that the quantity of recoverable oil and gas in the developed area of his tract . . . bears to the recoverable oil and gas in the total developed area in the pool."[198] These well spacing requirements must be established after a notice and hearing. To ameliorate against the rule of capture, among other things, the well must be drilled "approximately in the center" of the drilling unit, and DENR is required to adopt rules determining the minimum distance from separate leaseholds or pooled units and between wells producing from the same reservoir.[199]

North Carolina's Act provides for both voluntary and compulsory pooling. Pooling is simply the grouping together of tracts or interests to form a drilling or production unit in compliance with applicable spacing standards.[200] The Act states: "When two or more separately owned tracts of land are embraced within an established drilling unit, the owners thereof may agree validly to

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[192] N.C. Gen. Stat. § 113-391(a), (b).
[193] Ibid.
[194] N.C. Gen. Stat. § 113-391.
[195] N.C. Gen. Stat. § 113-389(10).
[196] 15A N.C.A.C. 05D.0103(2).
[197] N.C. Gen. Stat. § 113-392(c).
[198] N.C. Gen. Stat. § 113-392(d).
[199] N.C. Gen. Stat. § 113-392(c); 15A N.C.A.C. 05D.0106(b).
[200] Sharon O. Flanery and Ryan J. Morgan, Steptoe & Johnson, PLLC, "Overview of Pooling and Unitization Affecting Appalachian Shale Development", (2011) at 8, retrieved from http://www.steptoe-johnson.com.

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integrate their interests and to develop their lands as a drilling unit."[201] As the name indicates, voluntary pooling involves private arrangements to allow for joint development of the separately owned oils and gas interests within a spacing unit. Most oil and gas leases contain clauses allowing operators to pool separate leases together in order to form a drilling unit; and the Whitmar leases executed in North Carolina contain such a pooling clause.

If adjoining acreage is pooled together, the contractual terms of each individual lease remain in effect; pooling simply allows the operator to join adjacent leased acreage for purposes of obtaining a permit and meeting statutory spacing requirements. In some instances, landowners negotiate a community lease which constitutes a pooling of the respective individual interests. Another way to accomplish pooling is for mineral owners to execute pooling agreements that are separate from the leasing agreements.[202]

In the absence of voluntary pooling, the Act and regulations promulgated by DENR under the Act, provide that "for the prevention of waste or to avoid drilling unnecessary wells, [DENR] may order pooling of all interests."[203] DENR orders mandating integration for the purpose of establishing a drilling unit may be made only after notice and hearing, and be upon "terms and conditions that are just and reasonable, and will afford to the owner of each tract the opportunity to recover or receive his just and equitable share of the oil and gas in the pool ... [and] prevent or minimize reasonably avoidable drainage."[204] The Act further provides that the operator designated by DENR to develop and operate the unit has the right to reimbursement of the operator's "actual expenditures" incurred during the drilling operations, before paying the owner of each tract his or her ratable share of the production which is to be calculated "at the market price in the field" at the time of production. In the event there is a dispute relating to costs, DENR must determine the proper costs.[205]

C. *Pooling in other states*

The stated rationale for compulsory pooling laws is that they serve to maximize oil and gas recovery, prevent excessive waste, including the drilling of unnecessary wells, and ensure that landowners receive fair compensation for any drainage or extraction of oil or gas from their land.[206] Approximately forty states have some form of compulsory pooling law,[207] and virtually

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[201] N.C. Gen. Stat. § 113-393(a).

[202] Vaughn, Lisa, "New Facets of Old Alternatives for Unleased Mineral Interests," 16 Tex. Wesleyan L. Rev. 113 (Fall 2009). Sharon O. Flanery and Ryan J. Morgan, Steptoe & Johnson, PLLC, "Overview of Pooling and Unitization Affecting Appalachian Shale Development," (2011) at 8, retrieved from http://www.steptoe-johnson.com.

[203] N.C. Gen. Stat. § 113-393; 15A N.C.A.C. 05D.0106.

[204] N.C. Gen. Stat. § 113-393.

[205] Ibid.

[206] Bruce M. Kramer & Patrick H. Martin, *The Law of Pooling and Unitization* § 10.01 (LexisNexis Matthew Bender 2011).

[207] Marie C. Baca, "Forced Pooling: When Landowners Can't Say No to Drilling," *Pro Publica*, May 19, 2011, retrieved from www.propublica.org. (The article states that thirty-nine states have compulsory

all oil and gas producing states allow compulsory pooling.[208] With the recent growth of hydraulic fracturing, some landowners have voiced opposition to compulsory pooling, viewing it to be eminent domain for private interests, and it has become a subject of considerable controversy in some states.[209] For example, in Pennsylvania and West Virginia, existing compulsory pooling laws (which were enacted before the widespread use of hydraulic fracturing), apply to deep wells and do not apply to the Marcellus Shale, where large shale deposits have recently been discovered. Several bills have been introduced in both states to extend the scope of the states' pooling laws, but there was insufficient consensus on the terms of the bills, and they did not pass.[210] Media reports indicate that the West Virginia legislature is expected to take up the issue of pooling in the near future, but it is less clear whether the Pennsylvania legislature will do so, as Pennsylvania's Governor Tom Corbett, who has otherwise voiced strong support of drilling, has voiced opposition to forced pooling.[211]

D. Recommendations for Further Study

The Division has carefully examined North Carolina's Oil and Gas Conservation Act and regulations regarding pooling, as well as numerous legal treatises on the subject, and the laws of numerous other states. Based on this review, it is manifest that regulation of pooling and unitization is highly complex, as it involves the determination of whether "waste" exists; the proper spacing of wells; the appropriate density of wells; the appropriate allocation of production; and the appropriate allocation of costs and revenues among different classes of mineral rights owners, among other issues. These are specialized environmental and production issues specific to oil and gas extraction that are beyond the expertise of the Consumer Protection Division.

DENR Should be Allowed to Review and Provide Input

As noted herein, DENR has been granted statutory authority under the Oil and Gas Conservation Act to regulate pooling and, to that end, has promulgated regulations concerning pooling. It is the understanding of the Division that, due to the relatively short time frame for this study, DENR has not had an opportunity to evaluate -- with a focus on the process of hydraulic fracturing -- the pooling provisions of the Act, DENR's regulations, or the pooling acts

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pooling laws, but the article does not count North Carolina among those states. As observed above, North Carolina law does provide for compulsory pooling.)

[208] Bruce M. Kramer & Patrick H. Martin, *The Law of Pooling and Unitization* § 10.01 (LexisNexis Matthew Bender 2011). According to Messrs. Kramer and Martin, Kansas is the only producing state that does not have a compulsory pooling law, but Kansas does grant municipalities the authority to force pool, and the state has a field-wide compulsory integration statute, which applies to larger-scale operations.

[209] Marie C. Baca, "Forced Pooling: When Landowners Can't Say No to Drilling," *Pro Publica*, May 19, 2011, retrieved from www.propublica.org.

[210] Michael K. Bolton and Erick S. Wang, DLA Piper, LLC, "Forced pooling statutes in the Marcellus Shale," Feb. 1, 2012, retrieved from www.dlapiper.com .

[211] Ibid.

and regulations of other states, and particularly oil and gas producing states. Because DENR is the agency charged with administering the Act and with making pooling determinations under the Act, the Division recommends that DENR should be given the opportunity to consider, and, in particular, to consult with regulators in other states with developed oil and gas regulatory programs, with regard to the following: (i) whether, as part of any modernization of North Carolina's oil and gas regulatory program to regulate hydraulic fracturing, the State's pooling and unitization laws and regulations should be modified; (ii) if so, how those laws and regulations should be modified to best address the statutory goals of environmental protection, prevention of waste, and protection of correlative rights; (iii) the extent to which hydraulic fracturing creates less drainage than conventional drilling methods; (iv) to the extent less drainage is created by hydraulic fracturing, to what extent reduced drainage ameliorates against the rule of capture, and, therefore, one of the underlying rationales of compulsory pooling.

If DENR and the General Assembly conduct further review, the Division observes that some states' laws contain provisions intended to provide enhanced protections for landowners in the context of compulsory pooling. The list of various protections below is not at all comprehensive or exhaustive, but the Division recommends that DENR and the General Assembly consider them as a starting point in any efforts to enhance landowner protections in the context of pooling.

Consent of Majority or Super-Majority of Landowners to Drilling

In many states, a certain percentage of the acreage in the proposed drilling unit must agree to lease or pool their land before the state's environmental regulator or oil and gas commission will consider an application for compulsory pooling. For example, New York requires the owners of at least 60 percent of the acreage in the proposed unit to have agreed to a lease.[212] According to a legal analysis of state pooling and unitization laws, where majority or super-majority consent is required, the percentages range from 50 percent of proposed pooled interests to 75 or 80 percent.[213] This legal analysis notes that "[a] minimum operator control threshold requiring 75 percent approval on a net acreage basis ... provides substantial protection to owners of unleased tracts and smaller independent producers who may have acreage within a proposed unit."[214] Therefore, the Division recommends that DENR and the General Assembly consider adopting some type of requirement that a majority or supermajority

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[212] N.Y. Env. Conservation Law § 23-0501(2.).

[213] Sharon O. Flanery and Ryan J. Morgan, Steptoe & Johnson, PLLC, "Overview of Pooling and Unitization Affecting Appalachian Shale Development," (2011) at 51, accessed from http://www.steptoe-johnson.com . In addition, the Division observes that Section 18 of the 2004 Model Oil and Gas Conservation Act promulgated by the Interstate Oil and Gas Compact Commission requires consent by at least 60 percent of royalty owners before the regulator may issue an order for compulsory unitization. Retrieved from http://www.iogcc.state.ok.us/Websites/iogcc/docs/ModelAct-Dec2004.pdf .

[214] Sharon O. Flanery and Ryan J. Morgan, Steptoe & Johnson, PLLC, "Overview of Pooling and Unitization Affecting Appalachian Shale Development," (2011) at 51, retrieved from http://www.steptoe-johnson.com.

of landowners or interests, based on net acreage, consent to drilling before an operator is allowed to file an application for compulsory pooling.

"Fair and reasonable" Offer to Landowners Prior to Compulsory Pooling

Texas law requires an operator to demonstrate that it has made a "fair and reasonable" offer to landowners within the proposed unit before applying for a compulsory pooling order.[215] This provision "separates the Texas forced pooling statute from all other states and ... has led commentators to label [the Texas] Act as an act to encourage voluntary pooling rather than a forced pooling statute."[216] If operators are mandated to seek voluntary pooling, and to offer landowners in the affected area leases with "fair and reasonable" compensation, this requirement would likely reduce the incidence of compulsory pooling. Therefore, the Division recommends that DENR and the General Assembly review and consider this aspect of Texas law.

Require the Consent of the Surface Owner of Unleased Land for Any Operations on the Surface

Where a landowner has not agreed to a lease, but the land is included in the drilling unit under the state's compulsory pooling law, West Virginia prohibits the operator from conducting any surface operations on the property without the landowner's consent.[217] Legislation recently introduced in Pennsylvania (but which did not pass) contained a similar provision.[218] Such a provision protects landowners from surface operations on their property where they have not agreed to lease their mineral rights. As noted by one commentator, "[T]raditional standards of equity suggest that [an unleased landowner] should have some level of control over whether a horizontal well pad is located on the surface overlying unleased acreage, which was statutorily pooled."[219] North Carolina's pooling statute and regulations do not contain this protection; therefore, the Division recommends that DENR and the General Assembly adopt such a provision.

Statutory "Pugh" Clause

When gas production occurs, under all gas leases, that production serves to extend the lease indefinitely so long as production continues.[220] Therefore, where a landowner's lease is pooled with other leases to create a drilling unit, and production occurs, the lease can serve to tie up

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[215] Tex. Nat. Res. Code Ann. § 102.013.

[216] Blackwell, Ronnie, "Forced Pooling Within the Barnett Shale: How Should the Texas Mineral Interest Pooling Act Apply to Units With Horizontal Wells?" 17 Tex. Wesleyan L. Rev. 1, 7-8 (Fall 2010).

[217] W. Va. Code § 22C-8-11.

[218] Bailie, John K. "Pooling and Unitization in Pennsylvania," Feb. 10, 2011, at 11, retrieved from http://law.psu.edu/_file/aglaw/Marcellus_Shale/Pooling_and_Unitization_in_Pennsylvania_Baillie.pdf.

[219] Sharon O. Flanery and Ryan J. Morgan, Steptoe & Johnson, PLLC, "Overview of Pooling and Unitization Affecting Appalachian Shale Development," (2011) at 52, retrieved from http://www.steptoe-johnson.com.

[220] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 192-98.

the landowner's entire property, even though the drilling or production unit may only cover a portion of the landowner's land. For example, if gas development takes place on only one acre of a landowner's 100-acre leased property, the drilling would tie up the other 99 acres indefinitely but only provide the landowner with royalty compensation from the gas being extracted on one acre. As a result, many experts recommend that landowners request a "Pugh clause" (named for the attorney who first used it) in their leases in order to give landowners control over their land that is not in the drilling unit, and allow the landowner to sign a new lease with a different company.[221] Essentially, a Pugh clause provides that drilling or production on leased land that is pooled will not maintain the lease as to leased land that is not in the pooled unit. Several states, including Arkansas, Oklahoma, Mississippi, and North Dakota have enacted statutes or promulgated regulations that have the effect of a Pugh clause, by providing that production does not extend leases of lands within the production unit where there is no production.[222] Similarly, the 2004 Model Oil and Gas Conservation Act promulgated by the Interstate Oil and Gas Compact Commission contains a statutory Pugh clause.[223] The Division recommends that DENR and the General Assembly consider the adoption of a similar provision.

Section 6 – Royalties

The royalty clause is the main provision in an oil and gas lease for compensation to the landowner. If production occurs, the landowner is paid a royalty, which is usually stated in leases as a percentage of production, or the value, or proceeds of its sale, free of the costs of production.[224] Both the existence and the quantity of oil and gas that may be produced from a lease are uncertain until someone drills a well. If there is no production, the percentage royalty is worthless; if there is prolific production, the percentage royalty will be extremely valuable. Therefore, a percentage royalty is generally viewed to balance the interests of the landowner and the gas company against the inherent risks of exploration.[225]

Generally, royalty provisions in leases are construed as being free of all costs incurred in bringing about production of oil and gas, and are payable either "in kind" or "in cash." Oil is often paid "in kind" and gas is almost always payable "in cash."[226] The reason for this practice

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[221] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 254-55. Harrison, Gerald A., "Negotiating Oil and Gas Leases on Indiana Farmland." Purdue University Cooperative Extension, October, 1997. Retrieved from <http://www.extension.purdue.edu/extmedia/ec/ec-564.html>.

[222] Ark. Code Ann. § 15-73-201; Miss. Code Ann. § 53-3-111; Okla. Stat. 52 § 87.1(b); N.D. Cent. Code § 38-08-9.8.

[223] Section 10(h) of the Model Act provides: "In case of a spacing unit of 160 acres or more, no oil and gas leasehold interest outside the spacing unit involved may be held by production from the spacing unit more than ninety (90) days beyond the expiration of the primary term of the lease." Retrieved from http://www.iogcc.state.ok.us/Websites/iogcc/docs/ModelAct-Dec2004.pdf .

[224] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 278.

[225] Ibid.

[226] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 280. Kirk, Rachel M., "Variations in the Marketable-Product Rule from State to State," 60 Okla. L. Rev. 769, 771-72 (Winter

stems from the physical and economic differences between oil and gas. Oil, being a liquid, can be separated at the well site, and the royalty owner can physically receive her share. Additionally, it is generally feasible to store oil on the leased premises and sell it periodically. Gas, in contrast, is more effectively marketed in bulk, and is not as easily stored at the well as oil, making it more difficult for the royalty owner to take his share "in kind" at the wellsite. Therefore, gas royalty provisions in oil and gas leases commonly provide the lessor will receive royalty in cash.[227]

North Carolina Law

North Carolina has not been an oil and gas producing state. Therefore, not surprisingly, North Carolina has no statutes or regulations that regulate the payment of royalties on oil and gas production. The only statutory provision in North Carolina law that addresses royalties is N.C. Gen. Stat. § 113-421(c), which provides that, if a "surface owner" is the prevailing party in an action "to recover unpaid royalties, the court shall award any court costs and reasonable attorneys' fees to the surface owner or the surface owner's assignee." This provision therefore allows a unified surface owner to recover his costs and attorneys' fees if he is forced to sue a gas company for its failure to timely pay royalties, and the mineral owner prevails in the action. The Division notes, as discussed in section 2.A. *supra*, the surface owner may or may not own the mineral rights to her property; if she does not, then she would not be entitled to royalty payments. Therefore, the Division recommends that the General Assembly change the reference to "surface owner" in N.C. Gen. Stat. § 113-421(c) to "royalty owner."

States that are major oil and gas producers tend to have detailed statutes involving royalties. Royalties are intrinsic to production; thus, these statutes are closely tied to gas production. If the State proceeds with allowing shale gas extraction, then appropriate statutes regulating the payment of royalties will need to be enacted in order to provide protection to royalty owners and to establish clear rules, which will, in turn reduce uncertainty and litigation over payment of royalties. Because the Division's expertise does not extend to oil and gas production, the Division believes that this is an area that DENR and the General Assembly should review more closely if a regulatory program is adopted.

Numerous states have undertaken efforts to provide for prompt payment of royalties to mineral owners, and to provide other, related protections to mineral owners in the context of royalties. The list below is not at all a comprehensive list of items covered by oil and gas royalty statutes. Nonetheless, if the State proceeds with allowing shale gas extraction, the Division recommends that DENR and the General Assembly consider adopting laws or regulations addressing, at a minimum, the following aspects of the payment of royalties:

Minimum Royalty

By common practice for many years, the industry-wide minimum lease royalty has been 12.5%,

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[227] Ibid.

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although higher royalties have often been paid in major production areas.[228] As a result, several state statutes mandate that a minimum lease royalty of 12.5% be paid; [229] in addition, in the context of pooling statutes, numerous states require that a minimum royalty of 12.5% be paid on proceeds.[230]

Payment of Royalty on Gross Proceeds

The sale of natural gas may involve substantial costs after the gas comes out of the well. A lessee will often transport gas produced to a pipeline, to a market center, or even to an end user. In addition, natural gas often must be dehydrated, cleaned, processed, or compressed before it can be sold. These operations may be very expensive, but they may also substantially increase the value of the natural gas.[231]

Virtually all courts hold that the operator-lessee is responsible for all costs of exploration and production. This is because the lessee assumes the risk involved in developing the lease, including all costs incurred in the production of oil or gas from the leased premises. On the other hand, most courts agree that the landowner-lessor shares proportionately in costs *subsequent* to production since they are incurred after production and ordinarily increase the value of production.[232]

These principles have led to much litigation and diverse case law over when "production" has occurred for purposes of calculating royalty, and over which post-extraction costs may be deducted from the landowner-lessor's royalty. As a result, in most states, whether certain post-extraction costs – such as compression and long distance transportation – can be deducted from landowners' royalties turns on an interpretation of that state's case law, and an interpretation of the language of the lease.[233]

In an effort to provide greater certainty on this important question, and to provide greater protection to lessors, several states including Michigan, Nevada and Wyoming, have adopted statutes defining the costs of production that cannot be assessed against lessors, or, alternatively, expressly prohibiting the assessment of certain post-production costs against lessors, unless the lease explicitly provides for the deduction of such costs.[234]

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[228] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 278.

[229] 58 Pa. Stat. § 33.

[230] *See, e.g.*, Ark. Code Ann. § 15-72-305.

[231] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 294-95. Kirk, Rachel M., "Variations in the Marketable-Product Rule from State to State," 60 Okla. L. Rev. 769, 772-74 (Winter 2007).

[232] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 294-95. Kirk, Rachel M., "Variations in the Marketable-Product Rule from State to State," 60 Okla. L. Rev. 769, 771-72 (Winter 2007).

[233] Ibid.

[234] Mich. Comp. Laws § 324.61503b; Nev. Rev. Stat. § 522.115; Wyo. Stat. Ann. § 30-5-304. In addition, the Federal Oil and Gas Royalty Management Act, 30 U.S.C. §§ 1701-1758; 30 C.F.R. §§ 1201.102, -.103,

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Mandating Payment within a Certain Time Period

Numerous state statutes require royalties to be paid within a set time after the first production (the statutory range tends to be from four to six months from first production), and then monthly thereafter.[235] The benefit of requiring payment by a certain timeframe is that all parties know when royalties must be paid.

Penalty for Failure to Pay

Virtually all states with royalty payment statutes allow for the recovery of interest on past due royalties.[236] Most state statutes provide for fixed rates, from a low of 8% per annum (Mississippi) to a high of 18% per annum (Nevada, New Mexico, North Dakota, and Wyoming). Colorado, Illinois and Texas use variable rates tied to the discount rate at various federal reserve banks. Montana sets the rate as the maximum rate authorized under its legal interest statute.[237] In addition to interest, several states expressly authorize the assessment of penalties by their oil and gas regulators if royalties are not timely paid.[238]

Statement to Accompany Royalty Payment

Many oil and gas states have detailed reporting or "check stub" requirements, which must accompany payments to those receiving royalties, and typically detail, among other items, the quantity of product sold, the price received, the amount of severance taxes and other taxes levied, and the royalty owner's interest in the sale, among other items.[239] The purpose of these "check stub" statutes is to provide landowners (or royalty owners) with information detailing how their royalties were calculated so that they can determine if royalties were appropriately paid.

Division Order Should not Change the Lease Terms

A division order is a statement entered into by royalty owners and all others entitled to

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.152-.154, adopts a similar principle by requiring that royalties be paid on gross proceeds and prohibiting the deduction of certain costs.

[235] *See, e.g.*, Ark. Code Ann. § 15-74-601; Colo. Rev. Stat. § 34-60-118.5; Kan. Stat. Ann. § 55-1614; Mich. Comp. Laws § 324.61503a; Mont. Code Ann. § 82-10-103; N.M. Stat. Ann. § 70-10-3; N.D. Cent. Code § 47-16-39.1; Miss. Code Ann. § 53-3-39; 52 Okla. Stat. § 570.10; Tex. Nat. Res. Code § 91.402; Utah Code Ann. § 40-6-9; Wyo. Stat. Ann. § 30-5-301.

[236] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 305.

[237] *See, e.g.*, Ark. Code Ann. § 15-74-601; Colo. Rev. Stat. § 34-60-118.5; Kan. Stat. Ann. § 55-1614; La. Rev. Stat. § 31:212.23; Miss. Code Ann. § 53-3-39; Mont. Code Ann. § 82-10-103; N.D. Cent. Code § 47-16-39.1; N.M. Stat. Ann. § 70-10-5; 52 Okla. Stat. § 570.10; Tex. Nat. Res. Code § 91.403; Wyo. Stat. Ann. § 30-5-302.

[238] *See, e.g.*, Ark. Code Ann. § 15-74-709; Utah Code Ann. § 40-6-9.1.

[239] Ala. Code § 9-17-33; Ark. Code Ann. § 15-74-707; Colo. Rev. Stat. § 34-60-118.5; Kan. Stat. Ann. § 55-1620; La. Rev. Stat. § 31:212.31; Mont. Code Ann. § 82-10-104; N.D. Cent. Code § 38-08-06.3; Utah Code Ann. § 40-6-9.1; Wyo. Stat. Ann. § 30-5-305.

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proceeds of production sales, stipulating how moneys are to be distributed. Division orders protect purchasers of production and those who distribute proceeds by requiring those who are paid to warrant title to production transferred and indemnify those who make the payments.[240] Generally, courts have held that lessors' or landowners' royalty rights are based on the underlying lease and cannot be changed by a division order. Nonetheless, to ensure that lease royalty terms are upheld, many states have statutes barring enforcement of division-order terms that conflict with lease terms.[241]

Royalty Owner's Right to Inspect Records

A number of states expressly provide that lessors or royalty owners are entitled, upon request, to examine the production records or royalty payment records of the lessee, or to obtain copies of such records.[242] The Division notes that the Whitmar leases grant landowners the right to examine, audit, or inspect Whitmar's books, accounts, contracts, or any other records affecting the landowner's revenue for the purpose of verifying the accuracy of the reports and statements provided to the landowner.

Royalty Owners as Secured Creditors

Except in a few states, the landowner's (or lessor's) royalty interest under a lease is classified as an interest in real property. After they are taken from the ground, however, both oil and gas are personal property.[243] Recognizing this real property interest, many states have legislation intended to make those entitled to oil and gas royalties secured creditors under the Uniform Commercial Code.[244] In the event that royalties go unpaid, when royalty owners are secured creditors, rather than unsecured creditors, they have considerably enhanced rights to recover their unpaid royalties.

Assessment of Royalty on Flared Gas

In the production process, the methane (or natural gas) portion of production is much less valuable than any natural gas liquids that the gas may contain. As a result, operators often recover the natural gas liquids and flare or vent the methane. However, if the gas is flared or vented, that gas is wasted, and a landowner's income is reduced. This is particularly the case with gas in return fluids from the hydraulic fracturing process. For recovery of gas from return flows and a variety of other production processes, the EPA has concluded that the natural gas can be profitably recovered.[245] Methane is a highly potent greenhouse gas. (*See* DENR report,

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[240] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 301, 407-08.

[241] Ibid. at 301. Mich. Comp. Laws § 324.61503(b)(4); Mont. Code Ann. § 82-10-110; N.D. Cent. Code § 47-16-39.3; Tex. Nat. Res. Code § 91.402(h); Wyo. Stat. Ann. § 30-5-305(a).

[242] *See, e.g.*, Kan. Stat. Ann. § 55-1622; N.D. Cent. Code § 47-16-39.2.

[243] John S. Lowe, *Oil and Gas Law In a Nutshell*, West Nutshell Series (2009), at 280-81.

[244] Ibid. *See, e.g.*, Ark. Code Ann. § 15-74-640; Miss. Code Ann. § 53-3-41; 52 Okla. Stat. § 549.3.

[245] U.S. Environmental Protection Agency, "Recommended Technologies and Practices." Retrieved from http://www.epa.gov/gasstar/tools/recommended.html .

section 4.G. "Emission sources associated with natural gas extraction and production.") Because of environmental concerns, and to prevent undue waste caused by flaring, some states have adopted restrictions on excessive flaring by gas operators.[246] Further, some states, including North Dakota, have expressly provided that flared gas in excess of the allowable amount is subject to production taxes, and is subject to the lease and on which royalties must be paid.[247]

Data Tracking

As observed by DENR in its report (section 9, recommendation 9), it will be important to have a robust data management system in order to track the production of oil and gas activities for royalties and severance tax purposes. According to a Congressional Research Services report from 2009, it is common for states to require the metering of production, and, in some instances, states require the auditing of production.[248] The state of Pennsylvania audits production from the top 100 wells using an independent auditor, or "meter truck companies" that work for the shale gas producers. The state of New York requires that natural gas producers meter production and make that information available upon request.[249] The West Virginia Department of Environmental Protection, Office of Oil and Gas, requires an annual production report from all oil and gas producers in the state.[250]

In summary, because the Division's expertise does not extend to oil and gas production, the Division recommends that DENR and the General Assembly review this area more closely as detailed statutes will be required. In conducting this review, the Division recommends that DENR and the General Assembly consider the adoption of royalty statutes providing, at a minimum, the above protections to royalty owners.

Section 7 – Additional Comments

In this section, the Division notes several remaining items relating to landowner and consumer protection issues that have not been addressed in prior sections of the Division's report:

Setbacks

In its recommendations, DENR has observed: "Further work is needed to establish setbacks and areas where oil and gas activities should be prohibited in order to protect public health, public

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[246] For example, the Division understands that Ohio's environmental laws prohibit venting or flaring for more than 30 days. Harry Weiss.

[247] *See, e.g.*, N.D. Cent. Code § 38-08-06.4; Alaska Stat. § 43.55.020(e).

[248] Congressional Research Service, "Unconventional Gas Shales: Development, Technology, and Policy Issues," Oct. 30, 2009, at p. 30.

[249] N.Y. Energy Cons. Law, § 23-0301, -0305, Part 556.

[250] Congressional Research Service, "Unconventional Gas Shales: Development, Technology, and Policy Issues," Oct. 30, 2009, at p. 30.

safety and sensitive natural environments" and that "[s]etbacks may include provisions to [p]rotect neighbors and surface owners from safety, hazards, noise and other impacts." (DENR report, section 9, recommendation no. 4). The Division agrees with DENR's recommendation that setbacks should be established and believes that setbacks should be substantial in order to protect landowners and the public from adverse impacts of oil and gas activities.

Full Chemical Disclosure

DENR has recommended that the General Assembly require "full disclosure of hydraulic fracturing chemicals and constituents to the state regulatory agency and to local government emergency response officials.... [And that] the General Assembly ... require the industry to disclose all hydraulic fracturing chemicals and constituents – except for information protected under North Carolina law as a trade secret – to the public through the FracFocus website or a state agency website." (DENR report, section 9, recommendation no. 7). The Division agrees with DENR's recommendation and believes that it is important that there be full disclosure of chemicals used in the hydraulic fracturing process.

Public Disclosure of Violations

In at least several states, when oil and gas operators have been cited for violations, regulators post that information on a website that is accessible to the public. For example, Ohio law requires the chief of the division of oil and gas resources management to maintain a database "that is accessible to the public...[and that] list[s] each final nonappealable order issued for a material and substantial violation.... The list shall identify the violator, the date on which the violation occurred, and the date on which the violation was corrected."[251] Pennsylvania's Department of Environmental Protection posts cited violations by oil and gas operators on its website as well. The Division recommends that DENR and the General Assembly consider a adopting a similar requirement so that North Carolina landowners may determine if an operator has engaged in material or substantial violations of environmental or production laws that may impact their land or their lease.

Penalties

The Oil and Gas Conservation Act allows DENR, through the Attorney General, to obtain civil penalties against violators of up to $1,000 per day,[252] and the making of any false statement of fact in any required report is a class 2 misdemeanor.[253] A number of states have considerably higher penalties. For example, North Dakota, a significant gas production state, allows for civil penalties of up to $12,500 per day for violations of the oil and gas laws.[254] In addition, a person who engages in a willful violation of law that "pertains to the prevention or control of pollution

[251] Ohio Rev. Code Ann. § 1509.041.
[252] N.C. Gen. Stat. §§ 113-408, -410.
[253] N.C. Gen. Stat. § 113-409.
[254] N.D. Cent. Code § 38-08-16.

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or waste" is guilty of a felony.[255] Other states that impose higher penalties for violations of oil and gas laws include Virginia, West Virginia, and Wyoming.[256] Accordingly, the Division recommends that DENR and the General Assembly consider increasing the maximum penalties allowable under North Carolina law.

[255] Ibid.

[256] Va. Code Ann. § 45.1-361.8; W. Va. Code § 22-6-34; Wyo. Stat. Ann. § 30-5-119.

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NORTH CAROLINA GENERAL ASSEMBLY

ENVIRONMENTAL REVIEW COMMISSION

REPORT TO THE
2012 SESSION
of the
2011 GENERAL ASSEMBLY

APRIL 26, 20102

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TRANSMITTAL LETTER

April 26, 2012

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TO THE MEMBERS OF THE 2012 REGULAR SESSION
OF THE 2011 GENERAL ASSEMBLY

Pursuant to Article 12D of Chapter 120 of the General Statutes, the Environmental Review Commission submits its report and recommendations to the 2010 Regular Session of the 2009 General Assembly.

Respectfully submitted,

Senator David Rouzer

Representative Mitchell Gillespie

Representative Ruth Samuelson

Co-Chairs
Environmental Review Commission

STATUTORY AUTHORITY

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NORTH CAROLINA GENERAL STATUTES
ARTICLE 12D.

Environmental Review Commission.

§ 120-70.41. Commission established.

The Environmental Review Commission is hereby established.

§ 120-70.42. Membership; cochairs; vacancies; quorum.

(a) The Environmental Review Commission shall consist of six Senators appointed by the President Pro Tempore of the Senate, six Representatives appointed by the Speaker of the House of Representatives, who shall serve at the pleasure of their appointing officer, the Chair or a Cochair of the Senate Committee on Agriculture, Environment, and Natural Resources or the equivalent committee, the Chair or a Cochair of the House of Representatives Committee on Environment and Natural Resources or the equivalent committee, the Chair or a Cochair of the Senate Committee on Appropriations – Natural and Economic Resources or the equivalent committee, and the Chair or a Cochair of the House of Representatives Committee on Appropriations – Natural and Economic Resources or the equivalent committee.

(b) The President Pro Tempore of the Senate shall designate one Senator to serve as cochair and the Speaker of the House of Representatives shall designate one Representative to serve as cochair.

(c) Except as otherwise provided in this subsection, a member of the Commission shall continue to serve for so long as the member remains a member of the General Assembly and no successor has been appointed. A member of the Commission who does not seek reelection or is not reelected to the General Assembly may complete a term of service on the Commission until the day on which a new General Assembly convenes. A member of the Commission who resigns or is removed from service in the General Assembly shall be deemed to have resigned or been removed from service on the Commission. Any vacancy that occurs on the Environmental Review Commission shall be filled in the same manner as the original appointment.

(d) A quorum of the Environmental Review Commission shall consist of nine members.

§ 120-70.43. Powers and duties.

(a) The Environmental Review Commission shall have the following powers and duties:

(1) To evaluate actions of all boards, commissions, departments, and other agencies of the State and local governments as such actions relate to the environment or protection of the environment, including but not limited to an evaluation of:

a. Benefits of each program relative to costs;
b. Achievement of program goals;
c. Use of measures by which the success or failure of a program can be measured; and
d. Conformity with legislative intent;

(2) To study on a continuing basis the organization of State government as it relates to the environment or to the protection of public health and the environment, including but not limited to:
a. Improvements in administrative structure, practices, and procedures;
b. Increased integration and coordination of programs and functions;
c. Increased efficiency in budgeting and use of resources;
d. Efficient administration of licensing, permitting, and grant programs;
e. Prompt, effective response to environmental emergencies;
f. Opportunities for effective citizen participation; and
g. Broadening of career opportunities for professional staff;

(3) To make any recommendations it deems appropriate regarding the reorganization and consolidation of environmental regulatory agencies and the recodification of statutes relating to the environment, including but not limited to:
a. Ways in which agencies may operate more efficiently and economically;
b. Ways in which agencies can provide better services to the State and to the people; and
c. Instances in which functions of agencies are duplicative, overlapping, incomplete in scope or coverage, fail to accomplish legislative objectives, or for any other reason should be redefined or redistributed;

(4) To review and evaluate changes in federal law and regulations, relevant court decisions, and changes in technology affecting the environment or protection of the environment;

(5) To review existing and proposed State law and rules affecting the environment or protection of the environment and to determine whether any modification of law or rules is in the public interest;

(6) To make reports and recommendations, including draft legislation, to the General Assembly from time to time as to any matter relating to the powers and duties set out in this section; and

(7) To undertake such additional studies as it deems appropriate or as may from time to time be requested by the President Pro Tempore of the Senate, the Speaker of the House of Representatives, either house of the General Assembly, the Legislative Research Commission, the Joint Legislative Commission on Governmental Operations, the Joint Legislative Utility Review Committee, or the Joint Select Committee on Low-Level Radioactive Waste and to make such reports and

recommendations to the General Assembly regarding such studies as it deems appropriate; provided that the Environmental Review Commission shall not undertake any study which the General Assembly has assigned to another legislative commission or committee.

(b) The Environmental Review Commission may continue the study of environmental agency consolidation and reorganization. The study of environmental agency consolidation shall include, but is not limited to:

(1) Monitoring the implementation of Session Laws 1989, c. 727;

(2) Evaluation of the organization, programs, and operation of the Department of Environment and Natural Resources;

(3) Evaluation of the organization, functions, powers, and duties of the components of the Department of Environment and Natural Resources, including boards, commissions, councils, and regional offices; and

(4) Recodification of the General Statutes relating to the environment and environmental agencies.

(c) In addition to its general powers and duties, the Environmental Review Commission shall have the following powers and duties with respect to hazardous waste management:

(1) To study the current and projected need for hazardous waste treatment, storage, and disposal capacity in the State in light of anticipated generation of hazardous waste and alternatives for hazardous waste treatment and disposal;

(2) To evaluate the potential for the development of additional hazardous waste treatment, storage, and disposal capacity by the private sector;

(3) To study the necessity for and scope of hazardous waste treatment, storage, and disposal facilities which are sited, owned, or operated by the State;

(4) To review progress in securing a volunteer county to host a hazardous waste treatment facility;

(5) To study incentives and compensation for the community which hosts, either voluntarily or involuntarily, a hazardous waste treatment facility, including any additional incentives and compensation which may be needed, whether there should be differential compensation for a volunteer county, options for use of funds by local governments, distribution of compensation among local governments, and methods of providing flexibility in the development of an incentives and compensation package for a particular local community;

(6) To review progress in developing interstate agreements for the treatment, storage, and disposal of hazardous waste;

(7) To assist in the development of cooperative, comprehensive regional approach to hazardous waste treatment and disposal;

(8),(9) Repealed by Session Laws 2001-474, s. 12.

(10) To study the capacity assurance requirement under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Pub. L. No. 96-510, 94 Stat. 2767, 42 U.S.C. 9601 et seq., as amended,

and the Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 100 Stat. 1613, as amended as it relates to the continued eligibility of North Carolina for remedial actions under Superfund;

(11) To study alternatives available to the State for dealing with hazardous waste and the ramifications of those alternatives; and

(12) To receive and evaluate reports of every State agency, board, and commission which has any power or duty with respect to hazardous waste management.

§ 120-70.44. Additional powers.

The Environmental Review Commission, while in the discharge of official duties, may exercise all the powers provided for under the provisions of G.S. 120-19, and G.S. 120-19.1 through G.S. 120-19.4. The Environmental Review Commission may meet at any time upon the call of either cochairman, whether or not the General Assembly is in session. The Environmental Review Commission may meet in the Legislative Building or the Legislative Office Building upon the approval of the Legislative Services Commission.

Notwithstanding any rule or resolution to the contrary, proposed legislation to implement any recommendation of the Environmental Review Commission regarding any study the Environmental Review Commission is authorized to undertake or any report authorized or required to be made by or to the Environmental Review Commission may be introduced and considered during any session of the General Assembly.

§ 120-70.45. Compensation and expenses of members.

Members of the Environmental Review Commission shall receive subsistence and travel expenses at the rates set forth in G.S. 120-3.1.

§ 120-70.46. Staffing.

The Legislative Services Officer shall assign as staff to the Environmental Review Commission professional employees of the General Assembly, as approved by the Legislative Services Commission. Clerical staff shall be assigned to the Environmental Review Commission through the offices of the Supervisor of Clerks of the Senate and Supervisor of Clerks of the House of Representatives. The expenses of employment of clerical staff shall be borne by the Environmental Review Commission.

§ 120-70.47. Funding.

From funds available to the General Assembly, the Legislative Services Commission shall allocate monies to fund the work of the Environmental Review Commission.

COMMISSION MEMBERSHIP

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ENVIRONMENTAL REVIEW COMMISSION

2011-2012 Membership

Pursuant to G.S. 120-70.42, the Environmental Review Commission consists of six members appointed by the President Pro Tempore of the Senate, six members appointed by the Speaker of the House of Representatives, the Chair or a Cochair of the Senate Committee on Agriculture, Environment, and Natural Resources, the Chair or a Cochair of the House of Representatives Committee on Environment and Natural Resources, the Chair or a Cochair of the Senate Committee on Appropriations – Natural and Economic Resources, and the Chair or a Cochair of the House of Representatives Committee on Appropriations – Natural and Economic Resources.

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COMMISSION PROCEEDINGS

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The Environmental Review Commission met eight times during the interim between the 2011 and the 2012 Regular Sessions of the General Assembly. The Commission's Charge can be found **here**. The following is a brief summary of the Commission's proceedings. Detailed minutes and information from each Commission meeting are available in the Legislative Library and **online**.

September 28, 2011

AGENDA

9:30 a.m. Wednesday
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Mitch Gillespie, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Introduction of Members and Staff *(10 minutes)*

4. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

5. Report on the State Air Toxics Program *(45 minutes)*
   Sheila C. Holman, Director
   Division of Air Quality, Department of Environment and Natural Resources (DENR)

6. Report on the State Water Supply Plan (G.S. 143-355(n)) *(30 minutes)*
   Thomas A. Reeder, Director
   Division of Water Resources, DENR

7. Commission discussion and announcements

8. Adjourn

The first meeting of the Environmental Review Commission (ERC or Commission) was held on Wednesday September 28, 2011 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Gillespie presided.

Mr. Jeff Hudson, Commission Counsel, gave an overview of the meeting agenda, the Summaries of Substantive Environmental and Natural Resources Ratified Legislation, and the reports received by the Commission.

Representative Gillespie directed the members' attention to a handout, which contained language from House Bill 773, The Studies Act of 2011 (not enacted). Section 20 of House Bill 773 would have directed the Department of Environment and Natural Resources (DENR) to study the implementation of the State and federal rules related to emissions of toxic air pollutants.

Ms. Sheila C. Holman, Director, Division of Air Quality (DAQ), DENR, provided the Commission with a report on the State Air Toxics Program. Ms. Holman discussed the history of the State Air Toxics Program, including the annual amount of toxic air pollutants emitted by sources in North Carolina; the differences between the State and federal programs; examples of how sources of toxic air pollutants have complied with State regulations; and a comparison of the North Carolina Air Toxics Program with South Carolina's and Virginia's air toxic programs.

The Commission discussed various issues in relation to the State and federal air toxic programs, including the list of regulated toxins and the quantities, types, and measurements of toxins emitted. Several Commission members asked about the locations from which the toxins were emitted and the approximate worldwide tonnage of toxic emissions.

There was additional discussion on the effectiveness of the State program, with regard to the expense and frequency of modeling. The Commission also discussed public health statistics in comparison with other states; applicable federal and State rules; and maximum achievable control technology (MACT). Ms. Holman and Ms. Robin Smith, Assistant Secretary of Environment and Natural Resources, said they would provide the Commission with a follow-up presentation on the subject at the Commission's October meeting. Ms. Holman presented a follow-up presentation on October 12, 2011.

Mr. Thomas A. Reeder, Director, Division of Water Resources (DWR), DENR, provided an annual report on the State Water Supply Plan and other information related to water resources in the State, including the status of hydrologic modeling in the State, the development of water supplies in the State, efforts to improve water use efficiency, interbasin transfers (IBTs), the Central Coastal Plain Capacity Use Area (CCPCUA), and drought conditions.

The Commission discussed State liability if the State serves as a co-applicant on a water resource project, as authorized by legislation enacted earlier this year. Lastly, the members requested information on the Randleman Dam litigation and water rights.

October 12, 2011

AGENDA

9:00 a.m. Wednesday

Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Senator Rouzer, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Follow-up and discussion of the State Air Toxics Program *(1 hour, 30 minutes)*

   Response to requests for additional information on the State Air Toxics Program
   Robin Smith, Assistant Secretary for Environment
   Department of Environment and Natural Resources (DENR)

   Sheila C. Holman, Director
   Division of Air Quality, DENR

   Information on the science behind and health benefits of the State Air Toxics Program
   Dr. George Lucier, Past Chair
   Scientific Advisory Board, State Air Toxics Program and
   Former Associate Director of the National Toxicology Program

   Comments from the regulated community on the State Air Toxics Program
   Preston Howard, President
   Manufacturers and Chemical Industry Council of North Carolina

   Lew Ebert
   President and CEO
   North Carolina Chamber

5. Update on DENR's study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State *(10 minutes)*
   Robin Smith, Assistant Secretary for Environment
   DENR

6. Quarterly reports by the Environmental Management Commission (EMC) as to its operations, activities, programs, and progress for the period from October 2010 through September 2011 (G.S. 143B-282(b)) *(30 minutes)*
   Stephen T. Smith, Chairman
   Environmental Management Commission

7. Commission discussion and announcements

8. Adjourn

The second meeting of the Environmental Review Commission (ERC or Commission) was held on Wednesday, October 12, 2011 at 9:00 a.m. in Room 544 of the Legislative Office Building. Senator Rouzer presided.

Mr. Jeff Hudson, Commission Counsel, provided an overview of the meeting agenda, which consisted of:

i. A continuation of the discussion of the State Air Toxics Program from the September 28, 2011 meeting, including follow-up information from the Department of Environment and Natural Resources (DENR);
ii. At Representative Gillespie's request, comments from the regulated community regarding the impacts of the State Air Toxics Program;
iii. An update from DENR on the use of hydraulic fracturing or "fracking"; and
iv. A report from the Chair of the Environmental Management Commission (EMC) on the EMC's activities for the last year.

Ms. Sheila C. Holman, Director, Division of Air Quality (DAQ), DENR, and Ms. Robin Smith, Assistant Secretary for Environment, DENR, provided a follow-up report on the State Air Toxics Program.

Ms. Smith provided a basic overview of the State Air Toxics Program and explained the differences between the State and federal programs. Ms. Smith also explained how North Carolina's Air Toxic Program and pollution compares to other states.

Ms. Holman explained which toxic air pollutants are emitted in North Carolina, where the toxins were emitted, in what amounts, and how those numbers were calculated. She then explained both the federal and State approach when regulating toxic air pollutants.

According to Ms. Holman, the federal approach is to identify known emitting sources, for which technology standards could be developed. The facilities are then required to comply with the technology-based standards, which are revised as necessary.

Ms. Holman explained that the State approach is to identify toxic air pollutants of concern in North Carolina. The Secretary's Science Advisory Board on Toxic Air Pollutants studies exposure data and makes recommendations on a health-based standard. The Environmental Management Commission then adopts the health-based standard by rulemaking. Then they evaluate whether the health based standard is being met at the property boundary.

The Commission discussed the emissions covered by the State and federal programs and why the State program included 21 air toxics that are not included in the federal program. There was additional discussion on agricultural emissions, air monitoring stations, pollution generated by neighboring states, the cost of the State Air Toxics Program, and the cost of permitting.

Dr. George Lucier, Past Chair of the Science Advisory Board on Toxic Air Pollutants and Former Associate Director of the National Toxicology Program, spoke on the science behind and health benefits of the State Air Toxics Program. Dr. Lucier noted that North Carolina has the 10th highest level of toxic air emissions in the country. Dr. Lucier said that the health-based standard used by DENR was standard practice. Dr. Lucier also explained how air toxics settle in bodies of water through tributaries, stormwater runoff, streams, etc. Certain toxins are particularly harmful to public health, such as polychlorinated biphenyls (PCBs), mercury, arsenic, fluoride, and cyanide.

There was Commission discussion on reasonable and acceptable levels of risk; health-based standards in other states; economic impacts of compliance; and levels of differing air toxics in biology and ecology.

Mr. Preston Howard, President of the Manufacturers and Chemical Industry Council of North Carolina, spoke on how the State Air Toxics Program impacts his members. Mr. Howard noted that in addition to the 38 million pounds of air toxics emitted from stationary sources (power plants and factories), 61 million pounds of air toxics are emitted from mobile sources, such as vehicles. Mr. Howard advocated for the State Air Toxics Program to be reformed, especially with regard to modeling.

The Commission discussed the regulatory environment when deciding where to locate a facility and the impact of the State Air Toxics Program on North Carolina businesses.

Mr. Lew Ebert, President and Chief Executive Officer of the North Carolina Chamber, explained the importance of regulatory efficiency, consistency, and predictability to the business community in North Carolina.

Mr. Stephen Smith, Chair of the Environmental Management Commission (EMC) gave a brief overview of the EMC's quarterly reports from October 2010 through September 2011.

There was additional Commission discussion on the repeal of the combustion source exemption under the State Air Toxics Program; the "Director's Call" provision in the case of combustion sources; and the 'denial petition for rulemaking to amend the Underground Storage Tanks Secondary Containment Rules.'

Ms. Robin Smith, provided an update on DENR's study of the use of hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State.

Senator Hartsell informed the Commission that he had submitted a letter to Attorney General Roy Cooper concerning the ownership of the submerged bed of the Yadkin River at the site of the Yadkin Hydroelectric Project [during the last meeting].

November 9, 2011

AGENDA

9:00 a.m. Wednesday
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Mitch Gillespie, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Approval of the minutes for the September 28, 2011 meeting of the Commission

5. Presentation on State water resources and water law *(1 hour)*
   Richard B. Whisnant, Associate Professor of Public Law and Government
   School of Government, University of North Carolina at Chapel Hill

   William E. Holman, Director of State Policy
   Nicholas Institute for Environmental Policy Solutions, Duke University

6. Presentation on the permitting of drinking water reservoirs in North Carolina *(20 minutes)*
   Thomas A. Reeder, Director
   Division of Water Resources, Department of Environment and Natural Resources (DENR)

7. Report on the 2011 Agriculture Water Use Survey (G.S. 106-24(b)) *(30 minutes)*

Herb Vanderberry, Director
United States Department of Agriculture, National Agricultural Statistics Service North Carolina Field Office

8. Report on the transfer of the Division of Soil and Water Conservation, the Division of Forestry, the Sleep Products Program, and the Grade A Milk Inspection Program to the Department of Agriculture and Consumer Services *(20 minutes)*
   David Smith, Chief Deputy Commissioner
   Department of Agriculture and Consumer Services

9. Annual report on the status of leaking petroleum underground storage tanks and the State cleanup fund (G.S. 143-215.94M) *(30 minutes)*
   Dexter Matthews, Director
   Division of Waste Management, DENR

10. Commission discussion and announcements

11. Adjourn

The third meeting of the Environmental Review Commission (ERC or Commission) was held on Wednesday November 9, 2011 at 9:00 a.m. in Room 544 of the Legislative Office Building. Representative Gillespie presided.

Mr. Richard Whisnant, Associate Professor of Public Law and Government School of Government, University of North Carolina at Chapel Hill and Mr. William Holman, Director of State Policy, Nicholas Institute of Environmental Policy Solutions, Duke University, gave an overview of State water resources and water law.

According to Mr. Whisnant, water use in North Carolina is rising faster than population growth, while water supply is finite and possibly shrinking. Mr. Whisnant said that water conflicts will continue to rise in the State. Currently the courts are the only recourse to settle conflicts over water. Mr. Whisnant and Mr. Holman believe that a change in North Carolina law is necessary to avoid the potential for future drought conditions. Mr. Whisnant and Mr. Holman made the following recommendations:

1. Continue to develop and update hydrologic models of each river basin (per S.L. 2010-143).
2. Request reports on the Upper Neuse and Catawba-Wateree River Basins regarding future water shortages.
3. Integrate water quality and water quantity planning starting with Neuse River Plan in 2012 and Cape Fear River in 2013.
4. Not favoring one set of users over another until a better understanding of the "water budget" picture is clarified.
5. Work on design for multi-stakeholder process.
6. Preserve and increase water storage.

7. Support increased financial sustainability of public and private water utilities.
8. Increase water efficiency.

The Commission discussed acquiring water from Kerr Lake, water desalination, and existing surveys of abandoned quarries.

Mr. Tom Reeder, Director, Division of Water Resources, Department of Environment and Natural Resources (DENR), gave a presentation on the permitting of drinking water reservoirs in North Carolina. Mr. Reeder described the permitting process in detail, including permitting timelines, modeling, studies, and potential issues that would significantly extend the permit review process.

Ms. Robin Smith, Assistant Secretary for Environment, DENR, provided a historical account of the permitting process for Randleman Reservoir, from the original proposal made in 1937 through the beginning of the dam's construction in 2001.

There was Commission discussion on the Lancaster/Union project; efficiency standards vis-a-vis building code requirements; lands taken by eminent domain in 1991 for Randleman Dam; the lag time between the "taking" and when construction began in 2001; and DENR's liability when providing assistance and cooperation to local governments as required by House Bill 609 (Promote Water Supply Development/Efficiency).

Mr. Herb Vanderberry, Director, United States Department of Agriculture, National Agricultural Statistics Service North Carolina Field Office, gave a presentation on the 2011 Agricultural Water Survey. The Department of Agriculture annually collects water use data from operations using 10,000 gallons of water or more per day. The reporting is voluntary and confidential, with a 92% response rate.

Mr. David Smith, Chief Deputy Commissioner, Department of Agriculture and Consumer Services (DACS) reported on the transfer of several divisions and programs into DACS, including the Division of Soil and Water Conservation; the Division of Forestry; the Sleep Products Program; and the Grade A Milk Inspection Program. Mr. Smith reported that the transfers were the largest transfer of assets and employees in the history of the State. Mr. Smith noted that the Office of State Budget and Management is working on guidelines for future transfers.

Mr. Dexter Matthews, Director, Division of Waste Management, DENR, gave a presentation on the annual report on the status of leaking petroleum underground storage tanks and the State cleanup program. Mr. Matthews discussed the status of funds available to businesses and homeowners; third party claims; funding for the program; and recommendations for the future.

December 14, 2011

AGENDA

8:30 a.m. Wednesday

Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Senator David Rouzer, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Approval of the minutes for the October 12, 2011 meeting of the Commission

5. Adoption of the Commission budget

6. Parks and Conservation Matters *(1 hour 30 minutes)*

   a. Annual report on the Parks and Recreation Trust Fund, Fiscal Year 2010-2011 (G.S. 113-44.15(c)) *(30 minutes)*
      Lewis R. Ledford, Director
      Division of Parks and Recreation
      Department of Environment and Natural Resources (DENR)

   b. Annual report on awards from the North Carolina Natural Heritage Trust Fund, Fiscal Year 2010-2011 (G.S. 113-77.9(e)) *(15 minutes)*
      Lisa D. Riegel, Executive Director
      North Carolina Natural Heritage Trust Fund, DENR

   c. Annual report on the implementation of the Clean Water Management Trust Fund (G.S. 113A-257) *(20 minutes)*
      Richard E. Rogers, Jr., Executive Director
      Clean Water Management Trust Fund

   d. Annual report on the activities of the North Carolina Development and Farmland Preservation Trust Fund Committee (G.S. 106-744(i)) *(15 minutes)*
      D. Dewitt Hardee, Environmental Program Manager
      Department of Agriculture and Consumer Services

e. Update on Land for Tomorrow *(10 minutes)*
Tom Cors, Director of Government Relations
The Nature Conservancy, North Carolina Chapter

7. Presentation on the use of vegetative buffers for the protection of water quality *(30 minutes)*
Coleen H. Sullins, Director
Division of Water Quality, DENR

8. Presentation on the use of ecological flow in hydrologic modeling *(15 minutes)*
Thomas A. Reeder, Director
Division of Water Resources, DENR

9. Commission discussion and announcements

10. Adjourn

The fourth meeting of the Environmental Review Commission (ERC or Commission) was held on Wednesday December 14, 2011 at 9:00 a.m. in Room 544 of the Legislative Office Building. Senator Rouzer presided.

Mr. Jeff Hudson, Commission Counsel provided an overview of the meeting agenda and the Commission's budget.

Mr. Lewis Leford, Director, Division of Parks and Recreation, Department of Environment and Natural Resources (DENR), gave a presentation on the 2010-2011 Parks and Recreation Trust Fund Annual Report. Mr. Ledford discussed how and why the trust fund was established; operation funding and funding rankings; grant opportunities and geographic distribution; certificates of participation (COPS) repayment; park maintenance; extension of water and sewer service through Pilot Mountain State Park; and private and public fees.

Ms. Lisa D. Riegel, Executive Director, North Carolina Natural Heritage Trust Fund, DENR, gave a presentation on the awards from the 2010-2011 North Carolina Natural Heritage Trust Fund. Ms. Riegel explained the Natural Heritage Trust Fund's mission, which is to protect natural and cultural heritage lands. Ms. Riegel also discussed protective easements; funding for the trust fund; projects through COPS; land acquisition costs; wastewater matching funds; and the diversity of applicants.

Mr. Richard E. Rogers, Jr., Executive Director, Clean Water Management Trust Fund, gave a presentation on the Clean Water Management Trust Fund Annual Report. Mr. Rogers discussed how and why the trust fund was established and the purpose of the trust fund. According to Mr. Rogers, the trust fund has allocated $970 million for wastewater infrastructure; restoration/stormwater; land acquisition/conservation easements; riparian buffers; and greenways. Mr. Rogers also discussed changes made to the trust fund by House Bill 609 (Promote Water Supply Development/Efficiency).

Mr. D. Dewitt Hardee, Environmental Program Manager, Department of Agriculture and Consumer Services (DACS), gave a presentation on the North Carolina Development and Farmland Preservation Trust Fund Committee Annual Report. Mr. Hardee discussed the grant's priorities, including conservation easements (permanent easements), agricultural agreements (term easements), and sustainable and viable agriculture programs. Mr. Hardee also explained the definition of a voluntary agricultural district.

Mr. Tom Cors, Director of Government Relations, The Nature Conservancy, North Carolina Chapter, gave a presentation on the Land for Tomorrow. Mr. Cors discussed how the various trust funds complement one another.

Ms. Coleen H. Sullins, Director, Division of Water Quality, DENR, gave a presentation on the use of vegetative buffers for the protection of water quality. Ms. Sullins explained the effects of certain nutrients and other effects on water quality, including phosphorus, pesticides, heavy metals, soil types, plant and tree types, erosion, boat ramps and variance, and wet weather impacts. Ms. Sullins explained the benefits of vegetative buffers on water quality, such as removal of pathogens. Ms. Sullins also discussed other possible studies of areas of the State outside of the Neuse River Basin and in other areas of the country.

Mr. Thomas A. Reeder, Director, Division of Water Resources, DENR, gave a presentation on the use of ecological flows in hydrologic modeling. Mr. Reeder explained that ecological flows are needed to maintain in-stream uses, such as habitats (wetlands), recreation, aquatic life, wastewater assimilation, and drainage. Ecological flows are also needed for out-stream uses such as agriculture, thermoelectric energy, water supply, and hydropower. Mr. Reeder described the needs for ecological flows and how North Carolina and other states handle ecological flows.

There was Commission discussion on how many years it takes to make a recommendation on ecological flow; how to protect the flow that is in place today; invasive species and plants; the definition of 7Q10 (seven-day, consecutive low-flow with a ten year return frequency); coastal interbasin transfer (IBT) problems; and Alcoa diverting water from North Carolina for use in Tennessee.

January 26, 2012

AGENDA

9:00 a.m. Thursday
Room 643 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Ruth Samuelson, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*

Senator David Rouzer
Representative Mitch Gillespie
Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
Jeff Hudson, Commission Counsel

4. Approval of the minutes for the November 9, 2011 meeting of the Commission

5. Solid Waste Management *(50 minutes)*

Overview of the Division of Waste Management (DWM) of the Department of Environment and Natural Resources (DENR) *(20 minutes)*
Dexter Matthews, Director
DWM, DENR

Presentation of the findings of the annual solid waste management report (G.S. 130A-309.12(c), G.S. 130A-309.14, G.S. 130A-309.06(c)(6), G.S. 130A-309.06(c)(8), G.S. 130A-309.06(c)(9), G.S. 130A-309.06(c)(10), G.S. 130A-309.06(c)(11), G.S. 130A-309.06(c)(12), G.S. 130A-309.06(c)(14), G.S. 130A-309.63(e), G.S. 130A-309.85, G.S. 130A-309.140, G.S. 136-28.8(g)). *(15 minutes)*
Michael Scott, Chief
Solid Waste Section, DWM, DENR

Presentation on the status of recycling and recycling markets in North Carolina *(15 minutes)*
Scott B. Mouw, Chief
Community and Business Assistance Section
Division of Environmental Assistance and Outreach, DENR

6. Annual report on the Inactive Hazardous Sites Program (G.S. 130A-310.10) *(15 minutes)*
Charlotte Jesneck, Head
Inactive Hazardous Sites Branch, Superfund Section
DWM, DENR

7. Annual report on the effectiveness of the Brownfields Property Reuse Act (G.S. 130A-310.40) *(15 minutes)*
Bruce Nicholson, Brownfields Program Manager
DWM, DENR

8. Annual report on the Dry-Cleaning Solvent Cleanup Act of 1997 (G.S. 143-215.104U) *(10 minutes)*
Pete Doorn, Supervisor
Special Remediation Branch, Superfund Section

DWM, DENR

9. Commission discussion and announcements

10. Adjourn

The fifth meeting of the Environmental Review Commission (ERC) was held on Thursday January 25, 2012 at 9:00 a.m. in Room 643 of the Legislative Office Building. Representative Samuelson presided.

Mr. Jeff Hudson, Commission Counsel, provided an overview of the meeting agenda.

Mr. Dexter Matthews, Director, Division of Waste Management (DWM), Department of Environment and Natural Resources (DENR), gave an overview of DWM and the Division's budget. Mr. Matthews explained DWM's mission within DENR and described the Solid Waste Section, Hazardous Waste Section, Superfund Section, Underground Storage Tank Section, and the Brownfields Program.

The Commission discussed military base releases; abandoned landfills and possible methane capture; status of the Superfund; and leaking underground storage tanks and the viability of the Leaking Underground Storage Tank Trust Fund.

Mr. Michael Scott, Chief, Solid Waste Section, DWM, DENR, gave a presentation on the Solid Waste Management Report Annual Report. Mr. Scott explained the types of waste regulated by the Solid Waste Section, including municipal solid waste; industrial waste; construction and demolition waste; land-clearing waste; scrap tires; medical waste; compost; septage; and electronics. Mr. Scott also discussed the North Carolina Solid Waste Disposal 20-Year Forecast.

The Commission discussed scrap tires and disposal fees, leaking from unlined landfills, percentage of recycling, study on capacity of exports, other state's capacity, and portable toilets and septage volume.

Mr. Scott B. Mouw, Chief of the Community and Business Assistance Section of the Division of Environmental Assistance and Outreach of DENR, gave a presentation on the status of recycling and recycling markets in North Carolina. Mr. Mouw discussed recycling trends in North Carolina, landfill disposal bans, recovery of recyclable products, local government collection, and job and business growth.

Ms. Charlotte Jesneck, Head, Inactive Hazardous Sites Branch, Superfund Section of DWM, DENR, gave a presentation on the Inactive Hazardous Sites Program Annual Report. Ms. Jesneck discussed the federal Superfund program, the Inactive Hazardous Sites Cleanup Fund, the number of inactive hazardous waste sites, and funding cuts. Ms. Jesneck noted that of the 3,044 inactive hazardous sites cataloged, 452 have been closed and require no further action.

Mr. Bruce Nicholson, Brownfields Program Manager of DWM of DENR, gave a presentation on the Brownfields Property Reuse Act Annual Report. Mr. Nicholson explained the Brownfields Property Reuse Act of 1997 and the roles of the federal and State programs. Mr. Nicholson noted that 296 acres were redeveloped during 2011.

The Commission discussed chemical disposal and their types, the Brownfield's agreement in Baden, North Carolina; and property tax incentives.

Mr. Pete Doorn, Supervisor, Special Remediation Branch, Superfund Section of DWM, DENR, gave a presentation on the Dry-Cleaning Solvent Cleanup Act of 1997 Annual Report. Mr. Doorn explained the history and purpose of the fund and why a cleanup program was needed. Mr. Doorn noted that there are 705 active dry-cleaners, 2000 active and abandoned dry-cleaners, and 1,500 contaminated dry-cleaning sites in North Carolina. Seventy-Five percent of the dry-cleaners have contamination. Mr. Doorn explained how the fund is funded and the sales tax directed to the fund.

February 23, 2012

AGENDA

9:00 a.m. Thursday
Room 643 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Ruth Samuelson, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Discussion of the State Air Toxics Program *(20 minutes)*
   Representative Mitch Gillespie

   Jeff Hudson, Commission Counsel

4. Report on the implementation and application of the Neuse and Tar-Pamlico Riparian Buffer Rules *(30 minutes)*
   Chuck Wakild, Director
   Division of Water Quality, Department of Environment and Natural Resources (DENR)

5. Report on results of customer surveys and listening sessions conducted by the Department of Environment and Natural Resources during the fall of 2011 *(30 minutes)*
   Edythe McKinney, Director

Division of Environmental Assistance and Outreach, DENR

6. Commission discussion and announcements

7. Adjourn

The sixth meeting of the Environmental Review Commission (ERC) was held on Thursday February 23, 2012 at 9:00 a.m. in Room 643 of the Legislative Office Building. Representative Samuelson presided.

Representative Gillespie gave a brief introduction on the State Air Toxics Program draft legislation. Ms. Sheila Holman, Director, Division of Air Quality (DAQ), Department of Environment and Natural Resources (DENR), was recognized to discuss the State Air Toxics Program. Ms. Holman said that there would be continual monitoring of those units not subject to federal standards. She reiterated that DAQ will consider everything when reviewing air permit applications.

There was Commission discussion on the opportunity for public comments with regard to public health. Mr. Jeff Hudson, Commission Counsel, said that the bill would allow a "Director's Call" to be based upon epidemiological (or public health) information.

The Commission discussed had other states regulate air toxics and how they've changed their protocol. Ms. Holman said that DAQ can provide detailed information on both Virginia and South Carolina and other states as well.

Mr. Chuck Wakild, Director, Division of Water Quality (DWQ), (DENR), presented the report on the implementation and application of the Neuse and Tar-Pamlico Riparian Buffer Rules.

The Commission discussed the removal of riparian buffers and how that would increase the burden on other nutrient sources. Mr. Wakild said that the removal of such buffers would add an additional burden of 30% on all sources to the rivers, which would require the other sources to reduce even more. Mr. Wakild continued by explaining the purpose of buffers and the definition of buffer mitigation. The Commission discussed objections to buffers, allowances made within the buffers, and restrictions placed on the buffers.

There was Commission discussion on the contribution of nitrogen from wildlife and stormwater. Mr. Wakild explained how trees are an essential component to buffers. Tree root systems pull nitrogen out of the water and into the trees.

Ms. Edythe McKinney, Director, Division of Environmental Assistance and Outreach, DENR, presented a report on the results of customer surveys and listening sessions conducted by DENR during the fall of 2011. Ms. McKinney said that out of 200 respondents, three out of five respondents gave DENR a score of five on a 5-point scale.

The Commission discussed how the respondents were chosen, invited, and how the survey was publicized. Ms. McKinney said that the listening sessions were publicized and announced via email and press release. Ms. McKinney noted that DENR wanted to limit the listening sessions to 25 to 35 people.

There was additional Commission discussion on who was surveyed and from what categories of business. Some Commission members were concerned that some smaller facilities would feel uncomfortable speaking with DENR candidly, as DENR is the regulating agency.

March 22, 2012

AGENDA

9:30 a.m. Thursday
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Senator Rouzer, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Approval of the minutes for the December 14, 2011 meeting of the Commission

4. Quarterly report by the Environmental Management Commission (EMC) as to its operations, activities, programs, and progress for the period from October 1, 2011 through December 31, 2011 (G.S. 143B-282(b)) *(30 minutes)*
   Stephen T. Smith, Chairman
   Environmental Management Commission

5. Discussion of the State Air Toxics Program and legislative proposals to amend the Program *(1 hour, 40 minutes)*
   Representative Mitch Gillespie *(5 minutes)*

   Jeff Hudson, Commission Counsel *(5 minutes)*

   Presentation on potential implementation of legislative proposals to amend the State Air Toxics Program *(30 minutes)*
   Sheila C. Holman, Director
   Division of Air Quality, Department of Environment and Natural Resources (DENR)
   Comments from the environmental community on the State Air Toxics Program and legislative proposals to amend the Program *(30 minutes)*
   David T. Tayloe, Jr., M.D.

Past-President, American Academy of Pediatrics

Dan Conrad, Legislative Counsel
North Carolina Conservation Network

Comments from the regulated community on the State Air Toxics Program and legislative proposals to amend the Program *(30 minutes)*
Preston Howard, President
Manufacturers and Chemical Industry Council of North Carolina

6. Report on the study of the cost of assessing and remediating inactive hazardous substance or waste disposal sites for which there is no financially viable responsible party (Section 7 of S.L. 2011-186/HB 45), and implementation of S.L. 2011-186/HB 45 ("Accelerate Cleanup of Industrial Properties" (risk-based remediation)) *(30 minutes)*
Charlotte Jesneck, Head
Inactive Hazardous Sites Branch, Superfund Section
DWM, DENR

7. Update on DENR's study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State *(30 minutes)*
Robin Smith, Assistant Secretary for Environment
DENR

8. Commission discussion and announcements

9. Adjourn

The seventh meeting of the Environmental Review Commission (ERC) was held on Thursday March 22, 2012 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Samuelson presided.

Mr. Stephen T. Smith, Chairman, Environmental Management Commission (EMC), presented the quarterly report by EMC on its operations, activities, programs, and progress for the period from October 1, 2011 through December 31, 2011.

Mr. Smith discussed the contents of the EMC's quarterly report, including nutrient loading, chlorophyll-A water quality standards, water quality standards for metals, buffer mitigation rules, and basin wide water allocation in Jordan Lake.

The Commission discussed controlled forest burning and whether those activities were exempt from the open burning setback distances. Mr. Smith discussed the EMC's recent open burning resolution, which asked the General Assembly to reconsider it's decision on open burning with regard to setbacks. Mr. Smith continued that the EMC was

concerned that the change to the open burning requirements would exasperate health problems in the most vulnerable populations, especially the young and the elderly.

There was Commission discussion on the evidence of problems associated with changes in the open burning rules. Mr. Smith said that there is a substantial amount of data showing that proximity to open burning has a direct negative impact on the elderly and young children. Mr. Smith said that the data is directly from the medical community.

Representative Gillespie gave an introduction on the air toxics draft legislation. Representative Gillespie said that he took some suggestions from the environmental community. Representative Gillespie noted that the bill draft will be revised before the start of the Legislative Session.

Sheila Holman, Director of DAQ, DENR, explained that the federal program, administered by the United States Environmental Protection Agency (U.S. EPA), is a technology-based program for which technology standards are developed. According to Ms. Holman, those technology standards are fairly stringent and have resulted in emission reductions. The U.S. EPA is required evaluate these standards every eight years.

Ms. Holman described how the State Air Toxics Program is currently implemented and how it would be implemented under the new legislation. Ms. Holman said the legislation still provides DENR the authority to act when a public health risk is found and would require DAQ to review the rules for public health and report back to the Commission in November 2012.

There was Commission discussion on examples of other states air toxic programs. Mr. Holman responded that both South Carolina and Virginia have had similar type exemptions. South Carolina's exemption covers pollutants under the federal standard. Both states have the ability to make a Director's Call for public health.

The Commission discussed the bill draft's support from other branches of government, including the Governor's office. Ms. Robin Smith, Assistant Secretary of Environment and Natural Resources, said that the Governor was supportive of a proposal that strongly protects public health.

Dr. David T. Tayloe, Jr., M.D., Past-President, American Academy of Pediatrics, gave a presentation on potential impacts of the proposed legislation on respiratory disease resulting from exposure to air toxics. Dr. Tayloe said that the State program helps protect children and the elderly from respiratory disease. According to Dr. Tayloe, in 2003, North Carolina released 34 million pounds of toxic cancer causing carcinogens, currently covered under State program. The State Air Toxics Program ensures that facilities close to citizens (hot spots) are covered and regulates 21 toxins not covered by federal program.

Mr. Dan Conrad, Legislative Counsel, North Carolina Conservation Network, spoke on behalf of Environment North Carolina, the Sierra Club, and the Southern

Environmental Law Center. Mr. Conrad noted that numerous studies have shown the benefits of regulation to the economy and that regulation has minimal effects on industry's effectiveness. Mr. Conrad said that businesses choose to locate here because of North Carolina's high quality of life.

Mr. Conrad also expressed concern over indemnification; reduction of modeling requirements; shifting the program's emphasis from preventative to retroactive; industrial sites near schools; challenges to the "Director's Call" (due to Senate Bill 781 Regulatory Reform Act of 2011, S.L. 2011-398); and the proper funding of DENR.

Mr. Preston Howard, President, Manufacturers and Chemical Industry Council of North Carolina, presented comments from the regulated community on the State Air Toxics Program and the legislative proposal. Mr. Howard said that North Carolina is currently at a distinct disadvantage, as other states in the southeast have already implemented similar revisions to their air toxics programs. According to Mr. Howard, there are duplicative processes within the State Air Toxics Program that can be removed. Since 2000, the level of air toxics emissions in the State has declined by 70%. The reduction coincides with implementation of federal MACT program. The manufacturing community does not want the State program eliminated, but wants it to be more consistent. Health protections can be provided for with the "Director's Call."

Ms. Charlotte Jesneck, Head, Inactive Hazardous Sites Branch, Superfund Section, Division of Waste Management (DWM), DENR, presented a report on the study of the cost of assessing and remediating inactive hazardous substance or waste disposal sites for which there is no financially viable responsible party and the implementation of S.L. 2011-186/HB 45 (Accelerate Cleanup of Industrial Properties).

Ms. Jesneck gave an update on the status and an overview of the orphaned sites under the Inactive Hazardous Sites Response Act. According to Ms. Jesneck it's difficult to determine responsibility, as businesses were not required to keep records prior to the 1980s.

The Commission discussed sites with land use restrictions and standards, treating underground storage tank leaks with injectant, property owner notification procedures and instructions, program funding, and liens on contaminated property.

There was Commission discussion on the 450 sites with a "no further action" status. Ms. Jesneck said the list is publicly available and published on the DENR website.

Ms. Robin Smith, Assistant Secretary of Environment, DENR, provided an update on DENR's study of the use of directional and horizontal drilling and hydraulic fracturing or "fracking" for the purpose of oil and gas exploration in the State.

Ms. Smith said that current data is limited to two gas wells in Lee County. As such, this data may not be representative of the entire Sanford Sub-basin, let alone the entire State of North Carolina. Ms. Smith indicated that DENR is still researching the fracking

impact on communities, as the oil and gas industry can impact infrastructure. Currently, DENR is relying on observed impacts in other states.

Ms. Smith noted that there were a number of areas identified for further study, including groundwater study and the separation between groundwater and gas and oil wells. Ms. Smith discussed the studies recommendations, which included the following:

1. Collect pre-drilling baseline data on resource quality.
2. Water management.
3. Enhance existing oil and gas well construction standards to address the additional pressures of hydraulic fracturing and horizontal drilling.
4. Develop setback requirements and identify areas where oil and gas activities should be prohibited.
5. Develop a state stormwater regulatory program for oil and gas drilling sites.
6. Develop specific standards for management of oil and gas wastes.
7. Require:
    - Full disclosure of hydraulic fracturing chemicals and constituents to regulatory agencies, and
    - Public disclosure of hydraulic fracturing chemicals, except for trade secrets, through FracFocus or state agency website.
8. Prohibit the use of diesel fuel in hydraulic fracturing fluids.
9. Develop a robust data management system to:
    - Include GIS capabilities.
    - Store baseline water and air quality data.
    - Track production for royalties / severance tax.
    - Facilitate public disclosure of data.
    - Provide electronic permitting to the industry.
    - Enable effective permitting, inspection and enforcement.
10. Ensure state agencies, local first responders and industry are prepared to respond to a well blowout, chemical spill or other emergency.
11. Develop a modern oil and gas regulatory program while preventing physical and economic waste of oil and gas resources
12. Keep environmental permitting in DENR where it will benefit from the expertise of state geological staff and the ability to coordinate air, land and water quality permitting.
13. Develop a coordinated permitting process.
14. Address the distribution of revenues from oil and gas excise taxes and fees.
15. Identify a source of funding for repair of roads damaged by truck traffic and heavy equipment.
16. Clarify the extent of local government regulatory authority over oil and gas activities.
17. Complete additional research on impacts to local governments and local infrastructure.
18. Complete additional research on potential economic impacts.

April 26, 2012

The eighth meeting of the Environmental Review Commission was held on April 26, 2012 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Gillespie presided.

LEGISLATIVE PROPOSALS

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GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011

DRAFT

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BILL DRAFT 2011-SBz-25 [v.21] (11/28)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
4/24/2012 1:04:06 PM

Short Title: State Air Toxics Program Reforms. (Public)

Sponsors: .

Referred to:

A BILL TO BE ENTITLED

AN ACT TO EXEMPT FROM STATE AIR TOXICS EMISSIONS CONTROLS THOSE SOURCES OF EMISSIONS THAT ARE SUBJECT TO CERTAIN FEDERAL EMISSIONS REQUIREMENTS, TO DIRECT THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES TO REQUIRE PERMIT CONDITIONS THAT ELIMINATE UNACCEPTABLE RISKS TO HUMAN HEALTH, TO DIRECT THE DIVISION OF AIR QUALITY TO REVIEW THE STATE AIR TOXICS PROGRAM, AND TO REQUIRE REPORTS ON THE IMPLEMENTATION OF THIS ACT, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 143-215.107(a) reads as rewritten:

"(a) Duty to Adopt Plans, Standards, etc. – The Commission is hereby directed and empowered, as rapidly as possible within the limits of funds and facilities available to it, and subject to the procedural requirements of this Article and Article 21:

...

(5) To develop and adopt emission control standards as in the judgment of the Commission may be necessary to prohibit, abate, or control air pollution commensurate with established air quality standards. ~~This subdivision does not apply to that portion of the National Emission Standards for Hazardous Air Pollutants for asbestos that governs demolition and renovation as set out in 40 C.F.R. § 61.141, 61.145, 61.150, and 61.154 (1 July 1993 edition).~~ The Department shall implement rules adopted pursuant to this subsection as follows:

a. Except as provided in sub-subdivision b. of this subdivision, rules adopted pursuant to this subdivision that control emissions of toxic air pollutants shall not apply to an air emission source that is any of the following:

1. Subject to an applicable requirement under 40 C.F.R. Parts 61 (as amended).
2. An affected source under 40 C.F.R. Parts 63 (as amended).

3. Subject to a case-by-case maximum achievable control technology (MACT) permit requirement issued by the Department pursuant to 42 U.S.C. § 7412(j) (as amended).

b. Upon receipt of a permit application for a new source or facility, or for the modification of an existing source or facility, that would result in an increase in the emission of toxic air pollutants, the Department shall review the application to determine if the emission of toxic air pollutants from the source or facility would present an unacceptable risk to human health. Upon making a written finding that a source or facility presents or would present an unacceptable risk to human health, the Department shall require the owner or operator of the source or facility to submit a permit application for any or all emissions of toxic air pollutants from the facility that eliminates the unacceptable risk to human health. The written finding may be based on modeling, epidemiological studies, actual monitoring data, or other information that indicates an unacceptable health risk. When the Department requires the owner or operator of a source or facility to submit a permit application pursuant to this sub-subdivision, the Department shall report to the Chairs of the Environmental Review Commission on the circumstances surrounding the permit requirement, including a copy of the written finding.

...."

SECTION 2. The Environmental Management Commission shall amend its rules adopted pursuant to G.S. 143-215.107(a) so that they are consistent with the provisions of Section 1 of this act.

SECTION 3. The Division of Air Quality of the Department of Environment and Natural Resources shall review toxic air pollutant rules adopted pursuant to G.S. 143-215.107(a) and the implementation of those rules to determine if changes could be made to the rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining protection of public health. The Division shall conduct this review in consultation with interested parties. The Division shall report the results of its review, including recommendations, if any, to the Environmental Review Commission no later than December 1, 2012.

SECTION 4. The Division of Air Quality in the Department of Environment and Natural Resources shall report on the implementation of this act to the Environmental Review Commission no later than December 1 for the years 2012, 2013, and 2014. The report shall include an analysis of air toxic emissions changes and a summary of results of the Division's analysis of air quality impacts.

SECTION 5. This act is effective when it becomes law.

#12

DRAFT

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011

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BILL DRAFT 2011-SBz-32 [v.3] (03/15)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
4/23/2012 3:09:08 PM

Short Title: Protect DENR from Co-Applicant Liability. (Public)

Sponsors: .

Referred to:

A BILL TO BE ENTITLED

AN ACT TO PROTECT THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES AND THE STATE FROM POTENTIAL LIABILITY ASSOCIATED WITH BECOMING A CO-APPLICANT WITH A REGIONAL WATER SUPPLY SYSTEM ON THE FEDERAL APPROVALS NEEDED FOR THE ESTABLISHMENT OR EXPANSION OF A WATER SUPPLY RESERVOIR OR OTHER WATER SUPPLY RESOURCE, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 143-355.7(e) reads as rewritten:

"(e) When the Department has identified the most practicable alternative, a regional water supply system may request that the Department become a co-applicant for all required federal approvals for the alternative identified by the Department. The Department may become a co-applicant when all of the following conditions are met:

(1) The regional water supply system has acquired or will acquire the property necessary for construction of the water supply reservoir or other water supply resource.

(2) The local water supply plan shows that the regional water supply system has implemented appropriate conservation measures similar in effect to the measures in comparably sized North Carolina regional water supply systems.

(3) The regional water supply system has developed and is implementing measures to replace existing leaking infrastructure that is similar in effect to the measures being implemented by comparably sized North Carolina regional water systems.

(4) The regional water supply system has entered into a contractual agreement with the Department to pay the expenses incurred by the Department as a co-applicant for the project approval.

(5) The regional water supply system has entered into a contractual agreement with the Department to indemnify, defend, and hold the Department and the State, its officers, employees, agents and assigns harmless from any liability or other costs incurred related to (i) personal injury or injury to real or personal property of any kind, accruing or resulting to any other person or entity in connection with any federal approvals, arising out of the ordinary

negligence, willful, wanton, or gross negligence, intentional acts or omissions or unlawful conduct of the regional water supply, its officers, employees, agents, assigns, or subcontractors, and (ii) any violation or alleged violation of the federal approval or other law or regulation related to federal approval, whether or not caused by the regional water supply. The obligations of the regional water system under this subdivision shall include all fees, costs, penalties, fines, judgments, orders, and other obligations to which the State may be subject or that the State may incur."

SECTION 2. This act is effective when it becomes law.

#13

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011

DRAFT

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BILL DRAFT 2011-TFz-3 [v.10] (09/26)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
4/24/2012 11:22:43 AM

Short Title: Environmental Technical Corrections 2012. (Public)

Sponsors: .

Referred to:

A BILL TO BE ENTITLED

AN ACT TO MAKE CLARIFYING, CONFORMING, AND TECHNICAL AMENDMENTS TO VARIOUS LAWS RELATED TO ENVIRONMENT AND NATURAL RESOURCES, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 113-182.1(e) reads as rewritten:

"(e) The Secretary of Environment and Natural Resources shall monitor progress in the development and adoption of Fishery Management Plans in relation to the Schedule for development and adoption of the plans established by the Marine Fisheries Commission. The Secretary of Environment and Natural Resources shall report to the Joint Legislative Commission on Governmental Operations on progress in developing and implementing the Fishery Management Plans on or before 1 September of each year. The Secretary of Environment and Natural Resources shall report to the ~~Joint Legislative Commission on Seafood and Aquaculture~~ Joint Legislative Commission on Governmental Operations within 30 days of the completion or substantial revision of each proposed Fishery Management Plan. The Joint Legislative Commission on Governmental Operations shall review each proposed Fishery Management Plan within 30 days of the date the proposed Plan is submitted by the Secretary. The Joint Legislative Commission on Governmental Operations may submit comments and recommendations on the proposed Plan to the Secretary within 30 days of the date the proposed Plan is submitted by the Secretary."

SECTION 2.(a) G.S. 113A-151.1 is amended to add a new subsection to read:

"**§ 113A-115.1. Limitations on erosion control structures.**

...

(i) No later than September 1 of each year, the Commission shall report to the Environmental Review Commission on the implementation of this section. The report shall provide a detailed description of each proposed and permitted terminal groin and its accompanying beach fill project, including the information required to be submitted pursuant to subsection (e) of this section. For each permitted terminal groin and its accompanying beach fill project, the report shall also provide all of the following:

(1) The findings of the Commission required pursuant to subsection (f) of this section.

(2) The status of construction and maintenance of the terminal groin and its accompanying beach fill project, including the status of the implementation of the plan for construction and maintenance and the inlet management plan.

(3) A description and assessment of the benefits of the terminal groin and its accompanying beach fill project, if any.

(4) A description and assessment of the adverse impacts of the terminal groin and its accompanying beach fill project, if any, including a description and assessment of any mitigation measures implemented to address adverse impacts."

SECTION 2.(b) Section 5 of S.L. 2011-387 is repealed.

SECTION 3. The title of Part 2 of Article 3B of Chapter 143 of the General Statutes reads as rewritten:

"Part 2. ~~Guaranteed Energy Savings Contracts for~~Energy Saving Measures for Governmental Units."

SECTION 4.(a) G.S. 143-214.11 is amended to add two new subsections to read:

"**§ 143-214.11. Ecosystem Enhancement Program: compensatory mitigation.**

...

(i) The Ecosystem Enhancement Program shall exercise its authority to provide for compensatory mitigation under the authority granted by this section to use mitigation procurement programs in the following order of preference:

(1) Full delivery/Bank credit purchase program. - The Ecosystem Enhancement Program shall first seek to meet compensatory mitigation procurement requirements through the Program's full delivery program or by the purchase of credits from a private compensatory mitigation bank.

(2) Existing local compensatory mitigation bank credit purchase program. - Any compensatory mitigation procurement requirements that are not fulfillable under subdivision (1) of this subsection shall be procured from an existing local compensatory mitigation bank provided that the credit purchase is made to mitigate the impacts of a project located within the mitigation bank service area and hydrologic area of the existing local compensatory mitigation bank.

(3) Design/build program. - Any compensatory mitigation procurement requirements that are not fulfillable under subdivisions (1) or (2) of this subsection shall be procured under a program in which Ecosystem Enhancement Program contracts with one private entity to lead or implement the design, construction, and post-construction monitoring of compensatory mitigation at sites obtained by the Ecosystem Enhancement Program. Such a program shall be considered the procurement of compensatory mitigation credits.

(4) Design-bid-build program. - Any compensatory mitigation procurement requirements that are not fulfillable under either subdivisions (1) or (2) of this subsection may be procured under Ecosystem Enhancement Programs design-bid-build program. Ecosystem Enhancement Program may utilize this program only when procurement under subdivisions (1) or (2) of this subsection is not feasible. Any mitigation site design work currently being performed through contracts awarded under the design-bid-build program shall be allowed to continue as scheduled. Contracts for construction of projects with a design already approved by Ecosystem Enhancement Program shall be awarded by Ecosystem Enhancement Program by issuing a Request for Proposal (RFP). Only contractors who have prequalified under procedures established by Ecosystem Enhancement Program shall be eligible to bid on Ecosystem Enhancement Program construction projects. Construction contracts issued under this subdivision shall be exempt from the requirements of Article 8B of Chapter 143 of the General Statutes.

(j) The regulatory requirements for the establishment, operation, and monitoring of a compensatory mitigation bank or full delivery project shall vest at the time of the execution of the mitigation banking instrument or the award of a full delivery contract."

SECTION 4.(b) Sections 1.2 and 1.3 of S.L. 2011-343 are repealed.

SECTION 5. G.S. 143B-279.8(f) reads as rewritten:

"(f) The Secretary of Environment and Natural Resources shall report to the Environmental Review Commission and the ~~Joint Legislative Commission on Seafood and Aquaculture [Joint Legislative Commission on Governmental Operations]~~ Joint Legislative Commission on Governmental Operations within 30 days of the completion or substantial revision of each draft Coastal Habitat Protection Plan. The Environmental Review Commission and the Joint Legislative Commission on Governmental Operations shall concurrently review each draft Coastal Habitat Protection Plan within 30 days of the date the draft Plan is submitted by the Secretary. The Environmental Review Commission and the Joint Legislative Commission on Governmental Operations may submit comments and recommendations on the draft Plan to the Secretary within 30 days of the date the draft Plan is submitted by the Secretary."

SECTION 6. This act is effective when it becomes law.

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011

DRAFT

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BILL DRAFT 2011-TFz-4 [v.9] (04/02)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
4/24/2012 1:25:29 PM

Short Title: ENR Reports Consolidation. (Public)

Sponsors: .

Referred to:

A BILL TO BE ENTITLED

AN ACT TO AMEND OR REPEAL VARIOUS ENVIRONMENTAL AND NATURAL RESOURCES REPORTING REQUIREMENTS, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 130A-294 reads as rewritten:

"**§ 130A-294. Solid waste management program.**

...

(i) ~~The Department shall develop a comprehensive hazardous waste management plan for the State and shall revise the plan on or before 1 July of even-numbered years.~~ The Department shall report to the General Assembly, the Fiscal Research Division, the Senate Appropriations Subcommittee on Natural and Economic Resources, the House Appropriations Subcommittee on Natural and Economic Resources, and the Environmental Review Commission on or before ~~1 October~~January 1 of each year on the implementation and cost of the ~~comprehensive~~ hazardous waste management ~~plan~~ program. The report shall include an evaluation of how well the State and private parties are managing and cleaning up hazardous waste. The report shall also include recommendations to the Governor, State agencies, and the General Assembly on ways to: improve waste management; reduce the amount of waste generated; maximize resource recovery, reuse, and conservation; and minimize the amount of hazardous waste which must be disposed of. The report shall include beginning fund balance, fees collected under G.S. 130A-294-1, anticipated revenue from all sources, total expenditures by activities and categories for the hazardous waste management program, ending fund balance, any recommended adjustments in annual and tonnage fees which may be necessary to assure the continued availability of funds sufficient to pay the State's share of the cost of the hazardous waste management program, and any other information requested by the General Assembly. In recommending adjustments in annual and tonnage fees, the Department may propose fees for hazardous waste generators, and for hazardous waste treatment facilities that treat waste generated on-site, which are designed to encourage reductions in the volume or quantity and toxicity of hazardous waste. The report shall include a description of activities undertaken to implement the resident inspectors program established under G.S. 130A-295.02. In addition, the report shall include an annual update on the mercury switch removal program.

The report required by subsection (i) of this section shall include, at a minimum, all of the following:

(1) A detailed description of the mercury recovery performance ratio achieved by the mercury switch removal program.

(2) A detailed description of the mercury switch collection system developed and implemented by vehicle manufacturers in accordance with the NVMSRP.

(3) In the event that a mercury recovery performance ratio of at least 0.90 of the national mercury recovery performance ratio as reported by the NVMSRP is not achieved, a description of additional or alternative actions that may be implemented to improve the mercury switch removal program.

(4) The number of mercury switches collected and a description of how the mercury switches were managed.

(5) A statement that details the costs required to implement the mercury switch removal program including a summary of receipts and disbursements from the Mercury Switch Removal Account.

SECTION 1.1. G.S. 130A-294 reads as rewritten:

"**§ 130A-294. Solid waste management program.**

...

(i) The Department shall report to the General Assembly, the Fiscal Research Division, the Senate Appropriations Subcommittee on Natural and Economic Resources, the House Appropriations Subcommittee on Natural and Economic Resources, and the Environmental Review Commission on or before January 1 of each year on the implementation and cost of the hazardous waste management program. The report shall include an evaluation of how well the State and private parties are managing and cleaning up hazardous waste. The report shall also include recommendations to the Governor, State agencies, and the General Assembly on ways to: improve waste management; reduce the amount of waste generated; maximize resource recovery, reuse, and conservation; and minimize the amount of hazardous waste which must be disposed of. The report shall include beginning fund balance, fees collected under G.S. 130A-294-1, anticipated revenue from all sources, total expenditures by activities and categories for the hazardous waste management program, ending fund balance, any recommended adjustments in annual and tonnage fees which may be necessary to assure the continued availability of funds sufficient to pay the State's share of the cost of the hazardous waste management program, and any other information requested by the General Assembly. In recommending adjustments in annual and tonnage fees, the Department may propose fees for hazardous waste generators, and for hazardous waste treatment facilities that treat waste generated on-site, which are designed to encourage reductions in the volume or quantity and toxicity of hazardous waste. The report shall include a description of activities undertaken to implement the resident inspectors program established under G.S. 130A-295.02. In addition, the report shall include an annual update on the mercury switch removal program.

The report required by subsection (i) of this section shall include, at a minimum, all of the following:

~~(1) A detailed description of the mercury recovery performance ratio achieved by the mercury switch removal program.~~

~~(2) A detailed description of the mercury switch collection system developed and implemented by vehicle manufacturers in accordance with the NVMSRP.~~

~~(3) In the event that a mercury recovery performance ratio of at least 0.90 of the national mercury recovery performance ratio as reported by the NVMSRP is not achieved, a description of additional or alternative actions that may be implemented to improve the mercury switch removal program.~~

~~(4) The number of mercury switches collected and a description of how the mercury switches were managed.~~

~~(5) A statement that details the costs required to implement the mercury switch removal program including a summary of receipts and disbursements from the Mercury Switch Removal Account.~~

(1) A detailed description and documentation of the capture rate achieved.

(2) In the event that a capture rate of at least ninety percent (90%) is not achieved, a description of additional or alternative actions that may be implemented to improve the mercury minimization plan and its implementation.

(3) The number of mercury switches collected, the number of end-of-life vehicles containing mercury switches, the number of end-of-life vehicles processed for recycling, and a description of how the mercury switches were managed.

(4) A statement that details the costs required to implement the mercury minimization plan.

..."

SECTION 2. G.S. 130A-294.1(p) is repealed.

SECTION 3. G.S. 130A-295.02(m) is repealed.

SECTION 4. G.S. 130A-310.2(b) is repealed.

SECTION 5. G.S. 130A-310.57 is repealed.

SECTION 5. G.S. 130A-310.10 reads as rewritten:

"**§ 130A-310.10. Annual reports.**

(a) The Secretary shall report on inactive hazardous sites to the Joint Legislative Commission on Governmental Operations, the Environmental Review Commission, and the Fiscal Research Division on or before ~~1 October~~ October 1 of each year. The report shall include at least the following:

(1) The Inactive Hazardous Waste Sites Priority List.

(2) A list of remedial action plans requiring State funding through the Inactive Hazardous Sites Cleanup Fund.

(3) A comprehensive budget to implement these remedial action plans and the adequacy of the Inactive Hazardous Sites Cleanup Fund to fund the cost of said plans.

(4) A prioritized list of sites that are eligible for remedial action under CERCLA/SARA together with recommended remedial action plans and a comprehensive budget to implement such plans. The budget for implementing a remedial action plan under CERCLA/SARA shall include a statement as to any appropriation that may be necessary to pay the State's share of such plan.

(5) A list of sites and remedial action plans undergoing voluntary cleanup with Departmental approval.

(6) A list of sites and remedial action plans that may require State funding, a comprehensive budget if implementation of these possible remedial action plans is required, and the adequacy of the Inactive Hazardous Sites Cleanup Fund to fund the possible costs of said plans.

(7) A list of sites that pose an imminent hazard.

(8) A comprehensive budget to develop and implement remedial action plans for sites that pose imminent hazards and that may require State funding, and the adequacy of the Inactive Hazardous Sites Cleanup Fund.

(8a) The amounts and sources of funds collected by year received under G.S. 130A-310.76, the amounts and sources of those funds paid into the

Inactive Hazardous Sites Cleanup Fund established pursuant to G.S. 130A-310.11, the number of acres of contamination for which funds have been received pursuant to G.S. 130A-310.76, and a detailed annual accounting of how the funds collected pursuant to G.S. 130A-310.76 have been utilized by the Department to advance the purposes of Part 8 of Article 9 of Chapter 130A of the General Statutes.

(9) Any other information requested by the General Assembly or the Environmental Review Commission.

(a1) On or before October 1 of each year, the Department shall report to each member of the General Assembly who has an inactive hazardous substance or waste disposal site in the member's district. This report shall include the location of each inactive hazardous substance or waste disposal site in the member's district, the type and amount of hazardous substances or waste known or believed to be located on each of these sites, the last action taken at each of these sites, and the date of that last action.

(b) Repealed by Session Laws 2001-452, s. 2.3, effective October 28, 2001."

SECTION 7. G.S. 143-215.94M reads as rewritten:

"**§ 143-215.94M. Reports.**

(a) The Secretary shall present an annual report to the Environmental Review Commission which shall include at least the following:

(1) A list of all discharges or releases of petroleum from underground storage tanks;

(2) A list of all cleanups requiring State funding through the Noncommercial Fund and a comprehensive budget to complete such cleanups;

(3) A list of all cleanups undertaken by tank owners or operators and the status of these cleanups;

(4) A statement of receipts and disbursements for both the Commercial Fund and the Noncommercial Fund;

(5) A statement of all claims against both the Commercial Fund and the Noncommercial Fund, including claims paid, claims denied, pending claims, anticipated claims, and any other obligations; and

(6) The adequacy of both the Commercial Fund and the Noncommercial Fund to carry out the purposes of this Part together with any recommendations as to measures that may be necessary to assure the continued solvency of the Commercial Fund and the Noncommercial ~~Fund; and~~Fund.

~~(7) A statement of the condition of the Loan Fund and a summary of all activity under the Loan Fund.~~

(b) The report required by this section shall be made by the Secretary on or before ~~1 September~~November 1 of each year."

SECTION 8. Section 1.1 is effective December 31, 2017. Except as otherwise provided, this act is effective when it becomes law.

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
October 11, 2012

The Environmental Review Commission (ERC or Commission) met on Thursday, October 11, 2012 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Samuelson presided.

The following members were present: Representative Mitch Gillespie Co-Chair, Senator Stan Bingham, Senator Fletcher Hartsell, Senator Brent Jackson, Representative William Brisson, Representative Joe Hackney, Representative Carolyn Justice, and Representative Chuck McGrady. Also present were: Mr. Jeff Hudson, Ms. Jennifer McGinnis, and Mr. Peter Ledford, Commission Counsels; Ms. Mariah Matheson, Research Assistant; Ms. Susan Phillips, Commission Clerk; and Sergeants-at-Arms John Brandon, Martha Gadison, Steve Wilson, Anderson Meadows and Billy Fritcher.

On August 30, 2012, notice was sent to members and interested parties via e-mail. A copy of this notice is incorporated into these minutes as Attachment #1. Copies of the agenda for the meeting and visitor registration sheets are incorporated into these minutes as Attachment #2 and Attachment #3.

Call to order and introductory remarks

Representative Samuelson called the meeting to order and welcomed members, staff, and visitors in attendance. There were no introductory remarks made by the Commission Co-Chairs. Representative Samuelson recognized Jeff Hudson, Commission Counsel, for an overview of the meeting.

Quarterly Report by the Environmental Management Commission (EMC)

Representative Samuelson recognized Stephen T. Smith, Chairman, Environmental Management Commission (EMC), to make his presentation on the quarterly reports on the operations, activities, programs, and progress of the Environmental Management Commission from January 2012 through September 2012. These three reports are included in these minutes as Attachments #4, #5, and #6. Mr. Smith reviewed the highlights of the quarterly reports.

Senator Jackson asked which states were represented at the North Carolina Forum on Nutrient Over-Enrichment.

Mr. Smith said that presenters came from Florida, Mid-Atlantic, and the New England states. Mr. Smith offered to provide the Commission with the forum agenda and a list of the speakers (Attachments #7 and #8).

Representative Gillespie asked if the EMC has considered allowing selective timber cutting within a buffer if performed under the supervision of a forestry official.

Mr. Smith indicated that the EMC has not discussed this issue yet.

Ms. Robin Smith, Assistant Secretary of Environment and Natural Resources said that she would make a note of this and respond back to Representative Gillespie directly.

Representative Gillespie asked for information on the 303(d) list.

Mr. Smith replied that the 303(d) list is a section of the Clean Water Act. Periodically the State surveys waters to determine which waters should be designated as impaired. The Clean Water Act requires that a list of impaired waters be prepared and sent to the United States Environmental Protection Agency (U.S. EPA). The U.S. EPA either approves or disapproves the list and from that list each state develops a strategy to deal with those surface waters and the extent of their impairment.

Representative Gillespie asked how ecological flow is considered when creating a 303(d) list.

Mr. Smith responded that ecological flow is not considered when determining if a water body is classified as impaired under the 303(d) list. Ecological flow is a separate issue.

Representative Gillespie asked how the EMC creates a list of impaired waters and what methodology/criteria do they use to determine if a water body is impaired.

Mr. Smith replied that the methodology was developed by the Department of Environment and Natural Resources (DENR).

Rep. Gillespie asked that Ms. Smith speak to the methodology.

Ms. Smith said that there is not a single methodology for a single pollutant. For example mercury pollution is determined in a different way versus other metals. There are also water quality standards for most pollutants for North Carolina streams. The determination of impairment is based on the sampling set. Ms. Smith noted that the Division of Water Quality staff is more familiar with this subject and can make a future presentation to the Commission.

Representative Gillespie said that the Commission could hear a presentation on ecological flow in the November meeting.

Representative Gillespie asked if the General Assembly directed the EMC to prioritize and identify these impaired waters and create the methodology. According to Representative Gillespie, the statute directs the EMC to perform this function, not DENR.

Ms. Smith replied that she was not aware of any legislative direction with respect to impaired water designations. It was Ms. Smith's understanding that DENR is responding to the requirements of the Clean Water Act. There are State laws that direct DENR to act on a priority basis on certain types of programs. For example, DENR has very specific direction to act based on human health and environmental risks and prioritize contaminated sites.

Representative Gillespie directed Ms. Smith to G.S. 143B-282 where it reads that the EMC shall implement provisions of this subsection and will identify and prioritize the impaired waters. The EMC has recently requested public comment as to whether or not they should perform this task when the General Assembly has already directed the EMC to. Upon receiving the information from DENR, the EMC should identify and prioritize these waters.

Ms. Smith replied that these may be two separate issues. One issue is the designation of the waters as impaired. This is a technical determination of whether that water body is meeting water quality standards or not.

With regard to the EMC, the EMC is the body with the authority to address those impairments, but the designation as an impaired water is just a listing. The designation is based on water quality monitoring and is a list of impaired waters based on water quality data. It is the EMC's role to adopt standards or programs to address the impairment. Ms. Smith referred to Mr. Smith for additional comment.

Mr. Smith said that there are a number of things that the General Assembly has given the EMC statutory authority to do. One, for instance, is issuing air quality and water quality permits. Years ago the EMC delegated the permitting authority to staff because the EMC doesn't have the technical expertise or manpower to deal with the permit applications received. The actual review of permit applications, including both air and water, and issuance of those permits is a staff function. The development of the methodology for the 303(d) list has been delegated by the EMC to staff. It is highly scientific and technical. As the EMC has looked at the Statewide Total Daily Maximum Load (TDML) for mercury, the EMC had questions about the methodology. This has led the EMC to consider the statute and the extent to which the EMC should reassert itself into the development of the methodology for the 303(d) list. The EMC believes that a good first step is to ask for public comment. The EMC received an excellent set of comments from Progress Energy. However, the EMC cannot perform the entire methodology development. If the EMC needs to be involved in the development process, how much and to what extent? How much should the staff be delegated and what should the EMC do?

Representative Gillespie asked if the EMC vote on whether to delegate the development process to the State and then go to public comments.

Mr. Smith replied that it is likely that the EMC will ask for public comment as to the EMC's involvement in the development of methodology. Mr. Smith anticipates that the EMC will consider the extent to which the EMC should be directly involved with the methodology or if it should remain a staff function. The EMC will delegate to staff the portions that the EMC is not able to handle, which will be the bulk of it. There is also a question as to the extent to which the EMC engages in oversight of the process. The EMC believes that the best way to start the process is to ask for public comment, because there are people who have studied TDMLs, 303(d) lists, and methodologies for their careers. Some of whom are in the regulated community, the academic community, and State government.

Representative Hackney asked which statute Representative Gillespie was referring to.

Representative Gillespie referenced G.S. 143B-282(c) and (d). Representative Gillespie acknowledged that the EMC does not likely have the expertise needed for the development of the methodology for the 303(d) list, however, he asked if the EMC should vote and decide whether or not to delegate this function.

Representative Brisson asked about the report on the reclassification for water supply intake. Representative Brisson noted that the EMC did not specify the conditions of the river, for example, phosphorous levels. If shown, what percentage is due to city development versus agricultural development? Who is the high contributor?

Mr. Smith said that these changes were only related to public water intake, which is the local government's ability to take water out of the stream and is only for designation intake purposes. With regard to the quality of the streams, the EMC will send the Commission the requested river basin-wide report and the major contributors.

Representative Samuelson asked if there was any good news to report in changes in water quality.

Mr. Smith said that DENR issues a report every three years.

Senator Bingham asked Mr. Smith for a report on Polychlorinated Biphenyls (PCBs) in the Yadkin and Badin rivers.

Mr. Smith said that he would provide it to the Commission, which is included as Attachment #9.

Annual State Water Supply Plan Report

Representative Samuelson recognized Mr. Thomas A. Reeder, Director of the Division of Water Resources (DWR), DENR. Mr. Reeder presented the Annual State Water Supply Plan Report to the Commission. A copy of the presentation is included in the attachments to these minutes as Attachments #10 and 11#. At the conclusion of his presentation the members asked questions.

Mr. Reeder noted that there are several dozen water systems in the State that cannot account for 31% to 50% of their water and that there are several water systems that will require an interbasin transfer (IBT) by 2050.

Representative Gillespie asked if Mr. Reeder would provide a list of the water systems that will need IBTs by 2050.

Mr. Reeder said that he would provide the Commission with the specific water systems at the ERC meeting in November.

Representative McGrady asked if there was any linkage between the 37 water systems in the State that can't account for 31-50% of their water supply and the geographical location of those systems. Is this problem more prevalent in the mountain areas.

Mr. Reeder said that the water loss is partially due to geography, as the mountain region of the State may be subject to more water loss. Water must be pumped at increased pressures through mountainous terrain. In addition to geography, Mr. Reeder said that improper metering, antiquated systems, and lack of staff could contribute to pervasive water loss. Mr. Reeder noted that none of the major water systems have this problem.

Senator Hartsell asked if Mr. Reeder and DWR has been following the L&S Water Power, Inc. v. Piedmont Triad Regional Water Authority case pending before the North Carolina Supreme Court. If so, has DWR intervened.

Mr. Reeder replied that the Attorney General's office is following it and DWR has not intervened.

Senator Bingham asked if rising water levels in the aquifers will continue. If so, does that mean that the aquifers could return to 100%.

Mr. Reeder replied said that yes it could.

Senator Bingham asked about salt water incursion in the aquifers.

Mr. Reeder said that once salt water incursion occurs it is almost impossible to overcome the problems created. Nano filters and desalination are possibilities, but both processes are very expensive. North Carolina needs to use aquifers in a sustainable fashion so the aquifer does not depressurize.

Representative Samuelson asked how pressure can be increased in an aquifer.

Mr. Reeder explained how an aquifer works. The more water stored in an aquifer the more pressure it will have. As it recharges through rain water the pressure goes up.

Senator Bingham asked if some of these water systems have leakages. Could this be improved with efficiencies.

Mr. Reeder said that some water infrastructure in the State is so old that all water systems in North Carolina have leakages due to age. A lot of leakages occur because the water systems do not have the resources to manage their systems.

Representative Samuelson asked Mr. Reeder to describe the differences between the OASIS model versus the CHEOPS model. South Carolina is using the OASIS model, whereas the CHEOPS model is used for the Catawba river basin.

Mr. Reeder asked Mr. Tom France, Deputy Director of DWR for input. Mr. France replied that DWR is using CHEOPS model for the Catawba river basin and North and South Carolina, but once the updates are done both states are going to convert to the OASIS model for the future.

Representative Samuelson asked if the City of Raleigh can reallocate water quality storage into water supply storage.

Mr. Reeder replied that that is what the model allows DWR to do. DWR contacted the Army Corps of Engineers (Corps) and asked if DWR can do a reallocation study. The Corps is receptive. DWR is in the initial phase of beginning that study.

Report on the 2011 Agriculture Water Use Survey

Representative Samuelson recognized Mr. Vernon Cox, Environmental Programs Specialist of the Department of Agriculture and Consumer Services, to present a report on the 2011 Agriculture Water Use Survey. Mr. Cox's presentation is included as Attachments #12 and #13.

Senator Bingham asked about aquaculture withdrawals.

Mr. Cox explained that most of those withdrawals are for trout production throughout the State.

Senator Bingham said he did not think aquaculture would be counted as a withdrawal, as it's considered a flow-through.

Mr. Cox said that it is consistent with what DWR considers a withdrawal, similar to hydroelectric.

Senator Jackson asked if agriculture water use was 1% of the total State water usage.

Mr. Cox said that number was accurate.

Presentation on the State Erosion and Sedimentation Control Program

Representative Samuelson recognized Ms. Robin Smith and Mr. Tracey Davis, Division of Energy, Mineral and Land Resources, DENR, for a presentation on the State erosion and sedimentation control program. Mr. Davis' presentation is included in these minutes as Attachment #14.

Representative Gillespie asked about local programs delegated by the State and their schedule.

Mr. Davis replied that they are on a review schedule of every two years, if a problem is found they are placed on probation and the reviews are more frequent. If problems persist the State takes the program back.

Representative Gillespie asked if the Department has considered streamlining the review process using licensed engineers as opposed to unlicensed engineers.

Mr. Davis replied that a study was done several years ago. Plans submitted by licensed engineers were no better than plans submitted by unlicensed engineers. Mr. Davis explained the

express permitting process and the benefit it offers. Mr. Davis indicated that DENR typically reviews plans within 20 days. DENR is educating the engineers and non-engineers on the requirements.

Representative McGrady noted that a higher percentage of mountain counties and jurisdictions have delegated programs.

Mr. Davis replied that most of the larger municipalities want to have control over their program. Some of the smaller municipalities do not. It's open to any county who wants to propose a plan. Mr. Davis is not sure why there are more delegated programs in the mountain areas rather than in the piedmont.

Representative McGrady observed that the State program is failing and the recommendations offered to help fix the program are not enough. There are not enough staff and funds to do the job. Representative McGrady asked about the State program's responsiveness. There needs to be a systematic look at this program.

Representative Hackney noted that there cannot be a successful sedimentation program without the staff to inspect the sites. The legislature has cut the program's staff.

Representative McGrady agreed with Representative Hackney with regard to the reduction of staff.

Plastics Recycling

Representative Samuelson recognized several people to discuss plastics recycling. Mr. Scott B. Mouw, Chief-Community and Business Assistance Section, Division of Environmental Assistance and Outreach, DENR, presented an update on the degradable plastic study. Attachment #15.

Senator Bingham asked about page nine of Mr. Mouw's presentation. What is the difference between high-density polyethylene (HDPE) and polyethylene terephthalate (PET) plastic bottles. Is the weight measurement in tons or pounds.

Mr. Mouw said that PET is mostly plastic bottles such as soda bottles and water bottles or single serve drink bottles. HDPE has the ability to have handles, such as milk bottles and laundry detergent bottles. The weight is measured in tons.

Senator Bingham asked if DENR considered placing a deposit on these bottles.

Mr. Mouw replied that DENR doesn't have an opinion on deposits. Ten states have deposits now. Some communities in North Carolina have incentive based programs to encourage recycling of bottles. One bottling company does a lot of work with some of the larger municipalities to give people incentives to recycle.

Representative Samuelson stated that Coca Cola did this in Charlotte.

Representative Hackney said that there has been an increase in jobs in the plastic recycling industry in recent years.

Mr. Mouw said that North Carolina has had major investments in plastic bottle reclamation. Plastic bottle recycling has doubled in the past five to six years. Every time DENR does a study on plastic bottle recycling they note a 5% increase in plastic reclamation jobs.

Next, Mr. Scott Booth, Chief Operating Officer, Envision Plastics, made a presentation about Envision Plastics and how they recycle polyolefin resins. His presentation is included in these minutes as Attachment #16.

Senator Bingham asked if Envision was able to recycle bottles that had contaminants, like motor oil, pesticides, or hazardous waste.

Mr. Booth said that plastic bottles with contaminants occasionally get mixed in with other bottles. It is a small percentage and not a huge problem. Envision deals with plastics coming from the consumer waste stream, so they do not usually deal with hazardous waste. Also, Envision Plastics has their own wastewater treatment system.

Senator Bingham asked how Envision Plastics separates plastics by color.

Mr. Booth said that they separate the colors through a flake process. For example, there are a whole rainbow of colors that can create the color blue.

Mr. Chris Bradley, Vice President of Operations, Clear Path Recycling, gave a presentation on degradable additives as a threat to plastics recycling. His presentation is included in these minutes as Attachment #17.

Representative Hackney asked what level of degradable plastic additives would contaminate the waste stream.

Mr. Bradley replied that 100 parts per million could be tolerated. Mr. Bradley said that there haven't been any studies done to verify this.

Senator Bingham asked about recycling feedstocks.

Mr. Bradley said that the plastic feedstocks are for Clear Path Recycling's customers.

Mr. Terry Turner, Product Development Manager, Unifi Inc, gave a presentation about Unifi and their product Repreve, which is a synthetic yarn. His presentation is included in these minutes as Attachment #18.

Senator Bingham asked if ultraviolet (UV) light adversely affects their product.

Mr. Turner replied that in cases of excess exposure to UV light there is an additive for UV protection.

Senator Bingham asked if Unifi makes some of the lumber products shown in the presentation.

Mr. Turner replied that a lot of the lumber products are mixed plastics and lumber fiber, so Unifi prefers not to use lumber products.

Dr. Charles J. Lancelot, Executive Director of the Plastics Environmental Council, spoke about inert biodegradable plastics in the recycling stream. His comments are included in these minutes as Attachments #19 and #20.

Senator Bingham asked if there are polyethylene products that are permanent.

Dr. Lancelot replied that most polyethylene products are permanent unless you add a degradable additive to them. There are polyethylene products used for military purposes that are not degradable.

Disposition of Reports Attachment #21

Commission discussion and announcements

Representative Samuelson offered to the Commission members some correspondence she received from Mr. Mike Pucci, Chairman, North Carolina Coalition Against Uranium Mining. This is included in these minutes as Attachment #22. Representative Samuelson advised the Commission that the next meeting would be on Thursday, November 15th at 9:30 am.

There being no further business, the meeting was adjourned at 1:10 PM.

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Susan D. Phillips, Commission Clerk

NORTH CAROLINA GENERAL ASSEMBLY

Raleigh, North Carolina 27601

August 30, 2012

MEMORANDUM

TO: Members, Environmental Review Commission
FROM: Susan Phillips, Commission Clerk
SUBJECT: Meeting Notice

DAY	DATE	TIME	ROOM
Thursday	October 11, 2012	9:30 a.m.	544

Parking for non-legislative members of the committee/commission is available in the visitor parking deck #75 located on Salisbury Street across from the Legislative Office Building. Parking is also available in the parking lot across Jones Street from the State Library/Archives. You can view a map of downtown by visiting http://www.ncleg.net/graphics/downtownmap.pdf.

If you are unable to attend or have any questions concerning this meeting, please contact Susan Phillips at (919)715-3009.

cc: Committee Record _X_
Interested Parties _X_

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
SENATOR STAN BINGHAM
SENATOR DANIEL G. CLODFELTER
SENATOR DON EAST
SENATOR FLETCHER L. HARTSELL, Jr.
SENATOR BRENT JACKSON
SENATOR BILL RABON
SENATOR MICHAEL P. WALTERS

REPRESENTATIVE WILLIAM D. BRISSON
REPRESENTATIVE JOE HACKNEY
REPRESENTATIVE CAROLYN H. JUSTICE
REPRESENTATIVE PAT MCELRAFT
REPRESENTATIVE CHUCK MCGRADY
REPRESENTATIVE ROGER WEST

JEFF W. HUDSON
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JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

9:30 a.m. Thursday, October 11, 2012
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Ruth Samuelson, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Quarterly reports by the Environmental Management Commission (EMC) as to its operations, activities, programs, and progress for the period from January 2012 through September 2012 (G.S. 143B-282(b)) *(30 minutes)*
   Stephen T. Smith, Chairman
   Environmental Management Commission

5. Annual State Water Supply Plan Report (G.S. 143-355(n)) *(45 minutes)*
   Thomas A. Reeder, Director
   Division of Water Resources, Department of Environment and Natural Resources (DENR)

6. Report on the 2011 Agriculture Water Use Survey (G.S. 106-24(b)) *(30 minutes)*
   Vernon Cox, Environmental Programs Specialist
   Department of Agriculture and Consumer Services

7. Presentation on the State Erosion and Sedimentation Control Program *(30 minutes)*
   Robin Smith, Assistant Secretary for Environment
   DENR

   Tracy Davis, Director
   Division of Energy, Mineral, and Land Resources, DENR

8. Plastics Recycling *(1 hour)*
   Scott B. Mouw, Chief
   Community and Business Assistance Section
   Division of Environmental Assistance and Outreach, DENR

   Scott Booth
   Chief Operating Officer
   Envision Plastics

   Chris Bradley
   Vice President of Operations
   Clear Path Recycling, LLC

   Terry Turner
   Product Development Manager
   Unifi, Inc.

   Charles J. Lancelot, Ph.D.
   Executive Director, Plastics Environmental Council

9. Commission discussion and announcements

10. Adjourn

FUTURE MEETINGS:

The Environmental Review Commission will meet as follows in the Legislative Office Building (LOB), Raleigh, North Carolina. **This schedule is tentative and subject to adjustment.** For planning purposes, however, please reserve these dates.

TBD

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

VISITOR REGISTRATION SHEET

Environmental Review Commission — October 11, 2012

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
CHARLES J LANCZOS, PH.D.	XCALIBER ASSOCIATES 13326 PROVIDENCE PK DR., MICOU, GA
Timothy Workman	Plastics Color Corp Asheboro, NC
Emily Baddour	Smith Gardner, Inc. 14 N. Boylan Raleigh, NC
DAVID ASSEEN	SPI 1667 K St. WASHINGTON DC 20004
DON SAFRIT	SECURE RESOURCES PO Box 37148, RALEIGH, NC
CHRIS DILLON	M ARC
Paul Sherman	NCFB
Ray Barham	Alcoa
Angie Harris	Weyerhaeuser
CHRIS MILLIS	REP.- ELECT 16TH DISTRICT
George Smith	Nexsen Pruet
Ross Smith	PCS Phosphate Co. Inc
MICK GREESON	DUKE ENERGY

VISITOR REGISTRATION SHEET

Environment Review Comm — 10/11/12

Name of Committee — Date

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NAME	FIRM OR AGENCY AND ADDRESS
Rick Zechini	Williams Mullen
Daniel Amburn	NCRMA
Doug Lassiter	NCSTA
Rob Lamm	~~REA~~
Patric Buffkin	NCAEC
T Thomas	FWS
Kimberly Robinson	NCRMA
Richard Conard	MCIC
Lucas Pregnall	CGS
Lori Lundberg	~~CALTA~~
George Everett	Duke Energy

VISITOR REGISTRATION SHEET

Environmental Review Commission — October 11, 2012

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
TRACY DAVIS	NCDENR - DEMLR
FRANCIS M. NEVILS	NCDENR - DEMLR
TERRY TURNER	UNIFI, GREENSBORO
Jim Johnson	BSA
Trina Ozer	DENR
Erin Wynia	NCLM
STEVE Smith	EMC
Sheila Holman	DBH
Bill Cary	"
Vernon Cox	NCDA&CS

VISITOR REGISTRATION SHEET

Environmental Review Comm — 10-11-12

Name of Committee — Date

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Kathy Hunter	Duke
Dan McLawhorn	Raleigh
Chelsey Sz	Biogas Energy
Chris Bundy	Clear Path Recycling
Doug Heran	Duke Health
Jaz Tunnell	Piedmont Nat Gas

VISITOR REGISTRATION SHEET

Environmental Review Commission — October 11, 2012

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
BRUCE THOMPSON	PARKER POE

VISITOR REGISTRATION SHEET

Environmental Review Commission — October 11, 2012

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Charles Case	Hunton & Williams
Jay Stein	NCAA
Jim Joyce	K+L Gates
Haywood Phthisic	Lower Neuse Basin Assn.
Don Rayno	DENR-DWR
Cindy Shuler	NCCW
Karen Bryan	NCDACS-NASS
Susanna Davis	Williams Mullen

VISITOR REGISTRATION SHEET

Environmental Review Commission — October 11, 2012

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Mary Maclean Asbill	SELC
John A. Sims	Cap. Grp. Florida Equity
Tommy Stevens	NCPC
Sandy Sands	NP
David Barnes	PS
Allison Wallen	NMPS
Kristen Lasher	SSG
John Goodwin	NC Chamber

VISITOR REGISTRATION SHEET

Environmental Review Commission — October 11, 2012

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
TERRY TURNER	UNIFI, GREENSBORO
Jim Holman	Nicholas Inst/Duke Univ
RICHARD WINSMAN	UNC SOG
BERRY JENKINS	CAROLINAS AGC
Jamie Hunter	DENR
Robin Smith	DENR
Scott Mouw	DENR
Beth Warren	AG's Office
Tom Fransen	DWR, DENR
Alex Miller	KLG
Latonia Strickland	NCACC

ENVIRONMENTAL MANAGEMENT COMMISSION

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Stephen T. Smith
Chairman
Charles Peterson
Vice Chairman

Beverly Eaves Perdue, Governor
Dee Freeman, Secretary

Christopher J. Ayers
Marvin S. Cavanaugh Sr.
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Thomas F. Cecich
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Kevin Martin
David H. Moreau
Jeffrey V. Morse
Darryl D. Moss
David B. Peden
Dickson Phillips III
Clyde E. Smith Jr.
Steve W. Tedder

April 15, 2012

TO: ENVIRONMENTAL REVIEW COMMISSION
Commission Counsel Jeff Hudson
Commission Counsel Jennifer McGinnis

FROM: Stephen T. Smith, Chair, Environmental Management Commission

RE: EMC Quarterly Report

Enclosed please find the quarterly report of the Environmental Management Commission on its operations, activities, programs and progress for the period December 1, 2011 to February 29, 2012.

Attachment

cc: Robin Smith, Assistant Secretary for Environment, NCDENR
Chuck Wakild, Director, DWQ, NCDENR
Dexter Matthews, Director, DWM, NCDENR
Sheila Holman, Director, DAQ, NCDENR
Kari Barsness, Director, LIA, NCDENR
Mariah Matheson, Research Division, NC General Assembly
Claire Hester, Fiscal Research Division, NC General Assembly

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NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
QUARTERLY REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION

Covering the period December 1, 2011 to February 29, 2012

Per the requirements of G.S. 143B-282(b), the Environmental Management Commission (EMC) is submitting this quarterly report covering the period of December 1, 2011 to February 29, 2012 on the EMC's operations, activities, programs and progress.

I. Nutrient Control Strategies Sections 2, 3, and 4 of Session Law 2005-190 (as amended by SL 2006-259 and SL 2009-486)

Nutrient Control Criteria – Section 2(b)

Per Section 2(b), the EMC continues to assess and identify nutrient control strategies and criteria necessary to prevent excess nutrient loading in each drinking water supply reservoir. The EMC is currently considering modifications to the chlorophyll-a surface water quality standard and will be hosting a forum addressing nutrient control issues in the Research Triangle Park on May 29th and 30th of this year.

Falls Lake - Section 3

The EMC is required to report its progress in assessing, identifying and adopting nutrient control strategies necessary to prevent excess nutrient loading in the Falls Lake water supply reservoir. Following an extensive stakeholder and rule-making process, permanent rules went into effect on January 15, 2011. Major actions are to be initiated over a 10-year first stage of implementation, with potential adaptive requirements under a second stage. Noteworthy groundwork occurred this quarter with the EMC approving fourteen local government new development stormwater programs for the Falls watershed in January. Local governments will fully adopt and implement these local programs by July 2012. Staff with the Division of Soil and Water Conservation and the Division of Water Quality (DWQ) also held three additional monthly meetings with of the Watershed Oversight Committee that assists in implementing the Agriculture rule. At its February meeting the Watershed Oversight Committee finalized recommendations for agricultural accounting methods that they will present to the EMC for approval in March 2012.

Jordan Lake - Section 4 of Session Law 2005-190

Section 4 requires the EMC to report on progress toward developing and implementing a nutrient management strategy for reservoirs including Jordan Lake. The final set of Jordan Lake rules went into effect in August 2009. Timeframes for most new actions under the rules fall within nine years of the effective date of the rules.

The following actions were taken this quarter to support implementation: The Nutrient Scientific Advisory Board, which assists in implementing existing development stormwater requirements, held two meetings. The Board is tasked with developing a set of best management practices and accounting recommendations to be presented to the Secretary of DENR in July 2012. The Board is also assisting DWQ in assigning existing development load reduction goals to the jurisdictions and state and federal entities in the watershed by 2014. DWQ is reviewing local government new development stormwater programs that were submitted to DWQ in September for EMC approval by May 2012 and summer 2012 local implementation. Soil and Water Conservation districts are collecting data to conduct agriculture accounting in the watershed. The Jordan Watershed Oversight Committee, which administers requirements of the Jordan agriculture rule, will present accounting findings to the WQC in summer 2012. DWQ has been working with the NC Cooperative Extension Service on outreach for fertilizer management training that began in November and will continue through August 2012.

II. EMC Rulemaking Approvals

Adopted Amendments to Open Burning Rules to Incorporate Session Law 2011-394 Requirements (507)

During the 2011 legislative session, the General Assembly enacted S.L. 2011-394, An Act to Amend Certain Environmental Laws, which adjusted the setback requirements for permissible open burning. Amendments to 15A NCAC 02D .1900 were necessary to reflect the changes resulting from S.L. 2011-394 for consistency with the General Statutes in order to avoid confusion. Per the S.L. 2011-394, these amendments were not subject to the publication of notice of text and public hearing requirements of the Administrative Procedures Act (APA) or review by the Rules Review Commission (RRC). Per the statute, the EMC adopted amendments substantively identical to the statutory language to15A NCAC 02D .1903, Open Burning Without An Air Quality Permit, to change the setback requirement to 500 feet and to 15A NCAC 02D .1904, Air Curtain Burners, to change the setback requirement for air curtain burners to 300 feet. The Commission also discussed members' concerns regarding the public health impact of the statutory amendments and adopted a resolution to the General Assembly asking the General Assembly to re-evaluate and reconsider its decision and restore the 1000 feet setback.

Approved the Reclassification of the Haw River in Alamance, Caswell, Guilford, and Rockingham Counties (Cape Fear River Basin) to Class WS-IV and WS-IV with CA

The City of Greensboro (City) requested that a Haw River segment in Alamance, Caswell, Guilford and Rockingham Counties be reclassified in order to recognize and allow continued use of an existing emergency potable water supply intake on the Haw River. During the drought of 2002, the City received permission from the former Public Water Supply Section of the Division of Environmental Health and funding from the Division of Water Resources to construct and use an emergency intake on the Haw River. The waters draining to the intake are currently classified as Water Supply–V (WS-V) Nutrient Sensitive Waters (NSW) due to the Jordan Lake rules. Under current regulations, the source must be classified as a WS-I, WS-II, WS-III, or WS-IV to be used as a public water supply. Review of existing state and local government regulations applicable to these waters, including the Jordan Lake rules that apply to the entirety of the proposed watershed and the Phase 2 Stormwater Program that applies to approximately 40% of the proposed watershed, led to the proposed WS-IV designation for these waters. DWQ studies indicate that the subject waters meet WS-IV water supply water standards. In March 2011 and May 2011, the Water Quality Committee and the Commission, respectively, approved the request to proceed with rule-making for the proposed reclassification. A public hearing was held in September 2011 in Reidsville. The Rules Review Committee (RRC) approved the rules in February 2012 and the reclassification became effective March 1, 2012.

Approved the Reclassification of the South Fork New River in Ashe and Watauga Counties (New River Basin) to Class WS-IV and WS-IV CA

The Town of Boone requested that a segment of the South Fork New River in Ashe and Watauga Counties be reclassified to WS-IV CA and WS-IV (PA) to allow a new drinking water intake structure to be placed in the river. The Town's water system has surpassed 80% of capacity, which is DENR's trigger for requiring an expansion plan. In March 2011 and May 2011, the Water Quality Committee and the Commission, respectively, approved the request to proceed with rule-making for the proposed reclassification. A public hearing was held in August 2011 in Boone. The EMC approved the reclassification in January 2012. However, 10 letters of objection were received by the RRC; therefore, the reclassification will not become effective pending action by the legislature.

III. Other EMC Actions

Approved the Local Programs Implementing the Falls Lake New Development Stormwater Rule, and Delegation of Further Approval Authority to the Director

The Falls New Development stormwater rule, 15A NCAC 2B .0277, requires 14 local governments to prepare, adopt, and implement programs to achieve nutrient control on runoff from new development within their respective jurisdictions. In March 2011, the EMC approved a model local program developed by staff with input from stakeholders. The Falls communities submitted proposed programs for DWQ staff review in August 2011 and have made revisions based on staff comments. As specified in their ordinances, local programs will begin implementing the new development requirements immediately following ordinance adoption, with adoption dates scheduled during July 2012. The Commission approved twelve of the fourteen Falls Lake local government new development stormwater programs and gave conditional approval for two of the governments. The Commission also delegated authority to the Director to grant final approval to any programs on which the Commission places contingencies, upon resolution of those contingencies, and to approve any subsequent program amendments that these communities may propose.

Amendments to Rules for Declaratory Rulings, 15A NCAC 2I .0602 and 2I .0603

Commission counsel summarized the changes proposed for the Commission's rules for requesting and processing a request for declaratory ruling. The proposed changes are intended to efficiently implement the recent changes to the declaratory ruling statute, G.S. § 150B-4. Following discussion concerning the delegation of preliminary decisions to the Chairman regarding completeness of a request, standards for determining whether a request is granted or denied, and whether oral presentations will be allowed, the Commission by consensus referred the proposed rules to the Steering Committee for further review.

April 15, 2012

Stephen T. Smith

Stephen T. Smith
Chair, Environmental Management Commission

ENVIRONMENTAL MANAGEMENT COMMISSION

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Stephen T. Smith
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Kevin Martin
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Darryl D. Moss
David B. Peden
Amy E. Pickle
Dickson Phillips III
Clyde E. Smith Jr.
Steve W. Tedder

July 15, 2012

TO: ENVIRONMENTAL REVIEW COMMISSION
Commission Counsel Jeff Hudson
Commission Counsel Jennifer McGinnis

FROM: Stephen T. Smith, Chair, Environmental Management Commission STSmith

RE: EMC Quarterly Report

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Attachment

cc: Robin Smith, Assistant Secretary for Environment, NCDENR
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Dexter Matthews, Director, DWM, NCDENR
Sheila Holman, Director, DAQ, NCDENR
Kari Barsness, Director, LIA, NCDENR
Mariah Matheson, Research Division, NC General Assembly
Claire Hester, Fiscal Research Division, NC General Assembly

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NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
QUARTERLY REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION

Covering the period March 1, 2012 to May 31, 2012

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I. Nutrient Control Strategies Sections 2, 3, and 4 of Session Law 2005-190 (as amended by SL 2006-259 and SL 2009-486)

Nutrient Control Criteria – Section 2(b)

Per Section 2(b), the EMC continues to assess and identify nutrient control strategies and criteria necessary to prevent excess nutrient loading in each drinking water supply reservoir. The EMC is currently considering modifications to the chlorophyll-a surface water quality standard. The Division of Water Quality (DWQ) and the EMC hosted a forum on nutrient enrichment on May 29th and 30th to provide state and local leaders, managers, and planners with a review of the science, regulatory issues, economic considerations, and other policy issues related to nutrient over-enrichment and options for avoiding impairment to our surface waters. A report on these proceedings will be available by October 2012.

Falls Lake - Section 3

The EMC is required to report its progress in assessing, identifying and adopting nutrient control strategies necessary to prevent excess nutrient loading in the Falls Lake water supply reservoir. Following an extensive stakeholder and rule-making process, permanent rules went into effect on January 15, 2011. Major actions are to be initiated over a 10-year first stage of implementation, with potential adaptive requirements under a second stage. Noteworthy groundwork occurred this quarter with the DWQ staff taking recommendations for agricultural accounting methods developed by the Falls Watershed Oversight Committee, which assists in implementing the Agriculture rule, to the EMC for approval in March. Staff with the Division of Soil and Water Conservation and DWQ also held two additional monthly meetings with the Watershed Oversight Committee (WOC) to continue working on the development of local advisory committee strategies which are due to the WOC in July 2012. Staff also met with NCDOT in April and May to collaborate on a nutrient accounting framework for stormwater nutrient loading from new and existing NCDOT development that will be presented to the EMC for approval in July 2012.

Jordan Lake - Section 4 of Session Law 2005-190

Section 4 requires the EMC to report on progress toward developing and implementing a nutrient management strategy for reservoirs including Jordan Lake. The final set of Jordan Lake rules went into effect in August 2009. Timeframes for most new actions under the rules fall within nine years of the effective date of the rules. Actions taken this quarter to support implementation are described below.

The Nutrient Scientific Advisory Board, which assists in implementing existing development stormwater requirements, held three meetings. The Board is developing a set of best management practices and accounting recommendations to be presented to the secretary of DENR in July 2012. The Board is also assisting DWQ in assigning existing development load reduction goals to the jurisdictions and state and federal entities in the watershed by 2014. DWQ reviewed local government new development stormwater programs that were submitted to DWQ in September, and provided recommendations to the EMC at its May 2012 meeting. The EMC approved 32 programs, and required revisions to one. Implementation of the programs will occur between the summer and end of the year. Soil and Water Conservation districts continue to collect data for agriculture accounting in the watershed. The Jordan Watershed Oversight Committee, which administers requirements of the Jordan agriculture rule, will present accounting findings to the WQC in September 2012. DWQ has been working with the NC Cooperative Extension Service on outreach for fertilizer management training that began in November 2011 and will continue through August 2012.

II. EMC Rulemaking Approvals

Approved Hearing Officers' Report on Revision to the Injection Well Rules (15A NCAC 02C .0200)

The North Carolina Well Construction Act (G.S. 87, Article 7) authorizes the EMC to adopt rules governing the location, construction, repair, and abandonment of wells for the protection of public health and the groundwater resources of the State. The well construction rules in 15A NCAC 02C .0200 establish minimum construction standards plus permitting and reporting requirements for wells used for injection, recharge, or disposal, which were last amended in 1997. Several revisions were made to provide clarifications, address new injection well uses and construction materials, to meet minimum federal requirements, and to reduce the regulatory burden for certain types of injection wells that pose little risk to public health and groundwater resources.

Approved Hearing Officers' Report on Permanent Rule Amendment to Defer Carbon Dioxide Emissions from Biomass from Prevention of Significant Deterioration Requirements (496)

In May, as follow-up to the temporary amendment adopted in November 2011, the EMC approved the hearing report and adopted a permanent rule amendment to 15A NCAC 02D .0544, Prevention of Significant Deterioration for Greenhouse Gases, to defer carbon dioxide (CO2) emissions from bioenergy and other biogenic sources from consideration for prevention of significant deterioration (PSD) permitting purposes for a period of three years. The amendment ensures that stationary sources would not have to unnecessarily complete a best available control technology (BACT) analysis for biogenic CO2 nor be unnecessarily required to install equipment to control emissions during the three year deferral while USEPA completes its science and technical review of the issue of accounting for the net atmospheric impact of biogenic CO2 emissions. The amendment to the state rule reflects the federal deferral of such emissions in the state PSD program.

Approved the Reclassification of the Neuse River and Associated Quarry in Johnston County (Neuse River Basin) to Class WS-IV

Johnston County requested that portions of the Neuse River and an abandoned quarry within Johnston County be reclassified. The quarry is to receive water from a proposed Neuse River intake, and is to be reclassified to Water Supply-IV (WS-IV) with a Critical Area (CA). The subject portions of the Neuse River are to be reclassified to WS-IV with a CA and WS-IV with a Protected Area (PA). The reclassification is needed to construct the public water supply intake and utilize the quarry's water as a public water supply, in order to meet water demands projected through 2050. A public hearing was held in December 2011 in Princeton, NC. The proposed effective date for this reclassification is July 1, 2012.

III. Other EMC Actions

Approved Request to Proceed to Public Hearing with the Proposed Reclassification of a Segment of the Roanoke River along the Bertie County/Martin County Line to Class WS-IV Critical Area (CA) and WS-IV (Protected Area or PA)

Martin County Regional Water and Sewer Authority requested that a Roanoke River segment be reclassified from Class C to Class WS-IV CA and WS-IV (PA) in order to construct a public water supply intake. This new water supply source will allow Martin County and the Town of Williamston to meet requirements of the Central Coastal Plain Capacity Use Area (CCPCUA) rule and meet water demands through 2030. To receive necessary American Recovery and Reinvestment Act of 2009 (ARRA) funding, the proposed 2.0 mgd water treatment plant for this project must be able to operate by September 2015. Thus, the Authority requested that the proposal become effective by early 2013, and the proposed effective date for this reclassification is January 1, 2013.

Approved the Fiscal Analysis of Proposed Changes to Groundwater Rules 15A NCAC 2L .0202 and .0113

The EMC approved the economic analysis of proposed changes to North Carolina's Groundwater Rules, which are codified in 15A NCAC 02L .0202 and .0113 and were last amended January, 2010. The proposed revisions consist of an amendment to the 1,1- dichloroethylene standard in 2L .202(g)(59) from 7 ug/L to 350 ug/L, changes to .0202(d) & (f) to allow flexibility in the implementation of the (d)(5) maximum contaminant level criteria and changes to the .0113 variance requirements. Results from the public hearing held May 23, 2012 and the hearing officer's recommendation will be presented to the EMC at its September meeting .

Approved the Fiscal Analysis of Proposed Changes to Rulemaking Petition Rules 15A NCAC 2I .0501

The EMC approved the fiscal analysis of proposed changes to Rulemaking Petition Requirements codified in 15A NCAC 02I .0501. The proposed revisions amend 2I .0501 (a) to require a copy of the petition to be submitted in an electronic or digital format and amend 2I .0501(c) to delete the requirement to submit 20 paper copies when the petition exceeds ten pages. Written comments on this proposal are being accepted through July 2, 2012

Approved Recommendation to Appoint Four Members to the Water Pollution Control System Operators Certification Commission (WPCSOCC)

The following appointments were made to the WPCSOCC. Troy Perkins, representing Collections Systems, was appointed for a third term. Members appointed for a second term were Marchell Adams-David, Town Manager for Hamlet, representing small municipalities less than 10,000 population; Tim Bannister, representing Contract Wastewater Operators, and Dr. David L. Lindbo, representing University System Faculty. These three year terms will begin July1, 2012 and end June 30, 2015.

Approved Request to Proceed to Hearing on Clarification of 02Q .0102 Permitting Exemption (509)

At its May meeting the EMC approved proceeding to hearing on a minor clarification of air permit exemption language to avoid potential misreading. The Division of Air Quality (DAQ) identified the need for clarification regarding the interaction of broadly applicable rules regarding sources that are exempt from the general requirement to obtain an air quality permit with the air toxics rule specific exemptions. 15A NCAC 02Q .0102, Exemptions (General Provisions), specifies which activities are exempt from the requirement to obtain an air quality permit. 15A NCAC 02Q .0702, Exemptions (Toxic Air Pollutant Procedures), specifies activities which are exempt from the requirement to obtain a permit to emit toxic air pollutants (TAP) and not required to be included in TAP demonstrations. The EMC has previously determined through rulemaking that many of the activities currently exempt from the general requirement to obtain a permit under 02Q .0102(c) should also be exempt from air toxics demonstration and permitting requirements as identified in 02Q .0702(a)(1)-(24). Existing language in 02Q .0102(b)(7) needs to be clarified to reflect this interaction relative to smaller sources so that it is clear that small sources that are already not required to be included in an air toxics demonstration or permit also retain the general exemption from having to obtain an air quality permit in general. The proposed rule change conforms to the principles of Executive Order 70 by reducing potential burden on the regulated community and making the rule language easier to understand.

Approved the Final Roanoke River Basinwide Water Quality Plan

The Commission approved the Roanoke River Basin Plan which was developed per G.S. 143-215.8B to guide DWQ's actions in the Roanoke River Basin over the next five years and beyond utilizing existing rules and policies.

Approved Request to Proceed to Public Hearing with the Proposed Reclassification of Segments of Maiden and Allen Creeks in Catawba and Lincoln Counties (Catawba River Basin) to Class WS-V

The Town of Maiden requested that two portions of Maiden Creek and two portions of Allen Creek be reclassified from WS-II Critical Area (CA) High Quality Waters (HQW) and WS-II (Balance of Watershed or BW) HQW to WS-V. Because these waters are no longer used as public water supplies, this reclassification will result in an updated, accurate representation of these waters' current uses, and thus, this proposal serves the public interest per Executive Order #70 and Session Law 2011-398. The public hearing is not yet scheduled. The proposed effective date for this reclassification is March 1, 2013.

Approved Request for Approval of Local Programs Implementing the Jordan Lake New Development Stormwater Rule, and Delegation of Further Approval Authority to the Director

The EMC approved 32 programs, and required revisions to one (Pittsboro). Pittsboro will have two months to resubmit a program for staff's review, and staff will provide recommendations to the Commission within two months of that submission. Therefore, Pittsboro's program should come before the Commission again at its September meeting. In addition, the Director was given authority to approve any subsequent program amendments that these approved communities may propose from time to time. The Director would forward unique future program revisions of concern to the Water Quality Committee for review. As specified in their ordinances, local programs will begin implementing the new development requirements immediately following ordinance adoption, with adoption dates scheduled during August 2012.

July 15, 2012

Stephen T. Smith

Stephen T. Smith
Chair, Environmental Management Commission

ENVIRONMENTAL MANAGEMENT COMMISSION

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

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Chairman
Charles Peterson
Vice Chairman

Beverly Eaves Perdue, Governor
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Benne Hutson
Steve Keen
Ernest W. Larkin
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Jeffrey V. Morse
Darryl D. Moss
David B. Peden
Amy E. Pickle
Dickson Phillips III
Clyde E. Smith Jr.
Steve W. Tedder

October 15, 2012

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FROM: Stephen T. Smith, Chair, Environmental Management Commission

RE: EMC Quarterly Report

Enclosed please find the quarterly report of the Environmental Management Commission on its operations, activities, programs and progress for the period June 1, 2012 to August 31, 2012.

Attachment

cc: Robin Smith, Assistant Secretary for Environment, NCDENR
Chuck Wakild, Director, DWQ, NCDENR
Dexter Matthews, Director, DWM, NCDENR
Sheila Holman, Director, DAQ, NCDENR
Kari Barsness, Director, LIA, NCDENR
Mariah Matheson, Research Division, NC General Assembly
Kristin Walker, Fiscal Research Division, NC General Assembly
Lanier McRee, Fiscal Research Division, NC General Assembly

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
QUARTERLY REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION

Covering the period June 1, 2012 to August 31, 2012

Per the requirements of G.S. 143B-282(b), the Environmental Management Commission (EMC) is submitting this quarterly report covering the period of June 1, 2012 to August 31, 2012 on the EMC's operations, activities, programs and progress.

I. Nutrient Control Strategies Sections 2, 3, and 4 of Session Law 2005-190 (as amended by SL 2006-259 and SL 2009-486)

Nutrient Control Criteria – Section 2(b)

Per Section 2(b), the EMC continues to assess and identify nutrient control strategies and criteria necessary to prevent excess nutrient loading in each drinking water supply reservoir. The EMC is currently considering modifications to the chlorophyll-a surface water quality standard. The Division of Water Quality (DWQ) and the EMC hosted a forum on nutrient enrichment on May 29th and 30th to provide state and local leaders, managers, and planners with a review of the science, regulatory issues, economic considerations, and other policy issues related to nutrient over-enrichment and options for avoiding impairment to our surface waters. A summary of those proceedings will be available by October 5, 2012.

Falls Lake - Section 3

The EMC is required to report its progress in assessing, identifying and adopting nutrient control strategies necessary to prevent excess nutrient loading in the Falls Lake water supply reservoir. Following an extensive stakeholder and rule-making process, permanent rules went into effect on January 15, 2011. Major actions are to be initiated over a 10-year first stage of implementation, with potential adaptive requirements under a second stage. Noteworthy groundwork occurred this quarter with the DWQ staff taking a nutrient accounting framework for stormwater nutrient loading from new and existing NCDOT development and non-DOT state & federal entities, including NCDOT existing development baseline load calculations to the EMC for approval in July. Staff with the Division of Soil and Water Conservation and DWQ also held four joint subcommittee meetings with members of the Falls and Jordan Watershed Oversight Committees (WOCs) to continue working on an agriculture nutrient trading framework in both watersheds.

Jordan Lake - Section 4 of Session Law 2005-190

Section 4 requires the EMC to report on progress toward developing and implementing a nutrient management strategy for reservoirs including Jordan Lake. The final set of Jordan Lake rules went into effect in August 2009. Timeframes for most new actions under the rules fall within nine years of the effective date of the rules. Actions taken this quarter to support implementation are described below.

The Nutrient Scientific Advisory Board, which assists in implementing existing development stormwater requirements, held three meetings and several subcommittee meetings. The Board developed an annual progress report that was presented to the Secretary of DENR in July 2012. The Board is also assisting DWQ in assigning existing development load reduction goals to jurisdictions and state and federal entities in the watershed by 2014. The Board and staff are negotiating a scope of work with a consultant to assist with development of the load reduction goals. Session Laws 2012-200 and 201 became effective and delayed the implementation of local Jordan New Development Programs until August 2014; however, several local governments are proceeding with local program adoption and implementation. Soil and Water Conservation districts continue to collect data for agriculture accounting in the watershed. The Jordan Watershed Oversight Committee, which administers requirements of the Jordan agriculture rule, will present accounting findings to the WQC in November 2012.

II. EMC Rulemaking Approvals

No rules were approved during this quarter.

III. Other EMC Actions

Approved the Final Savannah, Hiwassee and Little Tennessee River Basinwide Water Quality Plans

The Commission approved the Savannah, Hiwassee and Little Tennessee River Basin Plan which was developed per G.S. 143-215.8B to guide DWQ's actions in these river basins over the next five years and beyond utilizing existing rules and policies.

Approved the use of the Falls/Jordan Stormwater Accounting Tool for non-DOT state and federal entities; the NCDOT modified accounting tool for both Falls and Jordan watersheds; and approved the NCDOT baseline nutrient loads for Falls Lake watershed

The Falls and Jordan Lake watershed stormwater rules for state & federal entities, 15A NCAC 2B .0281 and 15A NCAC 2B .0271, respectively, called on DWQ to submit a nutrient accounting framework to the EMC for approval. The framework includes a tool that will allow subject parties to account for loading from new and existing developed lands and loading changes due to BMP implementation.

DWQ proposed to use the Falls Lake and Jordan Lake Stormwater Accounting Tool approved by the EMC in March 2011 for non-DOT state and federal entities and a modified version of the tool developed through collaboration with NCDOT and North Carolina State University for use on NCDOT development. As a part of the accounting framework, baseline nutrient loads for NCDOT roadways and industrial facilities, per the Falls watershed stormwater rule, will be developed using stormwater runoff nutrient load characterization data collected through the NPDES Research Program under NCS0000250 Permit Part II Section G. In accordance with these requirements, the DWQ and NCDOT developed an approach for calculating baseline nutrient loads for NCDOT in the Falls Lake watershed.

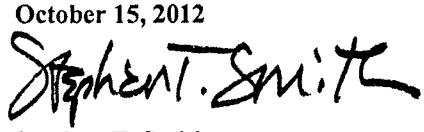
Approved the Request to Proceed to Notice and Public Hearing with the Proposed Consolidated Buffer Mitigation Rules

DWQ proposed to consolidate several Riparian Buffer Mitigation Rules (15A NCAC 02B.0242, .0244, .0260, .0268, .0609 and .0252) into one Riparian Buffer Mitigation Rule (0295). The purpose of this consolidation is to make these rules easier to use and also to comply with requirements in Session Law 2009-337. Included in this consolidation of existing rules are new rules addressing flexible mitigation options as required by the North Carolina General Statute 143-214.20. The Public Hearings are expected to be held sometime in the last quarter of 2012.

Postponed Decision on Statewide Mercury TMDL and Wastewater Permitting Strategy

The Division of Water Quality developed a statewide mercury total maximum daily load (TMDL) consistent with Section 303(d) of the federal Clean Water Act. The Division also developed a strategy for implementing the wastewater requirements of the TMDL. The NC Department of Health and Human Services issued a statewide consumption advisory for fish high in mercury in 2008. The TMDL is needed to address impairment of fish consumption uses in NC waters. It quantifies loads from in-state and out-of-state atmospheric and water-related sources, and provides an aggregate statewide wasteload. The wastewater strategy describes how the wasteload will be allocated in individual NPDES permits. After lengthy discussion the EMC decided to postpone a vote until September on the TMDL and Wastewater Permitting Strategy.

October 15, 2012



Stephen T. Smith
Chair, Environmental Management Commission

Susan Phillips (Rep. Samuelson)

[redacted]m: Susan Phillips (Rep. Samuelson)
[redacted]ent: Monday, October 22, 2012 10:01 AM
To: Susan Phillips (Rep. Samuelson)
Subject: FW: questions from Thursday, Oct 11th ERC meeting
Attachments: Yadkin-Pee Dee IntegratedReport2012 p 38.pdf; Nutrient Forum Speaker list Sept2012.xlsx; Nutrient Forum Final Agenda 2012.pdf

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From: Steve Smith [mailto:smith@mspraleigh.com]
Sent: Friday, October 12, 2012 9:18 AM
To: Jeffrey Hudson (Research)
Subject: questions from yesterday's ERC meeting

Here are the materials requested of me at yesterday's ERC meeting.

- Basinwide plans for all N.C. river basins can be found at: http://portal.ncdenr.org/web/wq/ps/bpu/basin

- This is the link to the basin plan chapter that includes Badin Lake, but there isn't a specific reference to the relevant stream segment in this last basinwide plan, because this basinwide plan was not done by stream segments http://portal.ncdenr.org/c/document_library/get_file?uuid=d0013aa5-55b0-4c7e-84f7-bf11d5c13bfe&groupId=38364

  Therefore, I have included below some information from DENR's 2012 Integrated Report (Water Quality Assessment) for the Badin area:
  - YADKIN RIVER AU# 12-(124.5)d flows through Badin Dam/Narrows Dam to Yadkin River AU# 12-(136.3)
    As reported in the 2012 Integrated Report AU# 12-(124.5)d is Impaired for Fish Consumption for standard violations of PCBs. This assessment unit covers 6,847 acres of Badin Lake, which have WS-IV,B;CA classifications.

  - Up river AU# 12-(124.5)c is also classified as WS-IV,B;CA and covers 7,938 acres of Tuckertown Reservoir, this portion is Not Rated b/c of potential standard violations for Copper, low DO and Chlorophyll a.

  - The reach below the dam is not monitored by DWQ. AU# 12-(136.3)

  - All of this information is in the 2012 Integrated Report (which is not yet online), so I had page 38 of it scanned and attached it.

- I've also attached copies of the agenda and list of speakers for the Nutrient Forum.

[redacted]st regards,
Steve

Stephen T. Smith

NORTH CAROLINA FORUM ON NUTRIENT OVER-ENRICHMENT
AGENDA
Sheraton Imperial Hotel & Convention Center
Durham, NC
May 29 - 30, 2012

Tuesday, May 29

7:30 am	Registration and Breakfast
8:30 am	Richard B. Whisnant, JD, UNC Institute of Government Forum, Moderator Dee Freeman, Secretary, North Carolina Department of Environment and Natural Resources
8:50 am	**Challenge to the Forum Speakers, Panelists and Audience** Charles Peterson, Ph. D, Vice Chairman Environmental Management Commission Distinguished Professor, UNC Institute of Marine Sciences
9:00am	**EPA's Perspective on Nutrient Management** Ellen Gilinsky, Ph.D., Senior Policy Advisor, EPA Office of Water (HQ)
9:20am	**Successful Development/Application of Nutrient Sediment Enrichment Criteria Driving Chesapeake Bay Restoration – 25 Years of Experience** Rich Batiuk, EPA Chesapeake Bay Program
9:40am	**Nutrient Management in North Carolina: The Path to Here** Richard "Rich" Gannon, NC DENR DWQ
10:00am	**Forum Panel Q&A*** Panelists: Jacqueline A. Jarrell, PE – Environmental Management Div. Superintendent, Charlotte Mecklenburg Utilities Grady McCallie – NC Conservation Network Stephen T. Smith – Chairman, Environmental Management Commission Darryl D. Moss – Mayor, City of Creedmoor, Environmental Management Commission
10:30am	Break
10:45am	**Nutrients and Lakes: Conditions and Issues to Consider When Setting Standards** Ken Wagner, Ph.D., Water Resource Services, Inc.
11:05am	**A Framework for Developing Regional Nutrient Criteria for Wadeable Streams** Ryan King, Ph.D., Baylor University
11:25am	**Controlling Nutrient Over-Enrichment along the Freshwater to Marine Continuum...** Hans W. Paerl, Ph.D., UNC-Chapel Hill
11:45am	**Forum Panel Q&A***
12:15 pm	Lunch with speaker **Satellite and Aircraft Sensors - Mapping and Modeling of Water Quality Parameters and Nutrient Loads Using Remote Sensing** Siamak Khorram, Ph.D. – NCSU & University of California at Berkeley
1:45pm	**Approaches to Nutrient Criteria Development: Principle Approaches and Case Studies** Michael Paul, Ph.D., Tetra Tech, Inc. RTP
2:05pm	**Numeric Nutrient Water Quality Criteria: Reconciling Weight of Evidence with Independent Application** Robert Miltner, Ph.D., Ohio EPA
2:25pm	**Maine's Approach to Integrate Causal and Response Indicators of Eutrophication** Thomas J. Danielson, Ph.D., Maine DEP
2:45pm	**Forum Panel Q&A***
3:15pm	Break
3:30pm	**Florida Numeric Nutrient Criteria: Lessons Learned – Policy and Process** Scott I. McClelland, CDM Smith Florida
4:00pm	**Florida Numeric Nutrient Criteria: Lessons Learned - Technical Issues** Douglas J. Durbin, Ph.D., Cardno Entrix Florida
4:30pm	**Forum Panel Q&A***
5:00pm	***Reception – with heavy hors d'oeuvres and cash bar***

** Questions from the audience should be written on the index cards that have been provided and sent to the wall end of the row during the presentations.*

NORTH CAROLINA FORUM ON NUTRIENT OVER-ENRICHMENT
AGENDA

Wednesday, May 30

8:00am	**Registration and Continental breakfast**
9:00am	**Accounting for Agricultural Progress at the Watershed Scale** Deanna Osmond, Ph.D., NCSU
9:20am	**Aquifer Hydraulics and the Multi-Decade Legacy of Non-Point Source Pollution** David P. Genereux, Ph.D., WRRI, NCSU
9:40am	**Stormwater Retrofitting in Urban Areas: Getting the Most Bang for Your Buck** Kathy DeBusk, PE, NCSU
10:00am	**Forum Panel Q&A***
10:30am	Break
10:45am	**Nutrient Regulation for Rivers and Lakes: Getting it Right Post USEPA Science Advisory Board Review** John Hall, J.D., Ph.D., Hall & Associates
11:05am	**Drinking Water Sources – Taste & Odor Plus??** Michael E. Richardson, Cape Fear Public Utility Authority
11:25am	**Sustainability and Ancillary Environmental Benefits of Nutrient Control Practices** Clifton F. Bell, PE, PG, Brown & Caldwell
11:45am	**Forum Panel Q&A***
12:15pm	Lunch with speaker **An Approach to Nutrient Removal Based on Practical Technologies, Their Reliability, and Economics** S. Joh Kang, Ph.D., PE, Tetra Tech Inc.
1:45pm	**Assessing Costs and Benefits Related to Implementing Nutrient Criteria to Improve and Maintain Water Quality** Mary Jo Kealy, Ph.D., CH2MHILL Delaware
2:05pm	**Who Cares if the Water isn't Fishable, Swimmable or Drinkable? The Consequences of Inaction** Bill Holman, Ph.D., Duke University
2:25pm	**Nutrient Control Funding Options for Local Governments** Jeffery Hughes, UNC-Chapel Hill
2:45pm	**Forum Panel Q&A***
3:15pm	Panel Summary --Panel Members provide their conclusions and path forward suggestions
3:45pm	Adjourn

Refreshments will be served at all breaks

* *Questions from the audience should be written on the index cards that have been provided and sent to the wall end of the row during the presentations.*

Title	First Name	MI	Last Name	Title	Company Name	Address	City, State, Zip
Mr.	Richard		Batiuk	Associate Director for Science	U.S. EPA Chesapeake Bay Program Annapolis City Marina	410 Severn Avenue - Suite 109	Annapolis, MD 21403
Mr.	Clifton	F	Bell		Brown and Caldwell	301 Bendix Road, Ste. 400	Virginia Beach, VA 23452
Mr.	Thomas	J.	Danielson	Senior Biologist	Maine Department of Environmental Protection	17 State House Station	Augusta, Maine 04351
Ms.	Kathy	M.	DeBusk	Graduate Research Assistant	Biological and Agricultural Engineering, NCSU	Box 7625	Raleigh, NC 27695
Dr.	Douglas	J.	Durbin	Technical Director and Senior Manager	Cardno ENTRIX	3905 Crescent Park Drive	Riverview, FL 33578
Mr.	Dee		Freeman	Secretary	NC Department of Environment and Natural Resources	1601 Mail Service Center	Raleigh, NC 27699-1601
Mr.	Rich		Gannon	Environmental Program Supervisor	NC Division of Water Quality	1617 Mail Service Center	Raleigh, NC 27699-1617
Dr.	David	P.	Genereux	Professor MEAS	Assoc Director for Research, WRRI	NCSU Campus Box 8208 1127 Jordan Hall	Raleigh, NC 27695
Dr.	Ellen		Gilinsky	Senior Policy Advisor	U.S. Environmental Protection Agency Office of Water Ariel Rios Building	1200 Pennsylvania Ave. NW Mail Code 4101M	Washington, DC 20460
Mr.	John		Hall		Hall & Associates	1620 I Street, NW, Suite 701	Washington, DC 20006
Dr.	Bill		Holman	Director of State Policy	Nicholas Institute for Environmental Solutions, Duke University	2117 Campus Drive, Box 90335	Durham, NC 27708
Dr.	Jeffery	A.	Hughes	Director	Environmental Finance Center	Knapp-Sanders Building Campus Box 3330 UNC-Chapel Hill	Chapel Hill, NC 27599-3330
Ms.	Jacqueline	A.	Jarrell	Env. Management Division Supt.	Charlotte Mecklenburg Utilities	4222 Westmont Drive	Charlotte, NC 28217
Dr.	Joh		Kang		Tetra Tech Inc.	710 Avis Drive	Ann Arbor, MI 48408
Dr.	Mary Jo		Kealy	Senior Principal Technologist	211 N Pembrey Drive	CH2MHILL	Wilmington, DE 19803
Dr.	Siamak		Khorram	Professor of Remote Sensing and Image Processing	NCSU & Univ. California at Berkeley		
Dr.	Ryan	S	King	Associate Professor	Department of Biology, Baylor University	One Bear Place	Waco TX 76798-7388
Mr.	Grady		McCallie	Policy Director	NC Conservation Network	19 E. Martin Street, Suite 300	Raleigh, NC 27601
Mr.	Scott	I.	McClelland	Vice President	CDM Smith	1715 N Westshore Blvd Suite 875	Tampa, Florida 33607
Dr.	Robert		Miltner	Environmental Scientist	Ohio Environmental Protection Agency	4675 Homer-Ohio Lane	Groveport, Ohio 43125
Mayor	Darryl	D.	Moss	Mayor City of Creedmoor		P. O. Box 794	Creedmoor, NC 27522
Dr.	Deanna	L.	Osmond	Professor, Dept. Extension Leader	Department of Soil Science North Carolina State University	Box 7619	Raleigh, NC 27695-7619
Dr.	Hans		Paerl	Kenan Professor UNC IMS		3431 Arendell Street	Morehead City, NC 28557
Dr.	Michael	J.	Paul	Senior Scientist Center for Ecological Sciences	Tetra Tech Inc.	P.O. BOX 14409 Cape Fear Bldg Suite 105 3200 Chapel Hill-Nelson Hwy	RTP, NC 27709
Dr.	Charles	H.	Peterson	Distinguished Professor UNC IMS	Vice Chairman Env. Mgmt. Commission	3431 Arendell Street	Morehead City, NC 28557
Mr.	Michael	E.	Richardson	Superintendent of Drinking Water	Cape Fear Public Utility Authority	235 Government Center Drive	Wilmington, NC 28403
Mr.	Stephen	T.	Smith	Chairman Env Mgmt Commission	McMillan & Smith	205 W. Martin Street P. O. Box 150	Raleigh, NC 27602
Mr.	Ken		Wagner	President	Water Resource Services, Inc.	144 Crane Hill Road	Wibraham, MA 01095-1815
Dr.	Richard	B.	Whisnant	Professor of Public Law and Government	Institute of Government	Knapp-Sanders Building Campus Box 3330 UNC-Chapel Hill	Chapel Hill, NC 27599-3330

Yadkin-Pee Dee River Basin | 10-digit Watershed 0304010306 | Yadkin River

> AU Number	Name	Description	Length or Area	Units	Classification	Category

Category	Rating	Use	Reason for Rating	Parameter	Year

Yadkin-Pee Dee River Basin | 10-digit Watershed 0304010306 | Yadkin River

12-digit Subwatershed 030401030605 | Beaverdam Creek-Yadkin Rive

> AU Number	Name	Description	Length or Area	Units	Classification	Category
> 12-(124.5)c	**YADKIN RIVER (including Tuckertown Lake, Badin Lake)**	From the mouth of Cabin Creek to Badin Lake	7,937.8	FW Acres	WS-IV,B;CA	3

Category	Rating	Use	Reason for Rating	Parameter	Year
3a	Not Rated	Aquatic Life	Potential Standards Viol	Copper	
3a	Not Rated	Aquatic Life	Potential Standards Viol	Low Dissolved Oxygen	
3a	Not Rated	Aquatic Life	Potential Standards Viol	Chlorophyll a	

> AU Number	Name	Description	Length or Area	Units	Classification	Category
> 12-(124.5)d	**YADKIN RIVER (including Tuckertown Lake, Badin Lake)**	Badin Lake	6,847.0	FW Acres	WS-IV,B;CA	5

Category	Rating	Use	Reason for Rating	Parameter	Year
1	Supporting	Water Supply	No Criteria Exceeded	Water Quality Standards Water Supply	
5	Impaired	Fish Consumption	Standard Violation	PCB	2010

> AU Number	Name	Description	Length or Area	Units	Classification	Category
> 13-(1)	**PEE DEE RIVER (including Lake Tillery below normal operating levels)**	From mouth of Uwharrie River to Norwood Dam	4,845.5	FW Acres	WS-IV,B;CA	2

Category	Rating	Use	Reason for Rating	Parameter	Year
1	Supporting	Aquatic Life	No Criteria Exceeded	Water Quality Standards Aquatic Life	
1	Supporting	Recreation	No Criteria Exceeded	Fecal Coliform (recreation)	
1	Supporting	Water Supply	No Criteria Exceeded	Water Quality Standards Water Supply	

12-digit Subwatershed 030401030602 | Cabin Creek

2012 Annual Water Supply Report

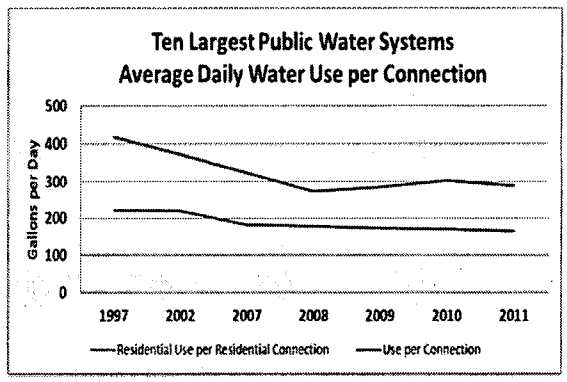
Environmental Review Commission
October 11, 2012

Overview

- Water Efficiency
- Hydrologic Modeling
- Ecological Flows
- Assistance to Local Governments
- Storage Alternatives
- Coastal Plain Aquifers
- Shale Gas & Water Quantity
- Drought Response Preparation
- Pending Interbasin Transfers
- Protecting Drinking Water Sources

NC Water Efficiency BMP Manual

- Development mandated under NC Session Law 2011- 374
- Manual completed
- Incorporating public comment
- Includes info on 14 different water efficiency BMPs
- Technical training for local govts this fall
- Local govts must begin incorporating long-term water reduction plans into Local Water Supply Plans in 2013
- Draft manual may be found at: www.ncwater.org



Water Systems in NC with > 30% Unaccounted for Water*

- 37 systems with 31 – 50% unaccounted for water

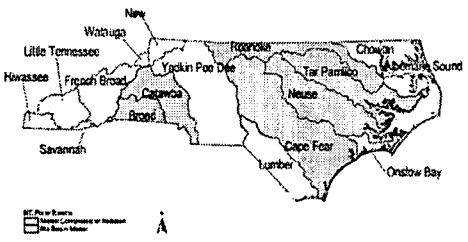
*Based on Local Water Supply Plan data

Hydrologic Model Development Status*

River Basin	Status	Type of Model
Neuse	Completed	OASIS
Cape Fear	Completed	OASIS
Tar-Pamlico	Completed	OASIS
Broad	Completed	OASIS
Roanoke	Underway	OASIS
Catawba	Underway	CHEOPS
Yadkin – Pee Dee	Sched. for 2013	OASIS
Lumber	Sched. for 2013	OASIS
French Broad / Watauga	Sched. For 2014	OASIS
Little Tenn. / Hiwassee	Sched. For 2014	OASIS

*Mandated under Session Law 2010-143

North Carolina River Basin Model Development Status



Broad, Cape Fear, Neuse, Tar-Pam, Roanoke:
Systems Unable to Meet **Average Daily Demand** in 2050 by 1 MGD or Greater with Existing Infrastructure and Allocations*

- Raleigh
- South Granville Water & Sewer Authority

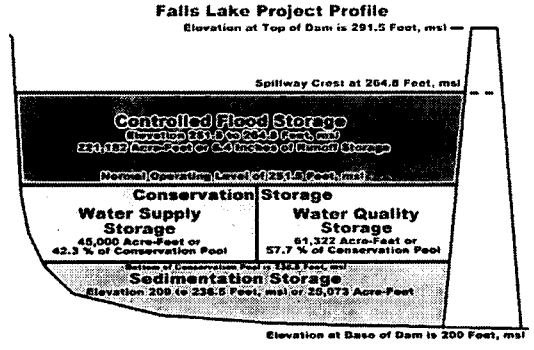
*Notes:
1. Models do not yet include ecological flows.
2. Does not include systems that need an approved IBT Certificate to meet 2050 demands.

Ecological Flows

- Science Advisory Board continues to meet
- Report expected sometime in 2013
- DWR will begin incorporating ecological flows into hydrologic models in 2014
- Analysis will help determine possible conflicts between ecological flows / off-stream needs
- Potential policy decisions

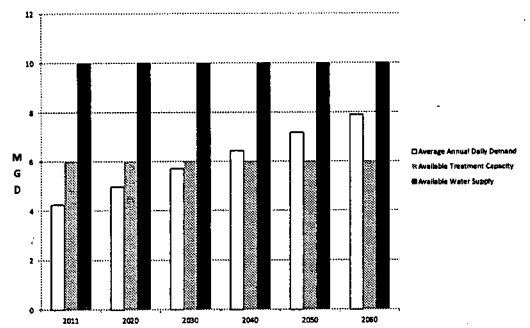
DWR Assistance to Water Systems Under SL 2011-374 (HB 609)

Water System	Type of Water Supply Project
Cape Fear Public Utility Authority & Lower Cape Fear Water & Sewer Auth.	Unknown. Additional water needed to meet maximum day demands.
Raleigh	Reallocation of Falls Lake
Greenville Utilities	Surface water intake / modeling
Cleveland County	New reservoir on First Broad
Moore County	Surface water intake/Existing reservoir
Marshall	New groundwater wells

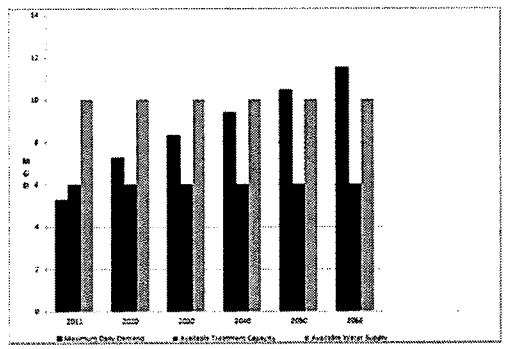


Increasing Water Supply Storage in North Carolina

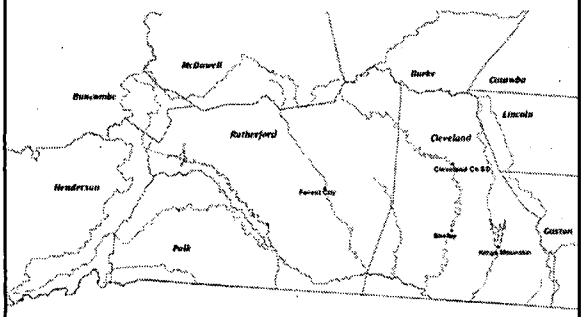
Projected Average Annual Demand for Cleveland County Water
(based on most recent local water supply plan data)



Maximum Daily Demands, Current Treatment Capacity and Current Available Water Supply for Cleveland County Water

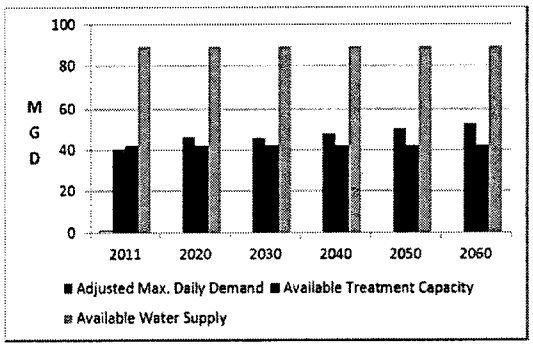


Water Systems in Proximity to Cleveland County in the Broad River Basin



Federal authorities will consider water availability in nearby supplies when making a decision regarding the "need" for a new mainstem reservoir.

Adjusted Maximum Daily Demands through 2060, Current Treatment Capacities and Current Available Water Supplies for the Broad River Water Authority, City of Kings Mountain, City of Shelby, Cleveland County Water, and Town of Forest City



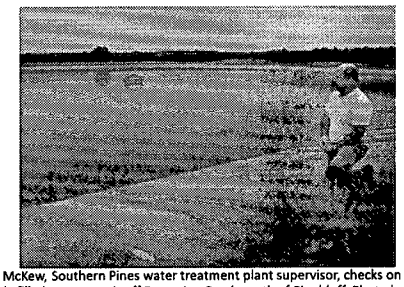
New Water Supply Options

Listed by Difficulty in Permitting

1. Interconnection w/ another system
2. Reallocation of Existing Storage*
   Quarry with High Flow Skimming*
3. Surface Water Intake
4. Non-mainstem (Offline) Reservoir*
5. New Mainstem Reservoir*

*These options increase available storage

Southern Pines Reservoir Full, Securing Future Water Needs - Southern Pines Pilot



David McKew, Southern Pines water treatment plant supervisor, checks on the recently filled-up reservoir off Drowning Creek south of Pinebluff. Photo by Glenn Sides.

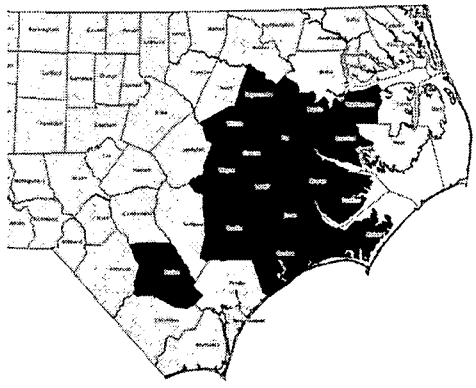
New Water Supply Options

Listed by Difficulty in Permitting

1. Interconnection w/ another system
2. Reallocation of Existing Storage*
   Quarry with High Flow Skimming*
3. Surface Water Intake
4. Non-mainstem (Offline) Reservoir*
5. New Mainstem Reservoir*

*These options increase available storage

Coastal Plain Aquifer Update

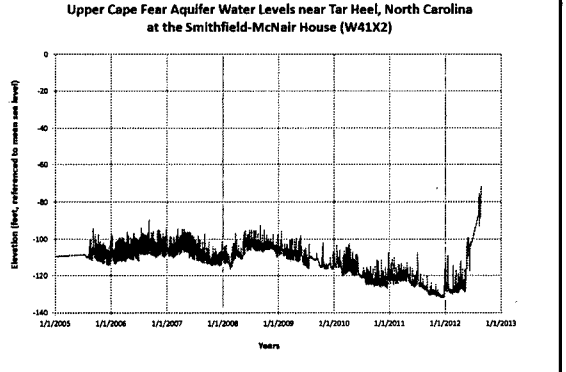


Coastal Plain Hydrogeology

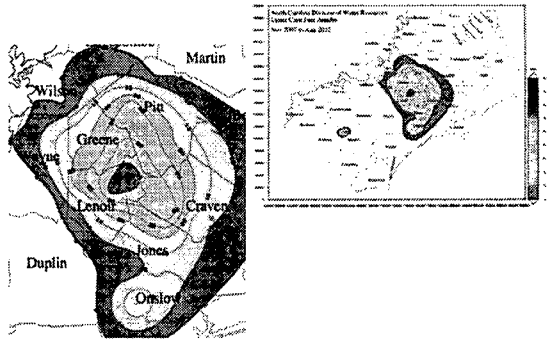


Bladen Bluffs Surface Water Plant

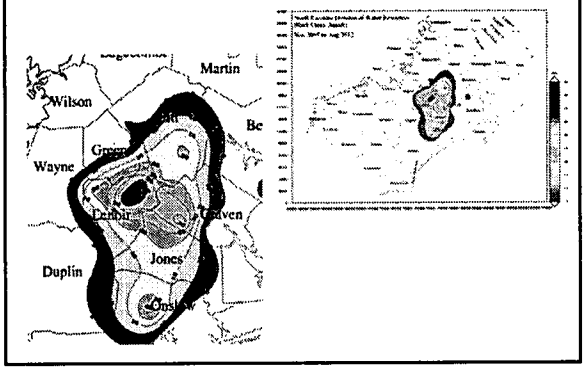
- 2004: DWR report to EMC on ground water in the Upper Cape Fear aquifer in Bladen County
- Dewatering and salt water intrusion problems
- Report initiated cooperative efforts between Lumber River COG, Smithfield Packing Plant in Bladen County, & the Lower Cape Fear WASA
- New Bladen Bluffs surface water treatment plant is operational in 2012 using Cape Fear river water
- Upper Cape Fear aquifer water levels are recovering



Upper Cape Fear Aquifer Recovery



Black Creek Aquifer Recovery



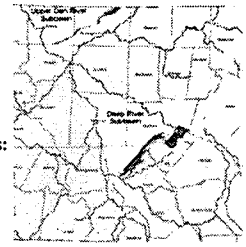
Onslow County Area Issue

- Major water suppliers: Camp Lejeune, ONWASA, and Jacksonville
- CCPCUA rules reqd ONWASA and Jax to use new well fields in same aquifer that USMC uses – the Castle Hayne
- DWR is carefully tracking water withdrawals and monitoring water levels
- Capacity of the Castle Hayne aquifer is being tested and permits may need to be altered to protect the aquifer's viability

Shale Gas & Water Quantity

Key Points:

- 3-5 MGD per gas well (accumulated over several days or weeks)
- Water needed for limited times
- Unused capacity currently exists
- With limitations adequate water is available
- 20% of 7Q10 Flow
- 7Q10 of Deep River at Moncure: 13.3 mgd
- 20% of 7Q10: 2.7 mgd



To protect water resources and other users:

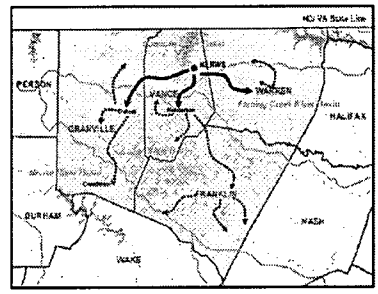
- Water Management Plan
  - Withdrawal Source
  - Withdrawal Magnitude
  - Withdrawal Timing
  - Wastewater return locations
- Limit cumulative surface water withdrawals to 20% of 7Q10 flow
- Prohibit SW withdrawals during droughts & low flows
- Encourage use of reclaimed water
- Explore unused capacity of existing intakes

Drought Preparedness

- Minimal impacts from drought in 2012
- 540 out of 551 Water Shortage Response Plans completed and in place
- Working with 11 remaining systems

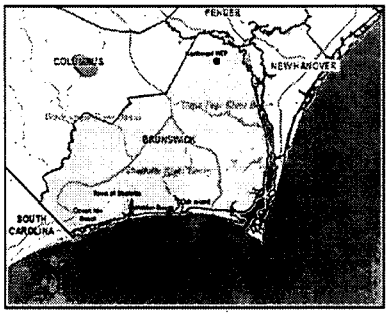
Pending Interbasin Transfers (IBTs)

Proposed Kerr Lake Regional Water System IBT



Request to transfer approximately 26 million gallons/day out of Roanoke Basin

Proposed Brunswick County IBT



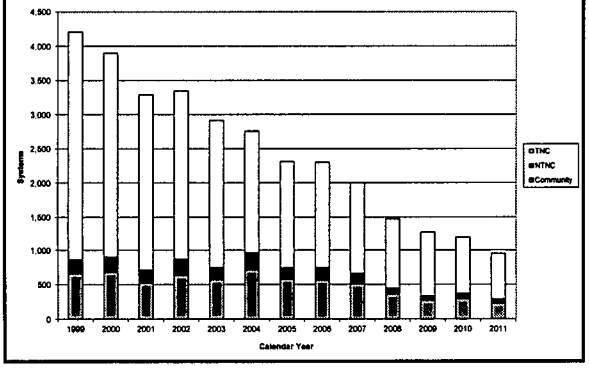
Request to transfer approx. 18 million gallons/day from Cape Fear to Shallotte & transfer approx. 1 million gallon/day from Cape Fear to Waccamaw River Basin

NC Source Water Protection Program

NC's only statewide program focused solely on the protection of public drinking water

- Non-regulatory approach
- Technical assessments for 9000+ sources
- Interagency partnerships to prioritize funding
- Incentives to encourage proactive action
- Outreach and assistance to local communities

The Number of Water Systems with Monitoring/Reporting Violations: 1999 to 2011



Contact Information

Tom Reeder
Director, NC Division of Water Resources
919-707-9027
tom.reeder@ncdenr.gov

DWR
Division of Water Resources

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

JOINT LEGISLATIVE COMMISSION ON GOVERNMENTAL OPERATIONS
The Honorable Thom Tillis, Co-Chair
The Honorable Phil Berger, Co-Chair

FROM: Kari Barsness KKB
Director of Legislative and Intergovernmental Affairs

SUBJECT: State Water Supply Plan Report

DATE: July 30, 2012

Pursuant to General Statue 143-355(n), the Division of Water Resources shall submit to the Environmental Review Commission and the Joint Legislative Commission on Governmental Operations a report on the North Carolina State Water Supply Plan by September 1st of each year. Please consider the State Water Supply Plan Report attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 707-8618 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Assistant Secretary Robin Smith
Tom Reeder, Director, Division of Water Resources
Kristin Walker, Fiscal Research Division
Lanier McRee, Fiscal Research Division
Mariah Matheson, Research Division

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-707-8600 \ Internet: http://portal.ncdenr.org

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North Carolina Department of Environment and Natural Resources

Division of Water Resources

STATUS REPORT TO THE GENERAL ASSEMBLY
ON
WATER SUPPLY PLANNING
AUG. 1, 2011 THROUGH JULY 31, 2012

Executive Summary

The primary mission of the N.C. Division of Water Resources (DWR) is to assure a sustainable water supply for the residents of North Carolina. To carry out this responsibility, the division administers several monitoring, planning and regulatory programs.

In partnership with the U.S. Geological Survey (USGS), the division monitors the availability of water across the state through a network of monitoring wells and stream gages. DWR monitors water withdrawals using data reported under mandatory registration and reporting programs. Additional information is received from annual water use reporting by those entities required to register their withdrawals and water systems required to submit a local water supply plan, as well as special data requests during drought conditions. Beginning in 2009, DWR also began receiving summaries of an annual survey of agricultural water users conducted by the N.C. Department of Agriculture and Consumer Services (DACS).

The division administers the local water supply planning program, which was established after serious droughts in the 1980s disrupted local water supplies. DWR provides assistance to community water systems with the preparation of their local water supply plans. The information contained in these local plans, combined with data from other sources, provides the water use information that is critical for the development of computer-based hydrologic models. Basin-specific hydrologic models simulate surface water volumes as water moves downstream. The models support the development of river basin water resource plans. The division is preparing long-term water resource plans for each of the state's 17 major river basins in partnership with local governments, water users and other stakeholders. The long-term water resources plans will provide valuable information for local and state decision makers for the preparation of drought response plans and the management of sustainable water supplies to support economic development, while maintaining environmental quality.

The division also monitors and regulates water withdrawals associated with the transfer of surface water between designated river basins and water use in designated capacity use areas. As staff to the Environmental Management Commission, DWR processes applications from water users that wish to transfer more than 2 million gallons per day of surface water between designated river basins and makes recommendations to the commission. DWR conducts evaluations of resource conditions, oversees rule development and issues water withdrawal permits in designated capacity use areas. In addition, DWR chairs the N.C. Drought Management Advisory Council, manages drought response activities and is the lead agency for the N.C. Department of Environment and Natural Resources for the relicensing of hydroelectric projects. All of these activities impact and are affected by water supply planning issues.

Overview

The N.C. Division of Water Resources is required by G.S. 143-355(n) to report by Sept. 1 of each year to the Environmental Review Commission and the Joint Legislative Commission on Governmental Operations on the development of the state water supply plan. The state water supply plan compiles the information and water use projections contained in the local water supply plans submitted under G.S. 143-355(l) together with data on water usage available from other sources. It identifies potential problems meeting expected water demands in order

to assure the availability of adequate supplies of water to protect the public health and support economic growth. These issues are addressed from a river basin perspective with potential conflicts and shortages identified using computer-based hydrologic models that simulate surface water availability within each basin. This report provides a summary of division activities that support water resources planning and the maintenance of sustainable water supplies for the citizens of North Carolina.

Highlights

During the period covered by this report, DWR:

- Added nine wells and four stations to the groundwater monitoring network;
- Managed 267 active groundwater withdrawal permits and registrations of 60 other water withdrawers in the Central Coastal Plain Capacity Use Area, which facilitated the continued recovery of the water level in these critical aquifers;
- Coordinated the Ecological Flow Science Advisory Board, which held eight meetings;
- Developed a river basin hydrologic model for the Broad River and Tar River basins. The Broad River model will be presented for approval to the EMC this fall followed by the Tar River model next spring;
- Developed a preliminary update of the river basin hydrologic models for the Cape Fear and Neuse River basins;
- Initiated a revision to the Roanoke River Basin hydrologic model;
- Collected annual water use data for 2011 from 515 water systems required to prepare a local plan and from 1,207 other registered water withdrawals;
- Continued to assist local water systems in preparing and revising their water shortage response plans to meet the minimum criteria set by legislation;
- Characterized water supply issues and threats related to climate variability as part of the department's climate change initiative;
- Developed draft water efficiency best management practices for community water systems as required by Section 3.4 of Session Law 2011-374;
- Began implementation of G.S. 143-355.7, which authorizes the division to assist local governments in the development of alternative water supply sources; and
- Evaluated the feasibility of meeting water needs of possible shale gas development in North Carolina.

Monitoring Water Resources

The division maintains groundwater and surface water monitoring networks directly, and in partnership, with federal agencies. The data from these networks provide essential information on the conditions of water resources throughout the state. North Carolina cooperates with the USGS to maintain stream gage sites with near-real time data collection capabilities. The division also maintains an extensive network of groundwater monitoring wells. More than two-thirds of these wells have data recorders that collect daily water level information that is collected and processed quarterly. Much of the groundwater monitoring and data collection focuses on improving the understanding of the complex aquifer structures in the Coastal Plain.

The ongoing support of the N.C. General Assembly has allowed the division to continue improving the data on aquifer conditions in the Coastal Plain by expanding the monitoring well network. Since 1998, DWR has added 175 wells at 51 monitoring stations in the Coastal Plain. To date, there are 314 active wells at 83 monitoring stations in the 15 counties in the Central Coastal Plain Capacity Use Area (CCPCUA). The monitoring well network provides vital data for evaluating aquifer conditions and the success of the Central Coastal Plain Capacity Use Area rules. The division will continue to expand the monitoring well network statewide, as funds permit, to improve data for groundwater management. Data on groundwater conditions are available on the division's website.

The division has joined with the State Climate Office at N.C. State University, the U.S. Army Corps of Engineers, the U.S. Geological Survey and other data collection agencies to develop a uniform database to store and disseminate water resources data. Water resource data are available on the division's website.

Monitoring Water Use

For almost two decades, North Carolina has required registration of large surface water and groundwater withdrawals. The division administers three programs that provide water use data: the water withdrawal registration program, the local water supply planning program and implementation of the CCPCUA rules. Outside of the CCPCUA, owners of agricultural operations must register their water use if the sum of withdrawals for their facilities is 1 million gallons, or more, on any day. During 2011, 26 owners of agricultural operations reported water use for 36 operations outside of the CCPCUA. Owners of non-agricultural operations must register their water use if the sum of withdrawals is 100,000 gallons, or more, on any day. During 2011, 278 owners of registered non-agricultural operations reported water use for 1,171 facilities and small community water systems. Registrations must be updated at least every five years. The 553 local government water systems and community water systems that regularly serve 1,000 or more service connections, or 3,000 or more individuals, meet the registration requirement by submitting a local water supply plan. The division received 2011 water use data from 515 of these water systems.

Rules governing water use during droughts, which became effective in 2007, require anyone who must register a water withdrawal to annually report water use data. Of the registered users not required to prepare a local water supply plan, DWR collected data on water usage in 2011 for 1,980 facilities and water systems. Water use data submitted directly to DWR are supplemented by survey data submitted to the DACS, which summarizes data by county and river basin for unregistered agricultural operations that withdraw 10,000 gallons of water, or more, per day. DACS's 2011 data summary is based on information submitted by 1,308 agricultural operations.

Local Water Supply Planning

After the serious droughts in the 1980s, the General Assembly enacted legislation to require water supply planning at the state and local levels. The intent of the action was to assure the availability of adequate supplies of good quality water to protect public health and to support economic growth. Units of local government that supply, or plan to supply, water to the

public and other large community water systems are required by G.S. 143-355(l) to develop local water supply plans. These local plans describe current water use and future water needs and identify the water system's expected future sources of water. The plans provide valuable information about how much water communities are using and how much they anticipate needing in the future. Information contained in the local plans supports local, regional and statewide water supply planning and is available on the division's website.

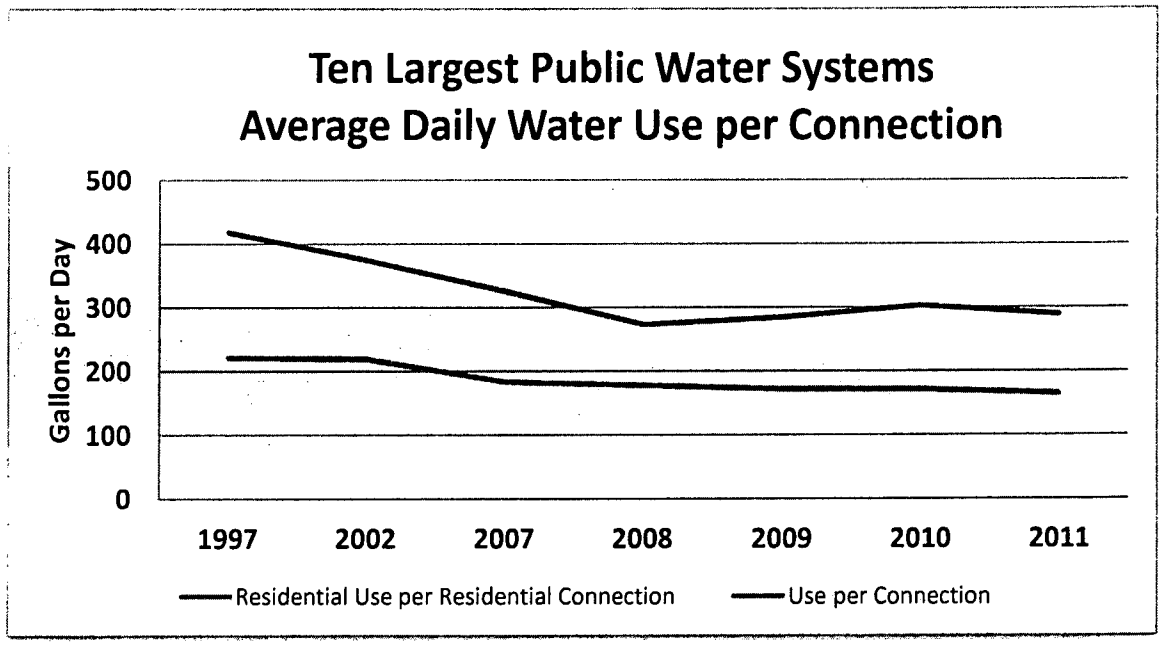
Local water supply plans are reviewed for internal consistency and consistency between interdependent water systems. Completed plans are to be adopted by the water system's local governing board and must be updated at least every five years. Passage of Session Law 2008-143 expanded DWR's plan review responsibility to include plan approval and also established approval criteria. The first set of plan updates to face approval review will be those based on 2012 water usage to be submitted in 2013. The department has developed approval criteria for these plans in consultation with representatives of local government water systems.

Session Law 2010-150 added a requirement that a local plan must be revised when a water system's foreseeable future water needs reaches 80 percent of its available supply, or when its seasonal demand exceeds 90 percent. A methodology to identify systems that meet these criteria has been added to the online submission program and guidelines to assist water systems in complying with these requirements have been prepared.

The number of water systems that are required to prepare a local plan varies as existing water systems merge and new ones are formed. Since the first round of local plans in 1992, DWR has received submissions from more than 660 planned and operating water systems. In 2011, 553 water systems met the criteria requiring them to develop a local water supply plan. Of these, 515 systems submitted annual water use figures for 2011.

Within the 10[1] largest water systems submitting a local water supply plan, water use per connection is showing a noticeable decline between 1997 and 2011. For all water systems, water use fluctuates from year-to-year due to weather conditions and the number of connections being served. As water utilities accommodate more customers, overall system water usage will go up. However, looking at water use per connection can indicate if, in general, customers are using less water to accomplish the desired tasks. The graph below shows a general decline in the average water use per connection for the 10 water utilities examined. This trend is also evident in some of the projections of future water needs being submitted in recent local plans compared to the projections presented in the 1997 and 2002 local water supply plans. In 2011, these 10 water systems served almost 3 million persons or about 30 percent of the state's residents.

[1] Based on the 2011 service populations reported in the local water supply plans, the 10 largest utilities are: Charlotte-Mecklenburg Utilities, City of Raleigh, City of Winston-Salem, City of Greensboro, City of Durham, Fayetteville PWC, Cape Fear Public Utility Authority-Wilmington, Town of Cary, Davidson Water Inc., and Onslow Water and Sewer Authority.



North Carolina Water Supply Planning

The N.C. General Assembly mandated the development of a North Carolina Water Supply Plan, or state plan, at the same time that it acted to require preparation of local water supply plans. The local water supply plans were intended, in part, to provide information necessary for an evaluation of potential water supply conflicts in the state plan. As mandated by law, the state plan summarizes information contained in the local water supply plans. The first version of the state plan was based on information from local plans submitted in the 1992, 1997 and 1999 water withdrawal registrations. It summarized water use by major river basin and identified areas of concern where water availability, or conflicts between users, could limit the ability to meet water demands. The analysis of potential limitations on the ability of water systems to satisfy expected demand was based primarily on the staff's understanding of expected population growth and general water availability. The N.C. Water Supply Plan is available on the division's website.

In the process of developing the state plan, the division's staff identified a need for more specific water availability information to inform the analysis. The division began work on computer-based hydrologic models that could simulate historical water resource conditions and characterize natural variations in water availability. The ability to identify when and where water demand may exceed available water resources provides valuable information to support sustainable water supply planning and effective drought response planning. Currently, the division uses computer models that simulate surface water availability in combination with water withdrawal data to provide a more reliable analysis of potential water supply conflicts in modeled river basins. The information presented in the N.C. Water Supply Plan will be updated as the river basin models and water resources plans are completed.

The current models still lack a major component that must be included in any comprehensive river basin model. To date, insufficient data and analysis exists to identify the volumes and

patterns of water flows needed to protect the ecological integrity of aquatic resources. General Statute 143-355(o), created in July 2010, supports the division's approach by mandating development of river basin hydrologic models. It also recognized the importance of addressing ecological flow needs in the hydrologic models and established a science advisory board to recommend methodologies to use. A summary of the board's work and information related to identification of ecological flows is available on the division's website. The board has met 13 times since its initial meeting in November 2010. Recommendations from the board are expected by late 2013.

Planning for Future Water Needs

The N.C. Division of Water Resources is developing a river basin water resources plan for each of the major river basins in the state to help assure the availability of adequate supplies of water in the future. These plans will support management of the state's river basins and provide reliable, quantitative tools to plan for sustainable water use and support objective management and regulatory decisions.

Data submitted to the division through the water supply planning program, the water withdrawal registration program, capacity use area reporting requirements and annual water use reporting provide critical information for the river basin planning program.

River basin water resources plans provide a basin analysis of estimated future water supply withdrawals using a computer-based hydrologic model that simulates water flow in a basin. The hydrologic model provides a tool to analyze the effects of future water withdrawals and wastewater discharges during the range of river flow variability that occurred in the historical record. By analyzing the water needs expected in 2050, and evaluating these future demands with respect to known flow variability, DWR is able to identify areas where supplies may not be adequate to meet projected demands, as well as when and where water use conflicts may develop. The river basin water resources plans and associated hydrologic models will provide the division, local governments and other water users a reliable, quantitative framework within which to plan for sustainable and cost-effective water sources to meet future needs.

The first of these plans was the Cape Fear River Basin Water Supply Plan, developed in 2002 as a tool for the analysis of allocations of water supply storage in B. Everett Jordan Reservoir. The prototype hydrologic model was updated with the technical and financial support of water users in the basin that recognized the value of the model as a water supply planning tool. The division developed a draft of an updated Cape Fear River Basin Water Supply Plan based on the updated model and water demand projections. A summary of the modeling results is available on the division's website. Before the updated plan was finalized, the division received a request to initiate a new review of allocations and options for utilizing the water supply storage in Jordan Lake reservoir from a group of Triangle communities. To support this effort, the Cape Fear and Neuse River hydrologic models were updated and merged to expedite the analysis of regional water supply management options. A meeting for interested parties to review the details of the revised model is scheduled for July 23, 2012. Information on the allocation requirements and the allocation process is available on the division's website.

In July 2010, the division released the Neuse River Basin Water Resources Plan showcasing a revised format intended to be the prototype for future basin plans. Water demand projections for 20 years and 40 years in the future were analyzed using the newly developed Neuse River Basin Hydrologic Model. The model includes a 76-year record of hydrologic conditions that includes high-flow and low-flow conditions, including several significant droughts and the drought of record for the basin. Hydrologic models for the Broad and Tar River basins have been completed and are undergoing final review. Water resources plans for the Broad River basin and the Tar-Pamlico River basin are being developed following the revised format.

As noted in previous reports, models were constructed for the Catawba and Yadkin River basins in conjunction with the relicensing of the hydropower projects on these rivers. The division worked closely with the electric utility companies and other interested parties in these basins to estimate long-term water supply needs that were then included in the modeling of proposed management options for the future. These analyses formed the basis of settlement agreements included with the hydropower license applications submitted to the Federal Energy Regulatory Commission (FERC).

The Catawba River Basin Water Supply Plan was based on this relicensing work. The water supply components of the modeling will be reviewed when FERC issues new licenses for the hydropower projects and finalizes the management schemes that will apply for the next several decades. In the interim, DWR staff will be meeting with large water users in the basin to discuss updating the hydrologic model and water resources plan for the basin. The model developed for relicensing will be reviewed and, if it can be revised to meet the criteria established by G. S. 143-355(o), it may become the basis of future water resource planning by the department.

The water use data submitted to DWR, combined with estimations of general water availability in the Triassic Geologic Basins, provided the foundation for the evaluation of the feasibility of meeting the water needs of proposed shale gas development in North Carolina.

The Division of Water Resources, and the Division of Water Quality (DWQ), are working together to coordinate basin planning efforts. DWQ has been developing basinwide water quality plans since the early 1990s. These plans provide valuable information on current water quality conditions and the areas that require additional management efforts to protect the water quality of the state's surface water resources. DWR's river basin water resources plans evaluate quantity-related aspects of surface water resources. They identify possible changes to stream flows as the population grows and water withdrawals increase in the future. Staff members of both divisions are exploring ways to combine the information from both sets of plans to improve overall water resource management. Both divisions are now using the same basin boundaries in their plans, which will make it easier for interested parties to compare the information in each plan.

Planning for Water Shortages

After the 1998-2002 drought, the General Assembly enacted new requirements for water shortage response planning. Session Law 2002-167 added requirements for water systems to describe in their local water supply plan how the water system will respond to drought and

other water shortage emergencies and continue to meet essential public water supply needs during the emergency. In 2007, the Environmental Management Commission adopted rules providing guidance on what information should be included in these water shortage response plans. Portions of Session Law 2008-143, codified in G.S. 143-355.2, strengthened the requirement for water shortage response plans and gave the department authority to approve or disapprove the plans. If a plan fails to include the required elements and is disapproved, the water system is required to implement the default water conservation measures set out in 15A NCAC 02E .0600 during extreme and exceptional drought conditions.

The division developed protocols for the review of water shortage response plans in consultation with representatives of local governments and water utilities. The division has notified 532 water utilities that their plans meet the minimum criteria established. The division staff continues to work with the remaining systems to develop plans that will satisfy the minimum criteria.

Water resources in the state are evaluated weekly by the N.C. Drought Management Advisory Council. The technical committee of the council regularly monitors water resource conditions and consults weekly with the authors of the U.S. Drought Monitor to ensure that the weekly U.S. Drought Monitor accurately portrays conditions in North Carolina. The results of these evaluations can be found on the N.C. Drought Management Advisory Council's website.

Relicensing

The Federal Energy Regulatory Commission (FERC) licenses non-federal hydroelectric generation projects on navigable waterways. Several existing hydroelectric projects in North Carolina have license applications pending before the commission: Duke Energy's Catawba-Wateree Hydro Project; Alcoa Power Generating Inc.'s Yadkin Project; and Progress Energy Carolinas Inc.'s Yadkin-Pee Dee River Project. The FERC has not issued new licenses for these projects and the applications remain under review. In some cases, the final decision on relicensing has been affected by legal challenges. Since the old licenses have expired, these projects are operating under annual licenses that extend the operating rules in the old licenses on a year-to-year basis. When new licenses are issued, the ecological flows and recreational opportunities included in the negotiated settlement agreements will be implemented. Since the last status report, the FERC issued new licenses for Duke Energy's Nantahala Area Projects.

Regulation

Central Coastal Plain Capacity Use Area (CCPCUA)

The Water Use Act of 1967 provides a mechanism for regulating water withdrawals in areas where water use must be coordinated to protect its availability. The law allows the Environmental Management Commission to designate a capacity use area if water use has increased to the extent that competing uses must be managed, or the ability of the water resource to replenish itself is threatened.

The CCPCUA is the only designated capacity use area in the state. The rules governing its management became effective Aug. 1, 2002. The rules, which were designed to gradually reduce groundwater withdrawals from the endangered Black Creek and Upper Cape Fear

aquifers, apply in 15 designated counties in the central Coastal Plain. The rules encourage development of alternative sustainable sources of water and regulate groundwater withdrawals through a permitting system. Anyone withdrawing more than 100,000 gallons a day of groundwater must apply for and receive a permit from DWR. Currently, 267 active permits for groundwater withdrawals exist in the CCPCUA. In addition, 60 registered water withdrawers do not need a permit but meet the reporting criteria because they withdraw between 10,000 and 100,000 gallons in a day. The division receives water use data from permit holders monthly and continually monitors conditions in the affected aquifers. Division staff regularly updates the Environmental Management Commission on the groundwater conditions in CCPCUA. Public water supply systems in the central Coastal Plain have made significant progress toward meeting reduction goals through development of regional water authorities and other water-sharing arrangements. Steps taken to reduce withdrawals from the depleted aquifers have already shown measurable benefits.

In September 2008, the Neuse Regional Water and Sewer Authority began providing water to member communities from a new surface water treatment plant on the Neuse River. The new facility made it possible for several communities that had previously relied on groundwater to switch to a surface water source. Start-up of the new facility has produced demonstrable improvements in regional groundwater levels. The division's monitoring indicates that groundwater levels have already risen by up to 40 feet in some areas. These improvements reinforce the premise of the capacity use area rules that by reducing groundwater withdrawals, aquifers will recover. Water level recoveries are also occurring near the cities of Jacksonville and New Bern, where well fields in the Castle Hayne aquifer and treatment plants came on-line in 2010. Additional information on the CCPCUA and the associated rules are available on the division's website.

Interbasin Transfer of Surface Water

Many communities in North Carolina are located on or near the high ground that creates the boundaries between river basins. Other communities are located in the headwaters of river basins where the water supply has proven to be inadequate as the economy and population of the state have grown. In these situations, municipal water systems may need to move water between river basins. Carefully regulated interbasin transfers can be the most practical, economical and environmentally sound way to provide water and sewer service to the residents of some communities and to support economic growth.

In 2007, the General Assembly made significant changes to the laws regulating surface water transfers. Session Law 2007-518 expanded public notice requirements for proposed interbasin transfers and specified additional criteria to be considered by the Environmental Management Commission in deciding whether to grant an interbasin transfer certificate. The changes became effective on Aug. 31, 2007.

Session Law 2010-155 changed the effective date of the 2007 requirements for some applicants. For proposed interbasin transfers intended to supplement groundwater supplies in the CCPCUA, the effective date was moved to Jan. 1, 2013. The 2010 legislation also created a new classification of an isolated river basin and made the 2007 requirements effective on July 1, 2020, for proposed transfers of surface water into those basins. Session Law 2011-298

provides an exemption to the requirement to obtain permission from the Environmental Management Commission for up to 8 million gallons per day of surface water transferred to supplement groundwater sources in the CCPCUA.

For purposes of the interbasin transfer laws, the 38 river basin boundaries are defined in G.S. 143-215.22G and delineated on an associated map. Session Law 2008-198 extended the basin lines for interstate river basins into neighboring states for the purposes of implementing the notice requirements set out in G.S. 143-215.22L. Details of the Interbasin Transfer Program and the statutory requirements are available on the division's website.

While many communities move water between river basins, most do not exceed the 2 million gallons per day threshold or the transfers were grandfathered in the legislation. Only five interbasin transfer certificates have been issued under G.S. 143-215.22I and the precursor legislation. Charlotte Mecklenburg Utilities has a certificate to transfer up to 33 million gallons per day from the Catawba River to the Rocky River basin. Cary, Apex, Morrisville and Wake County jointly hold a certificate to transfer up to 24 million gallons per day from the Haw River basin to the Neuse River basin. The Piedmont Triad Regional Water Authority has permission to transfer up to 30.5 million gallons per day from the Deep River to the Haw River and Yadkin River basins. The cities of Concord and Kannapolis received permission to transfer up to 10 million gallons per day from the Catawba River basin and 10 million gallons per day from the Yadkin River basin into the Rocky River basin. In November 2010, the Environmental Management Commission granted a certificate allowing transfers for Greenville, Farmville, Winterville and Greene County. The certificate, granted with conditions, allows transfers of up to 8.3 million gallons per day from the Tar River to the Contentnea Creek basin and 4 million gallons a day from the Tar River to the Neuse River basin. Details about the permitted transfers are available on the division's website.

The completion of the Neuse Regional Water and Sewer Authority's surface water treatment facilities on the Neuse River allowed member communities to reduce groundwater pumping within the CCPCUA. This change in water supplies would have required the authority to obtain an interbasin transfer certificate if they had not been granted relief by the General Assembly. As noted above, Session Law 2011-298 declared that an interbasin transfer certificate is not required for a transfer of surface water from one river basin to another river basin to supplement groundwater supplies in the 15 counties designated as the Central Coastal Plain Capacity Use Area. The exemption is valid until the cumulative amount of surface water transferred for this purpose exceeds 8 million gallons per day. After that threshold has been met, additional transfers will be required to get an interbasin transfer certificate.

Pending Interbasin Transfer Requests

The Kerr Lake Regional Water System has indicated that it intends to submit a petition requesting an increase in its existing 10 million gallons per day interbasin transfer, which is grandfathered in the statute. The regional water system is expected to request an increase to 24 million gallons per day. The system proposes to transfer water withdrawn from Kerr Lake on the Roanoke River to public water systems in the Tar, Neuse and Fishing Creek River basins. Preliminary work to support an Environmental Impact Study was reviewed by DWR and is currently being updated.

Brunswick County has submitted a notice of intent to apply for an increase of its grandfathered interbasin transfer capacity. The county currently receives surface water from the Cape Fear River through the Lower Cape Fear Water and Sewer Authority and provides treated water to customers in the Cape Fear, Waccamaw and Shallotte River basins. Preliminary discussions indicate Brunswick County will likely request an increase from the grandfathered transfer amount of 10.44 million gallons per day to 19.29 million gallons per day. A draft Environmental Impact Statement is expected sometime in 2012.

Implementation of Session Law 2011-374

Session Law 2011-374 assigned the department the task of developing a set of best management practices to assist communities in their efforts to improve water use efficiency and water conservation. Draft versions of these documents are currently undergoing departmental review and will be distributed for public review this summer.

This session law also expanded the responsibilities of the department with regards to identifying water supply needs and appropriate sources to meet those needs. It mandates that the department cooperate with units of local government on these projects based upon the execution of a formal agreement between the parties. In addition, it designates the department as the primary state agency to cooperate with other state and federal agencies in the planning and development of water supply sources and water storage projects in the state.
Local governments may request departmental assistance and enter into a negotiated agreement with the department. The department would then coordinate the work necessary to identify the preferred water supply alternatives adequate to meet the long-term needs documented in the local government's local water supply plan. The selected alternative sources must meet criteria specified in the legislation, as well as requirements specified in the North Carolina Environmental Policy Act (NCEPA). If the suite of options from which a preferred alternative will be chosen includes projects that will require federal approvals, then the alternatives analysis will have to satisfy the appropriate federal decision-making criteria.

A preferred alternative selected by the department will be binding on all state agencies and will be recognized by the Department of Administration as satisfying the requirements of the NCEPA and any other state permits requiring assessments of alternatives. The department may also assist the local government in the pursuit of the federal permits necessary to implement the preferred alternative. If the local government entity is a regional water system it will also have the option to request that the department become a co-applicant for all required federal approvals necessary to implement the preferred alternative.

The division has developed a preliminary protocol to implement the provisions of this legislation. DWR is currently working with the members of the Lower Cape Fear Water and Sewer Authority to determine a defensible assessment of future water needs.

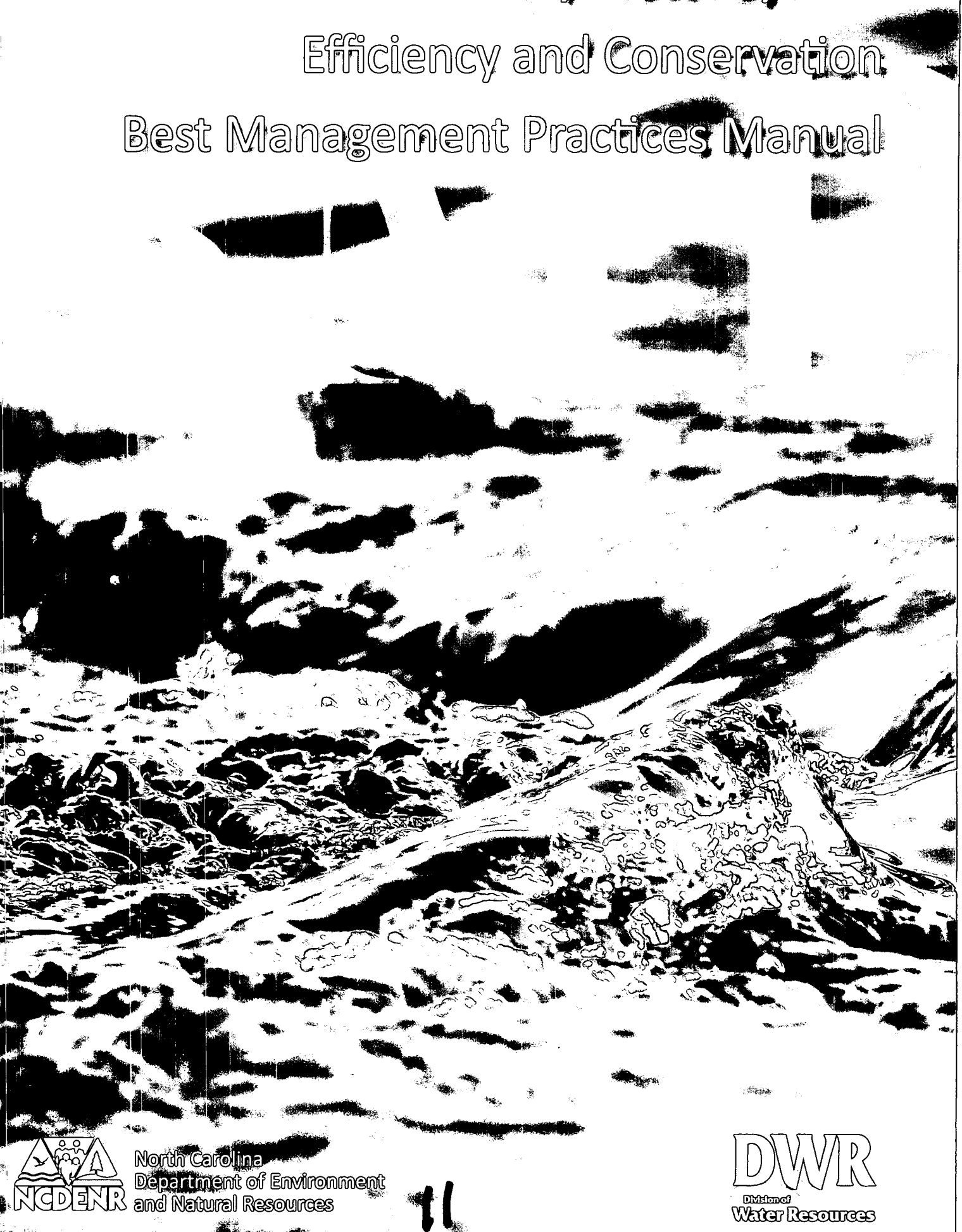
DWR has also conducted discussions about the options available under this legislation with Cleveland County Water and the Greenville Utility Commission. The division has also been in discussions with the city of Raleigh regarding alternatives to meet its future water needs.

Protecting Drinking Water Sources

Ensuring the reliability of public drinking water sources continues to be a major objective of DWR. Providing safe and sustainable drinking water not only requires access to dependable sources, but also involves proactive efforts to protect those sources. The Public Water Supply Section of DWR administers programs specifically designed to assist communities and establish drinking water protection.

Protecting public drinking water from potential contamination is often more cost-effective than treating a compromised source or identifying new sources. The N.C. Source Water Protection Program initiates strategies to: provide technical assistance to local governments and stakeholder groups, establish drinking water protection as a priority within other agencies and programs, and maintain web-based data and geographical information to identify threats and support decision-making. A variety of tools and outreach mechanisms are in place, including templates for local source water protection planning, a low interest loan program for land conservation, and the creation of a statewide collaborative to identify viable solutions to drinking water protection issues.

Community Water System Efficiency and Conservation Best Management Practices Manual



North Carolina
Department of Environment
and Natural Resources

DWR
Division of
Water Resources

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Acknowledgment

This manual was prepared with the assistance of many individuals from a variety of affiliations including: N.C. Department of Environment and Natural Resources, N.C. Rural Water Association, N.C. Environmental Finance Center, N.C. State University, and various North Carolina municipalities and water systems. The manual relies on concepts, presentation style and text found in the water efficiency best management practices manuals from other states. Much of the information contained in the manual was reprinted from the Texas Best Management Practices Guide with permission from the Texas Water Development Board. The N.C. Division of Water Resources would like to thank the Texas Water Development Board for granting permission to North Carolina to reprint this material.

The N.C. Division of Water Resources has taken extra effort to develop best management practices in order to enhance community water systems' water efficiency and conservation in this manual. However, it would not have been possible without the support and assistance of these individuals and organizations. We would like to extend our special thanks to all of the water systems that tested the Small Water System Water Audit and allowed us to use their current best management practices as case studies to better convey the goal of this manual to other communities.

Most of this material contained in the manual has been reworked extensively, and is difficult to reference precisely. Exact referencing has been attempted when possible, and those documents that have been used, in general, have been included in the reference list.

Introduction

In 2011, the North Carolina General Assembly passed Session Law 2011-374 (HB 609) Section 3.1. G.S. 143-355(l) that mandates improved efficiency of the use of North Carolina's water resources. As part of this mandate, water systems are required to complete and submit a local water supply plan to the N.C. Department of Natural Resources' Division of Water Resources that includes a plan for the reduction of long-term per capita demand for potable water.

The N.C. Department of Environment and Natural Resources was charged with providing statewide outreach and technical assistance as needed regarding water efficiency, which includes the development of best management practices for community water efficiency and conservation. The required best management practices include:

- Integrating water efficiency and conservation into local water supply plans.
- Conducting regular water audits to identify revenue and nonrevenue water and water losses.
- Adopting water loss abatement programs.
- Metering and sub-metering of existing residential and multi-unit residential, commercial and industrial complexes.
- Retrofitting residential fixtures (faucets, showerheads, toilets, etc.) and equipment (clothes washers, dishwashers, etc.) to make them more water efficient.
- Landscaping in a manner that conserves water and is regionally appropriate.
- Employing water reuse practices that include harvesting rainwater and using gray water.
- Pricing water to achieve comprehensive conservation and adopting full-cost accounting in line with the recommendation approved by the State Water Infrastructure Commission in November 2010.

In addition to developing these, the N.C. Division of Water Resources also included best management practices (BMPs) for:

- Water supply contracts between water systems selling water and those purchasing the water.
- A consumer education program that emphasizes the importance of water efficiency and conservation, including measures residential customers may implement to reduce water consumption. This BMP also serves to help water systems become eligible for state water infrastructure funds from the Drinking

Water State Revolving Fund, the Drinking Water Reserve, or any other grant or loan of funds allocated by the General Assembly that require incorporating consumer education as mandated by Section 3.2. G.S. 143-355.4(b).

- A school outreach and education program.

The purpose of this BMP manual is to assist water system managers in determining which BMPs would be most effective in reducing their long-term per capita demand for potable water. Although water systems are not required to implement any specific best management practice, there are several that are considered foundational to effective water efficiency plans. The most important is conducting regular water audits to identify revenue and nonrevenue water and water losses. As part of conducting these water audits, metering of all connections is essential to account for all water used. This data will be used as a baseline for comparison against future water use to determine increased efficiency. In addition, adopting leak detection and water loss abatement programs allows systems to act on the water audit information to reduce water loss and lost revenue.

The manual will outline several BMPs that have been successfully used in other water systems throughout North Carolina and the United States. Each BMP will contain the following components:

Applicability – The specific type of water system that could potentially benefit from the BMP is described, as are the general goals for water efficiency that the BMP addresses.

Description – This section provides an explanation of the specifics of the conservation measure(s) included in the BMP. The best available technology that is proven and cost effective is recommended. Often a best available technology may not yet be cost effective to be implemented by all water users. Highly efficient water conservation measures that will produce cost-effective results are mentioned.

Implementation – The basic steps to accomplish the BMP are described. If the description section includes more than one measure to complete the BMP, the implementation section will suggest necessary steps for achieving the water savings.

Schedule – In BMPs with multiple implementation steps, a recommended schedule for implementation is included. In general, planning, data gathering and evaluation steps should be accomplished within 12 months of adoption of a specific BMP.

Scope – For simpler BMPs, the scope is complete when the steps described in the implementation section have been achieved. For more complicated BMPs, the scope indicates the level of implementation necessary to consider the BMP complete. Where different levels of implementation or constraints are present, these are described.

Documentation – To track the progress of a BMP, the water system should collect certain data to document progress in implementing the BMP and evaluating actual water savings. This section identifies the recommended data.

Determination of Water Savings – This section specifies information necessary to calculate water savings from implementation of the BMP and may include statistical or mathematical formulas when appropriate.

Cost-Effectiveness – Basic costs of implementing the specific BMP are explained. Due to the wide variety in actual costs based upon the size and location of the program, ranges of costs are given where appropriate. In many cases, costs and expenses can be reduced or spread out when multiple BMPs are implemented. This section primarily serves to remind the users of costs to consider when performing a cost effectiveness analysis.

References – The BMP concludes with a listing of resources for additional information and contact information that can assist a water system in implementing the BMP.

Case Study Example – Each applicable BMP will be followed with an example of how that specific BMP has been successfully implemented by a water system.

As efficiency and conservation practices are implemented, new insights, technologically advances and information will become available. In addition, future technologies may improve water savings and reduce costs. Therefore, this manual should be seen as an evolving document that will be routinely updated and modified based on new information or user feedback. The N.C. Division of Water Resources encourages utility managers, efficiency/conservation specialists, planners, policy makers, and others to provide comments and feedback regarding this document, so it can be continually improved to better serve the water systems of North Carolina. For general comments or questions about this BMP Manual, please contact the manager of the Water Supply Planning Branch at 919-707-9024.

By completing the following BMPs, a water system can fulfill several requirements under Section 9 of the Drought Bill. Fulfilling these requirements also will help the water system be eligible for loans under the N.C. Division of Water Resources State Revolving Fund (DWRSRF). For details and further information, see http://www.ncwater.org/pws/srf/index.htm.

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Integrating Water Efficiency and Conservation into the Local Water Supply Plan

A local water supply plan (LWSP) is an assessment of a water system's current and future water needs and its ability to meet those needs. By understanding current and future needs, communities will be more equipped to manage water supplies and plan for water supply system improvements. As the population in North Carolina continues to increase, communities should make it a high priority to ensure that their customers are conservation minded and that their water system is operating at peak efficiency.

As a result of Session Law 2011-374, water systems must now include a plan to reduce long-term per capita water demand within their jurisdiction as part of their LWSP submittal. The N.C. Division of Water Resources has modified the LWSP to help water systems better track their long-term per capita water demand (see statement below). A chart in Section 5 of the LWSP will track long-term per capita water demand based on population and water demand projections entered by the user. By integrating this feature into the LWSP, systems can visually see how well their efficiency and conservation plans are working. Although there is no requirement to implement a specific BMP, water systems should consider implementing one or more of the water efficiency BMPs in this manual, or devise their own BMPs.

There are several BMPs considered fundamental to an effective water efficiency and conservation plan; however, conducting regular water audits would be the primary goal. Conducting an initial water audit allows a water system to determine baseline efficiencies and set realistic goals for improvement. Subsequent water audits enable a water system to measure milestone achievements and performance of BMPs implemented. Once a water system begins conducting water audits, evaluations can be performed to determine which BMPs are most effective at minimizing losses and reducing long-term per capita water demand.

Regardless of which BMPs a water system implements, there must be a reduction in the long-term per capita water demand. By implementing water efficiency and conservation practices, communities will be better positioned to meet the water supply needs of their customers.

The statement associated with the tracking chart in the LWSP reads as follows:
Your long-term water demand is xx per capita. What demand management practices do you plan to implement to reduce the per capita water demand (i.e. conduct regular water audits, implement a plumbing retrofit program, employ practices such as rainwater harvesting or reclaimed water?) If these practices are covered elsewhere in your plan, or there are no changes from a previous submittal, indicate where the practices are discussed or "No Changes" here.

For comments or questions regarding the Integrating Water Efficiency and Conservation into the Local Water Supply Plan, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9002.

Water Audit and Water Loss Abatement Program

Background

Every gallon of water lost or wasted due to system inefficiencies comes at an increasing cost to our communities and natural resources. Water audits and water loss abatement programs, more commonly known as water loss control programs, are valuable water management tools that can improve the efficiency of water production and delivery within all utilities in the state. It is important that water systems focus on the efficiency of their water supply operations while promoting water efficiency to their customers.

While not currently required by law, an essential tool to determine the efficiency of a water system is the water audit. Water audits are routinely used by utilities and have proven to be extremely beneficial in identifying areas for system improvement. These improvements have saved utilities money and provided customers with a more reliable water supply.

Different types of water audits are used to account for water activity in a system. Two options are the small system water audit, which was developed from the N.C. Division of Water Resources' local water supply plan (LWSP), and the American Water Works Association (AWWA) water loss control committee's free water audit.

The need for a standardized water audit was identified by AWWA, and through the efforts of its members, the free water audit has been made available by going to http://www.awwa.org/Resources/WaterLossControl.cfm?ItemNumber=4851.

While the AWWA water audit applies to all systems, smaller systems (less than 10,000 people) with more limited resources may wish to complete a slightly less comprehensive audit. The DWR has developed an alternative water audit to meet this need. A link to the free software will be on the division's website soon.

Information and technical assistance regarding the use of either of these audits can be found by going DWR's website at htttp://www.ncwater.org.

Applicability

A water audit is the first and most important best management practice a utility should implement, and lays the foundation for any water loss control program. This BMP is intended for all utilities and should be considered by a utility that:

- Needs to ensure its customers are fairly paying for the amount of water they are receiving.
- Needs to reduce water losses to ensure an adequate water supply for its customers.
- Would like to analyze the benefits of reducing non-revenue water.
- Does not conduct periodic water audits.

- Wants to determine how under-registering meters and unmetered users are impacting revenue.
- Does not have an active water loss control program.

To maximize the benefits of this BMP, the utility should use information from the water audit to implement effective water loss control strategies, revise meter testing and repair practices, reduce unauthorized water use, and improve accounting for authorized, un-billed water users.

Description

Water audits and water loss control programs are effective tools for the accounting and management of all water activity in a system. Performing a reliable water audit is the foundation of proper water resource management and loss control in water systems. Interest has increased in revising and developing water audit procedures to move away from simply considering "unaccounted for water" to a systematic methodology of accounting for all water activity. The structured approach of a water audit allows a utility to reliably track water uses and provide the information to address unnecessary water and revenue losses. The information that comes from a water audit is valuable in setting performance indicators and goals and to cost-effectively reduce water and revenue losses.

The Water Audit

A water audit accounts for water processed by a utility. The audit starts with an accurate accounting of raw, treated and distributed water. In an ideal water audit, the accuracy of the raw water meters and their output should be verified. This production is then compared to authorized consumption, both billed and un-billed, to determine water loss in the system. Water loss is divided into apparent water loss and real water loss.

- Apparent: Water loss due to meter accuracy error, data transfer errors between meter and archives, data analysis errors between archived data and data used for billing/water balance, and unauthorized consumption including theft. The cost of apparent water loss is estimated using a utility's retail water rates.

- Real: Water loss due to leakage and excess system pressure. Real water loss can be reduced by more efficient leakage management, improved response time to repair leaks, improved pressure management and level control, improved system maintenance, and replacement and rehabilitation. The cost of real water loss is estimated using marginal production costs, such as energy and chemicals needed to treat and deliver the water.

The water audit can also analyze billed versus metered consumption, large meter sizing, pump efficiency and economic leakage. The water audit may be expanded or

contracted depending on the size of the system. A utility that wants to improve water efficiency will conduct the water audit every year.

Completing the Water Audit

The water audit is basically accomplished in two steps:

1. Collect data to perform the water audit.
2. Data verification.

The collection of data for the water audit is called the top-down approach. The verification of the data used in the water audit is called the bottom-up approach. Both approaches must be completed in order to obtain reliable results from the water audit.

For the top-down approach, a desktop water audit using existing records and estimations is used to provide an overall picture of water losses. Small utilities that have an updated LWSP would benefit from using the small system water audit because they have already gathered a substantial portion of the data needed to complete the top-down approach. If a utility has conducted a water audit using the AWWA M36 Manual, they have already completed a more in-depth process. The small system water audit spreadsheet included in this BMP is only recommended for small utilities with populations below 10,000 people and who do not consider the AAWA water audit appropriate for their system.

Utilities that use the small system water audit should first print the definitions to become familiar with the terms needed to complete the water management table. The water management table is the main spreadsheet used to complete the audit. The spreadsheet only accepts values in the non-shaded cells. Cells with red triangles at the top right corner contain instructions. Use your cursor to roll over the red triangle to see the instruction box. The spreadsheet has three major components: water delivered by the utility, water used by customers and water and revenue loss experienced by the utility. Losses are calculated by the spreadsheet using tools such as the Meter Error Table, the Cost to Produce Calculator, and the Retail Charge Calculator that are included as tabs at the bottom of the spreadsheet.

Some records that will be needed to complete the top-down approach include:

- Quantity of water entering the system.
- Customer billing summaries.
- Leak repair summaries.
- Meter accuracy test.
- Meter change-out summary.
- Water production cost.
- Retail rates for water.
- Permitted fire hydrant use.
- Other records that may be kept on water theft and unmetered uses such as line

flushing or street cleaning.

Once the top-down approach is complete, the utility should have an overall picture of apparent and real losses along with its associated revenue loss.

For the bottom-up approach, the process of verifying the data used in the water audit is performed. This process involves a detailed investigation into actual policies and practices of the utility and includes activities such as:

- Checking water consumption values used in the billing system for different user types.
- Performing meter calibrations for a sample set of user types.
- Improving estimates of water consumed by un-billed (i.e. fire department, and public works department) and unauthorized users.
- Properly metering all authorized users.

This part of the audit is phased in during several years and will help shape the objectives and priorities to improve system efficiency.

Tools that can be useful to accomplish the bottom-up approach include models capable of analyzing system pressure, night and zonal flows, and the practice of keeping good leakage repair records that show lag times to repair a known leak. Once the bottom-up approach is complete, a utility should have enough reliable data to establish a baseline for water loss and revenue loss. From here, development or modification of the water loss control program can begin.

Water Loss Abatement Program

In order to reduce water loss and revenue loss due to leakage, a utility should develop and maintain a proactive water loss control program. The program should identify objectives based on results from the water audit, and set goals to reduce water and fiscal losses. A structured approach to leakage management has proven to be successful in limiting losses. Potential elements of an active water loss control program include:

- Conducting regular inspections and soundings of all water main fittings and connections.
- Using a water loss modeling program. A model can range from the AWWA M36 manual water audit spreadsheet to a commercially available statistical model.
- Metering and managing individual pressure zones.
- Establishing district metering areas (DMA) and measuring daily, weekly or monthly flows with portable or permanently installed metering equipment.
- Continuous or intermittent night-flow measurement.
- Installing temporary or permanent leak noise detectors and loggers.
- Reducing repair time on leaks. Long-running small-to-medium size leaks can result in the greatest volume of annual leakage.

- Controlling pressure just above the utility's standard-of-service level taking into account fire requirements, outdoor seasonal demand and requisite tank filling.
- Operating pressure zones based on topography.
- Limiting surges in pressure.
- Reducing pressure seasonally and/or where feasible to reduce loss from background leaks.

If a utility has not had regular leak surveys performed, it will probably need at least three leak surveys performed in consecutive years, or every other year for the following purposes:

- The first survey will uncover leaks that have been running for a long time.
- The second survey will uncover additional long-running leaks whose sounds were masked by larger nearby leaks.
- By the third survey, the level of new leaks should start to approximate the level of new reported leaks.

The utility should make every effort to inform customers when leaks exist on their side of the meter. If customer service line leaks are significant, a utility may want to consider making the repairs itself or shutting off the water until the leak is repaired.

The utility should also reduce apparent water loss because it will help increase revenue. The water loss control plan should address areas such as:

- Customer meter inaccuracy due to meter wear, malfunction or inappropriate size or type of the meter.
- Data transfer error when transferring customer metered consumption data into the billing system.
- Data analysis errors including poor estimates of un-metered or un-read accounts.
- Inaccurate accounting resulting in some accounts not being billed for water use.
- All forms of unauthorized consumption including meter or meter reading tampering, fire hydrant theft by contractors, unauthorized taps, and unauthorized restoration of water service cutoffs.
- Un-metered municipal connections. Every effort should be made to meter municipal connections in order to better account for water use. Spikes in water use should be reported to the user as this may indicate a leak.

Implementation

To successfully implement this BMP the utility should start by forming a working group from the following work areas: management, distribution, operations, production, customer service, finance and conservation. Each of these work areas has an essential role to play in implementing this BMP. Smaller utilities may have the same person doing several of these functions and therefore the working group may just be one or two individuals. The utility should also consider a public involvement process to solicit outside input and enhance public relations.

Initially, the working group should focus on gathering relevant data that will form the basis for completing the top-down approach. Some questions that should be addressed during this process are:

- Should we test production meters and how often? Commercial meters more than one inch? More than 2 inches?
- Should we replace or repair ⅝-inch and ¾-inch meters? How often?
- How inaccurate are the ⅝-inch and ¾ inch meters on average when they are replaced?
- How do we estimate total leakage from each leak based on the leakage flow-rate and duration of leakage from time reported to when it is fixed? How do we improve this process?
- How long does it take to repair leaks? How do we reduce this time? (The repair logs should be itemized by size of leak).
- How are customers encouraged to report leaks?
- Is our system for tracking the location of leaks and our method to calculate when it is cost-effective to replace mains and service lines adequate? How do we improve this process?
- Do meter readers inspect for and report leaks?
- How do we adjust consumption records when billing records are adjusted?
- How do we improve the optimal use of backwash and other in-plant water?
- How can we improve our theft reduction program?

Based on data collection efforts by the working group, the utility should have enough information to complete the top-down approach, as well as have identified ways to improve the information for future audits.

In conducting the bottom-up approach, the working group should focus on evaluating data handling procedures and performing field investigations to improve the quality of data used. Activities can include:

- Checking the customer billing system for water consumption data handling errors.
- Categorizing user types by meter size and consumption volume to check for gross irregularities in consumption.
- Performing meter accuracy tests for a sample set of various user types.
- Performing investigations to identify unauthorized water use among a sample set of various user types.

The top-down and bottom-up approaches to completing the water audit should be incorporated into the working members' job duties in order to maintain a set of good objectives and priorities to be performed through the water loss control program.

Schedule

To accomplish this BMP, the utility should:

- Gather the necessary data to complete the top-down approach, and perform the water audit within the first 12 months of implementing this BMP.
- Begin to make bottom-up refinements in the 12 months immediately following the completion of the top-down approach.
- Begin to develop or modify the water loss control program immediately after making refinements to the water audit. Development of the water loss control program can occur simultaneously while performing the bottom-up approach, but it is advised to obtain the best data reasonably possible before investing substantial capital to address efficiency objectives.

Scope

To accomplish this BMP, the utility should:

- Conduct periodic water audits in accordance with the methodology in this BMP manual, or use the AWWA M36 Manual.
- Develop and perform a proactive distribution system water loss control program and repair identified leaks.
- If the audit warrants, implement:
    - A pressure reduction strategy.
    - A program to reduce real losses including a leak detection and repair program.
    - A program to reduce apparent losses
- Advise customers when it appears that leaks exist on the customer's side of the meter and evaluate a program to repair these leaks.

Documentation

To track the progress of this BMP, the utility should maintain and have available the following documentation:

- A copy of each annual system water audit and a list of actions taken in response to the water loss control program.
- An annual leak detection and repair survey, including number and sizes of leaks repaired.
- The number of customer service line leaks identified and actions taken to repair these leaks.
- Pressure reduction actions taken.
- Updates made to the billing system.
- Meter change-out efforts.
- Theft elimination efforts.
- Annual revenue increase through water loss reduction efforts.

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Determination of Water Savings

Water savings is an integral part of the water audit process and should be revealed in a water audit report. Water savings should become evident after completing the water audit and execution of strategies in the water loss control program.

Cost-Effectiveness Considerations

Direct costs that should be considered in implementing this BMP include the initial and ongoing costs to perform and update the water audit and the water loss control program, capital costs for items such as leak detection equipment, billing software upgrades and repairs to the system. Utilities may wish to do the work in-house with technical staff or use outside consultants and contractors.

Cost benefit analysis should be incorporated as part of a utility's overall strategy to reduce losses and improve efficiency. The cost benefit analysis should measure the cost of system software and hardware improvements against anticipated benefits in revenue gain. The analysis should also predict when the utility should start seeing a return on investment from actions taken in the water loss control program.

For comments or questions regarding the Water Audit and Water Loss Abatement Program BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9021.

References

- Water Loss Control Manual, Julian Thornton, McGraw-Hill 2002.
- M36 Manual, AWWA, 2009 Third Edition.
- Applying Worldwide BMPs in Water Loss Control, AWWA Water Loss Control Committee, Journal AWWA, August 2003.
- Survey of State Agency Water Loss Reporting Practices: Final Report to the AWWA Technical and Education Council, Beecher Policy Research, 2002.
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Case Study

Case Study for a Water Audit and Water Loss Abatement Program

Mars Hill, North Carolina

Background

Mars Hill is a small town in the southern portion of Madison County, North Carolina. The town's history is closely linked to Mars Hill College, the oldest educational institution still in its original location in Western North Carolina. It is part of the Asheville Metropolitan Statistical Area.

The town's population was 1,869 according to the 2010 U.S. Census. According to the 2011 local water supply plan update, the town had a year-round service population of 3,150 people. The total included 1,200 students with 702 residential connections and 124 gallons per connection per day. Mars Hill withdraws their water supply from Popular Cove Reservoir on Big Laurel Creek.

In 2008, the North Carolina General Assembly provided N.C. Department of Environment and Natural Resources with funding for the most drought vulnerable water systems in order to have consultants complete a detailed water audit. Using the AWWA Water Loss Control Committee Free Water Audit, the consultant reported that Mars Hill's had an estimated non-revenue water loss of 38 percent.

In 2012, the town staff believed this figure was reduced to between 20 percent and 25 percent. The consultant provided several valuable recommendations and the town of Mars Hill wants to find and reduce non-revenue water loss and improve their water system in other ways as well.

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Water Audit Results

The main recommendation from the water audit was to continue to audit the water system in future years. Most of the original input data was taken from estimates, so metering all water use is a key to more accurate data. Other recommendations included:

- Troubleshoot billing software.
- Replace Mars Hill College (MHC) turbine meters with compound meters.
- Active leak detection for the cross-country transmission line.
- Replace MHC two 6-in. meters and 2-in. Madison Manor meter with compound auto-read meters.
- Active leak detection workshops for Mars Hill's staff.
- Develop Unidirectional Flushing Strategy and Valve Inventory/Exercise Program.
- Maintain Standardized Leak Detection/Repair and Flushing Records.

- Add distribution system personnel to support development of leak detection program.
- Develop meter inventory and systematic replacement of meters seven years or older with automatic read meters; target (minimum) between 5 percent and 10 percent replacement each year.
- Perform water rate study.

Actions that have been incorporated into the utility's standard operation procedures to date:

- The town has added distribution personnel, per the audit's recommendation.
- Successful efforts have been made to reconcile outliers and glitches in the software of the billing system.
- Missing accounts were restored and all are metered. Un-billed accounts are now in consumption records.
- The town is setting aside funds (approx. $16,000) to replace the Mars Hill College turbine meters with compound meters (Four 2-inch meters and one 6-inch meter).
- Prices are being obtained for replacement of two 6-inch meters.
- The 2-inch Madison Manor meter was replaced.
- The town and a consultant performed leak detection on their cross-country transmission line. Based on finding numerous problems, they are replacing this old, high-pressure line with 8-inch ductile iron in 2012.
- Active leak detection was performed on the Bailey Street line.
- Town staff was trained in active leak detection techniques.
- One of three recommended large pressure-release valves for pressure management will be installed with the new cross-country water line.
- Town staff are now keeping records on leak detection, repairs and flushing.
- Town staff regularly evaluate unauthorized consumption.
- A radio-read meter replacement program has begun; 107 out of 800 meters have been replaced thus far with the oldest meters being replaced first.
- The town did a water rate study and now has an increasing block rate. The town formerly had a fixed flat-rate for water rate structure.

Mars Hill has demonstrated that by undertaking a Water Audit and Water Loss Abatement BMP, they are progressing towards a more efficient water system. As Mars Hill continues to incorporate the recommendations of the water audit, they will continue to reduce their water losses and increase their revenues.

The town manager indicated he would be glad to discuss the Water Audit and Water Loss Abatement Program with anyone regarding the successes they have had in Mars Hill. Mr. Daryl Boone can be contacted at 828-689-2301.

Metering and Sub Metering of Existing Residential and Multi-unit Residential, Commercial and Industrial Complexes.

Applicability

This BMP is intended for all water systems ("utility") that do not have 100 percent metering of all customer connections. Improved accuracy of meters resulting from increased maintenance efforts should result in increased revenue and reduced water loss. Metering of all new customer connections and retrofitting existing connections are effective methods of accounting for all water usage by a utility within its service area.

Description

Proper installation of meters by size and type is essential for good utility management. Using and maintaining the most accurate meter for each type of connection will help to generate adequate revenues to cover the expenses of the utility, ensure equity among customers, reduce water waste and reduce flows to wastewater facilities. The American Water Works Association (AWWA) provides a number of helpful resources on metering. Those resources are listed in the reference section of this BMP.

The purpose of this BMP is to ensure that all aspects of meter installation, replacement testing and repair are managed optimally for water use efficiency.

For a utility's meter program to qualify as a BMP, which satisfies the requirements of Session Law 2011-374 it should include:

- Required metering of all connections.
- A policy for installation of adequate, proper-sized meters as determined by a customer's current water use patterns. The use of compound meters for multi-family ("MF") residential connections or other industrial and commercial accounts is recommended.
- Direct utility metering of each duplex, triplex, and four-plex unit whether each is on its own separate lot or whether there are multiple buildings on a single commercial lot.
- Meter all utility and publicly-owned facilities even if it the utility does not choose to bill these facilities. (This helps at the time of a water audit to account for all authorized uses).
- Use construction meters and access keys to account for water used in new construction.
- Require separate meters for all in-ground irrigation systems as per G.S. 143-355.4.
- Review capital recovery fees to determine whether the fees provide any disincentive to developers to use utility metering of apartment units.
- Annual testing and maintenance of all meters larger than 2 inches since a meter may under-register water use as the meter ages.
- Regular testing and evaluation of 5/8 inch and 3/4 inch meters which are 8 to 10

years in service to determine meter accuracy or a periodic, consistent replacement program based on the age of the meter or cumulative water volume through the meter. This program should be based on testing of meters at each utility to determine the optimal replacement/repair period since it depends on the quality of water and the average flow rate through the meter versus the capacity of the meter.

- An effective monthly meter-reading program where readings are not estimated except due to inoperable meters or extenuating circumstances. Broken meters should be fixed within seven days.
- An accounting of water savings and revenue gains through the implementation of the Meter Repair and Replacement Program.
- Meter hydrant flushing and fire use to the extent possible.

Implementation

To accomplish this BMP, the utility should do the following:

- Conduct a Meter Repair and Replacement Program following the methodology and frequency currently recommended in NCDENR Efficient Metering Recommendations Report, which can be found at http://www.ncwater.org/drought/Efficient_Metering.pdf and/or use current industry practices as specified by the AWWA.
- Develop and perform a proactive meter-testing program and repair identified meters.
- When meters are accurate but customer-side leaks exist, develop a protocol to notify customers. An option would be to repair leaks on the customer's side of the meter or to provide guidance to customers on how to find leaks.

Schedule

To accomplish this BMP, the utility should do the following:

- The utility should develop procedures for implementation of this BMP within the first twelve months. The procedures should include annual or more frequent benchmarks for measuring implementation.
- The program participant should consider procedures for and maintain a proactive Leak Detection and Repair Program (See, System Water Audit and Water Loss Abatement BMP) within the first 12 months.

Scope

To accomplish this BMP, the utility should do the following:

- Develop and implement a metering program based on current North Carolina standards, which can be found at http://www.ncwater.org/drought/Efficient_Metering.pdf and/or AWWA practices

and standards.

- Produce a regular schedule for the utility meter repair and replacement program based upon total water use and the consumption rates of utility accounts.
- Effectively reduce real water losses though implementation of the meter replacement and repair programs.

Documentation

To track the progress of this BMP, the utility should gather the following documentation:

- A copy of meter installation guidelines based upon customer usage levels.
- A copy of meter repair and replacement policy.
- Records of number and size of meters repaired annually.
- Report on the method used to determine meter replacement and testing intervals for each meter size.
- Estimate of water savings achieved through meter replacement and repair program.

Determination of Water Savings

Every year, the utility should estimate its annual water savings from the BMP. Savings can be estimated based upon a statistical sample analyzed as part of the meter-testing program. The utility should project potential savings into future years and also include water savings targets and goals in their projections.

Cost-Effectiveness

Capital costs to the utility in implementing this BMP may include the costs to install new meters and retrofit older ones, as well as one-time or periodic costs such as the purchase of meter testing and calibration equipment. A replacement meter can run from as little as $50 for a residential meter to several thousand for larger compound meters. Meter testing and repair can be done by utility staff or by contractors. Smaller utilities could consider sharing testing facilities. A typical residential meter test can be completed at a cost of between $15 and $50. Administrative costs may exist for additional tracking and monitoring of meter replacements.

For comments or questions regarding the Metering BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9021.

References

- Water Loss Control Manual, Julian Thornton, McGraw-Hill, 2002.
- M6 Water Meters – Selection, Installation, Testing and Maintenance, AWWA 4th Edition, 1999.
- Applying Worldwide BMPs in Water Loss Control, AWWA Water Loss Control Committee, Journal AWWA, August 2003.

- Recommendations for Efficient Metering of Water Use by Local Governments and Large Community Water Systems http://www.ncwater.org/drought/Efficient_Metering.pdf.
- NC DENR-DWR Public Water Supply http://www.ncwater.org/pws/srf/Pages/dwsrf_program.htm

Case Study Example

Case Study for Metering and Submetering

Brunswick County Utilities

Background

Brunswick County Utilities is located on the southeastern coast of North Carolina and serves a year-round population of 108,071 people based upon the 2010 Census and a seasonal population of 195,600 people. In 2011, the utility replaced 7,000 meters out of a total of 34,041 metered residential connections.

In 1999, Brunswick County had 10,249 retail water customers. With the explosive growth that has occurred in Brunswick County, the acquisition of one private water system, and assumption of operational responsibility and ownership of three municipal systems, the county has added approximately 24,000 customers to the water system in 13 years.

Brunswick County is the sixth largest county in terms of area in the state and provides retail service throughout the county. Due to the size of the county and complexity of reading each meter on a monthly basis, the county evaluated methods to remotely read its water meters. After a careful evaluation of all the alternatives, the county decided to implement an Advanced Meter Infrastructure (AMI) meter reading system. With the AMI meter reading system, all meters can be read at one central location. The county selected a vendor to supply the AMI system and decided to use its own crews to install the meters during a seven-year period. The replacement of the meters has been taking place for the last three years and will continue for several more years. A full-time in-house team of six staff members spends five days a week replacing meters.

One of the major advantages of the AMI meter reading system is its ability to detect leaks in a customer's system. Since the meters transmit readings back to the central office, constant usage through normal low-flow periods can be detected. The AMI meter reading system has software that will print a daily list of customers with possible leaks. This allows the billing supervisor to flag possible leaks and contact the customer to alert them about the potential problem.

The capital cost of the project is $8,733,076 and will be funded during a period of years. Since the meter change out is new and a new billing system is being used for the first time this year, no calculations of revenue saving have been made thus far.

Depending on the type of construction, the county allows developers of multi-family projects, including apartment and condominiums, to install either a gang meter assembly, where one meter serves each unit; or a master meter, where one meter serves all of the units. When a master meter is installed, the property owner or Property Owners' Association is responsible for the water charges. When a gang meter is installed, the property owner or renter of each unit is responsible for his or her usage.

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Retrofitting Residential Fixtures

Background

The typical U.S. family of four uses 260 gallons of water per day. In North Carolina, 70 percent is indoor water use (AWWA website). The average indoor use in a home with water efficient fixtures and appliances is approximately 35 percent less than without these fixtures (Vickers 15, 19). This marked savings makes residential indoor water efficiency an important component to consider in a comprehensive water efficiency plan. Residential indoor water efficiency programs have many aspects, with varying degrees of cost and water savings outlined in this best management practice. They include:

- Residential showerhead, aerator and toilet flapper retrofit programs;
- Residential toilet replacement programs; and
- Residential clothes washer incentive programs.

Retrofitting Residential Fixtures – Showerhead, Aerator and Toilet Flapper Programs

Applicability

A showerhead, aerator and toilet flapper retrofit program seeks to replace older, inefficient showerheads, aerators and toilet flappers with high quality, low-flow devices. These can either be installed directly by the utility, a contractor for the utility or by the resident or housing management directly.

This BMP is intended for a water system ("utility") that has at least 20 percent of the homes and apartment units it serves constructed prior to 1995, and for which there has not been an active retrofit program for efficient showerheads and aerators. This BMP is often implemented in conjunction with the Residential Ultra Low-flow Toilet Replacement BMP.

Description

Plumbing retrofits usually include showerheads and kitchen and bathroom faucet aerators, but may include toilet flappers as well. Four types of high quality, low-flow devices can be installed under this program: showerheads rated at 2.5 gallons per minute (gpm) or less, kitchen faucet aerators of 2.2 gpm or less, bathroom faucet aerators of 1.5 gpm or less, and if included, toilet flappers that flush the toilet at the designed flush volume for that toilet model.

Studies have shown that many 1.6 gallons per flush (gpf) toilets that have been installed are flushing at more than 1.6 gpf. If the utility decides to do a direct install of the low-flow devices, the flush volume of the 1.6 gpf should be checked and, if needed, adjusted to restore the flush volume to 1.6 gpf. If after the water level in the tank is adjusted and

the flush volume is still well above the 1.6 gpf, it is likely that the toilet originally had an early closure flapper. Using the model number on the inside of the toilet tank, determine which flapper is required. Replace the flapper or provide the customer with the replacement information for the flapper.

Implementation

1. The utility should identify the number of single-family (SF) and multi-family (MF) residences constructed prior to 1995. If there is no data of SF homes existing at the end of 1994 readily available, census data can be used. For the most accurate estimate of SF and MF residents, census data from 1990 and 2000, which includes the number of housing units by type, should be used. This data can be used to estimate SF units at the end of 1994, assuming linear growth.

To estimate the number of residences constructed prior to 1995

(# 2000 SF - # 1990 SF x 40%) + (# 1990 SF) = estimate of end of 1994 SF or detached units

Where # 2000 SF: Number of Single Family Homes or detached units in the 2000 Census data

Where # 1990 SF: Number of Single Family Homes or detached units in the 1990 Census data

The 40% assumes linear growth at 10 percent per year for four years.

A similar calculation can be done for multi-family residences, replacing SF with MF or attached units.

Source: Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide, November 2004.

2. Develop a plan for disseminating the retrofit kits, either by directly installing the plumbing devices in single-family homes and multi-family residential facilities, by providing the kits for installation with follow-up inspections, or by distribution directly to customers with no follow-up.
3. If doing a direct install program, include a program to restore the flush volume of 1.6 gpf toilets to the design flush volume, if feasible.
4. After determining the potential number of participants, begin distribution to customers. See *Table A: Distribution Methods, Potential Participation Rates, and Approximate Costs for Plumbing Fixtures* for more information on various aspects of different distribution methods.

Table A: Distribution Methods, Potential Participation Rates, and Approximate Costs for Plumbing Retrofit Kit Programs

Kit Distribution Method*	Description	Pros	Cons	Potential Customer † Participation Rates	Approximate Cost ‡ of Program Per Household
Door to Door Canvass	Retrofit kits are delivered directly to households for installation by residents. Follow-up canvassing by trained technicians encourages or assists residents with installation.	High participation rates reported by targeted customers who respond to telephone surveys	Discrepancy between customer-reported installation rates; not all customers who receive a kit can be certain to install it.	50-75%	$13-$20
Direct Installation	Trained technicians are hired to install fixtures directly in homes, helping to ensure that the devices are installed correctly and not wasted. This method is often combined with other indoor and outdoor water-use audit.	Perhaps the most reliable installation technique for achieving water savings with retrofit devices because it is verified by installers; particularly effective for multifamily dwellings where users may not be motivated to install devices themselves	Usually the most expensive installation method.	40-60%	$17-$30
Mass Mailing	Kits are mailed directly to all customers or targeted customers for installation by residents.	Low-cost delivery method gets kit directly to customers who return cards requesting mail-out kit.	No direct contact with customer installation unless they request help of information; not all customers who receive a kit can be certain to install it.	15-60%	$10-$15
Depot Pickup	Customers are notified of depot locations, such as public buildings, libraries, and schools, where they can pick up the free kits.	Low administrative costs and responsibility	May attract only customers who are motivated to pick up a kit; it cannot be assumed that all customers who pick up kits will install the devices.	5-40%	$8-$13
Rebate	Utility provides rebates to customers who install a low-volume showerhead (and possibly other devices or fixtures).	Reward for customers who install conservation devices	May attract only customers who are motivated to install devices; rebate application process may be time-consuming and expensive for both program sponsor and customer without significant water savings if participation rate is low.	5-30%	$15-$20
Kit Requests	Water utility or sponsoring agency offers kits to customers who request them. Kits can be customized for residents' needs.	Minimal program design, management, and administrative responsibilities for program sponsor.	Not all customers who request a kit can be certain to install it. Verifying installation is difficult.	Poor	$7-$12

* Assumes each delivery method provides the same type of kit: two toilet displacement devices, two 2.5 gpm showerheads, two faucet aerators, toilet leak-detection tablets, and water conservation information booklet.

† Range shown is possible but not certain depending on a particular program's design, implementation, and targeted base.

‡ Includes approximate cost of kit and delivery method; actual costs vary according to unit price per kit and program-specific costs for promotion, contract labor, postage, printing,

Schedule

Based on the approach(es) selected, the following schedule should be followed:

1. Direct Install and Kit Distribution Approach
   In the first 12 months: Plan a program including stakeholder meetings as needed. Locate plumbing contractors or retrofit companies who may be interested in bidding on the program. Determine a plan for educating homeowners, apartment owners and managers, plumbers and realtors about this program. Solicit bids and initiate the program. Include inspections by utility personnel, or a third party, to verify the plumbing devices installation. Each year, 10 percent of eligible single-family homes and 10 percent of eligible multi-family units should be retrofitted to maintain program development. Continue the program until 50 percent of eligible single-family houses and multi-family units are retrofitted.

2. Direct Giveaway of Kits by Customer Request, Targeted Giveaways and/or General Public Outreach Events
   In the first 12 months: Plan a program to target general distribution of the retrofit kits to neighborhoods of single-family and multi-family residences that were built before 1995. For information on strategies for retrofit kit distribution directly to customers, see the table above. For years 2-5, continue with the distribution of the retrofit kits.

Scope

To accomplish this BMP, the utility should:

- Develop and implement a plan to distribute or directly install high quality, efficient plumbing devices to single-family and multi-family units constructed prior to 1995.
- Implement the distribution or installation programs to achieve retrofits on at least 10 percent of eligible single-family units and 10 percent of eligible multi-family units each year. Utilities with more than 200,000 connections should retrofit at least 20,000 eligible homes and units each year.
- Within five years of implementing this program, retrofit at least 50 percent of eligible single-family houses and multi-family units with the specified devices. For utilities with more than 200,000 connections, at least 100,000 eligible homes and units should be retrofitted within five years.

Documentation

To track the progress of this BMP, the utility should gather:

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- An inventory of the number of single-family and multi-family buildings prior to 1995, which are targeted by this BMP.
- For each year of implementation, maintain records of the number of single-family and multi-family units retrofitted;
- For each year of implementation, maintain records of the number of showerheads, bathroom faucet aerators, kitchen faucet aerators and toilet flappers (by category) installed in single-family and multi-family units;
- If kits are given directly to customers without follow-up installation verification, the utility should maintain records of the number and type of plumbing devices distributed.

Determination of Water Savings

Calculate water savings as follows:

Water Savings = Number of Devices Retrofitted x Device Savings

- Device Savings may be found in Table B: Retrofit Device Savings Table
- Number of Devices Retrofitted = 1.0 x Number Devices Installed (when using Direct Installation Approach) OR
- Number of Devices Retrofitted = 0.3 x Number of Devices Installed (when using Kit Distribution Directly to the Customer Approach)

Source: Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide, November 2004.

Table B: Retrofit Device Savings Table

Device	**Initial Savings** (gallons per day or gpd per device	**Device Life Span** (Savings)
Showerheads and Faucet Aerators	5.5 gpd	Permanent*
Toilet Flapper	Up to 12.8 gpd **	Five years

Notes:
(*) The actual device life span is five to 15 years; the savings are permanent because inefficient equipment can no longer be purchased. In 1992, Congress passed the Energy Policy Act of 1992 which, among other things, mandated maximum flow rates for toilets, urinals, showerheads, and faucets.

(**) Residential End Use Study 5 average for toilet leakage was 9.5 gpcd, which can be translated to gpd per toilet by multiplying by average household size (2.7) and dividing by average number of bathrooms (2) Per single-family house. The utility should try to estimate actual savings based on measured leakage rate. (9.5gpcd x 2.7) / 2=12.8 gpd per toilet
Source: Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide, November 2004.

The showerheads and faucet aerators should result in 5.5 gallons per day savings for between five years and 15 years. If the toilet flapper program is also used, then approximately up to 12.8 gallons per day could be saved for around five years.

Cost-Effectiveness

The significant expenses associated with this BMP will be the costs of purchasing the devices, the distribution costs and administrative costs. Usually contractors have been hired to conduct kit installation and door-to-door distribution programs. Labor costs are usually bid based on a unit cost per showerhead, aerator or flapper installed or per kit delivered. Labor costs exist for utility staff to bid the project, oversee the contractor, and conduct spot inspections of the contractors' work.

Utility staff often run programs where customers pick up the kits. Labor costs range from $10 to $30 per single-family customer for showerhead and aerator installation and an additional $5 to $20 per toilet replacement. Multi-family residences will usually have their own staff for installation.

High-quality showerheads purchased in bulk are available starting at less than $2 each with aerators costing less than $1 each. Flappers range in cost from $3 to $10. When choosing between models of equipment that have varying degrees of water efficiency, only the incremental cost of the more water efficient should be compared with the benefits to the utility in order to determine the maximum water efficiency benefit.

Administration of the program can be conducted by utility staff or contracted out. If a utility chooses to implement the ordinance approach there may be costs for inspections in order to verify installation and discourage fraud. Marketing and outreach costs may range from $5 to $10 per single-family customer. Administrative and overhead costs range from 10 to 20 percent of labor costs. If this program is combined with the Residential Ultra Low-flow Toilet Replacement BMP, there should be efficiencies in these costs. If the distribution of kits through public outreach events is the sole option undertaken, then only the costs of the devices, staff time, and cost of attending the event would be incurred.

For inclusive overall costs per household, please see *Table A: Distribution Methods, Potential Participation Rates, and Approximate Costs for Plumbing Fixtures.*
For comments or questions regarding the Retrofitting Residential Fixtures BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9009.

References

- Handbook of Water Use and Conservation, Amy Vickers, Waterplow Press, May 2001.
- Tampa Bay Water Potable Water Conservation BMPs, January 2010.
- Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide, November 2004.
- Legislative Report – Recommendations for Water Efficiency Standards for Water Using Fixtures in Residential and Commercial Buildings, NCDENR, January 2009. http://portal.ncdenr.org/c/document_library/get_file?uuid=5cddf8ca-cf3d-41f3-a84f-6e4985ba1f43&groupId=38322

Case Study Example

Case Study for Retrofitting Residential Fixtures Program

The average indoor use in a home with water efficient fixtures and appliances is approximately 35 percent less than without these fixtures (Vickers 15, 19). Many water systems choose to work with residential customers as part of their water reduction efforts to bring these water savings to the residents and the water system. Methods for delivering these services, however, vary depending on the staff and funds available.

Direct Installation

In 2007 and 2008, Raleigh, N.C. experienced a drought of record. The city responded by developing a conservation plan that included retrofitting residential fixtures such as showerheads, as well as offering rebates for the purchase of High Efficiency Toilets (HETs). As part of that program, the city recognized that many low-income families and were living in rented, water-inefficient housing. Because traditional rebate programs do not take into account the burden that overhead costs have on low-income communities and renters, a different approach was needed to reach those audiences.

The City of Raleigh Public Utilities Department partnered with the Raleigh Housing Authority and AmeriCorps VISTA members to design a program that would tackle the issues of these community members, while creating a high return on investment (ROI) for the participants. This comprehensive program included:

- Replacing 5,000 3.5 gallon per flush – 5 gallon per flush toilets with new WaterSense labeled ones;
- Replacing 1,000 old showerheads with new 1.6 gallons per minute ones;
- Constructing a water efficiency checkup program with audits and instructor training;
- Engineering a WaterWise LandScaping & Gardening program with a demonstration garden;

- Promoting annual water savings events;
- Compiling brochures and educational presentations.

The program was highly effective. Many, if not all, water bills showed a significant decrease in water consumption, a few by as much as 50 percent. All the public events were well-attended, and the garden still serves as an educational tool for water conservation and efficiency. For more information on this unique partnership or other aspects of their program, please contact the Water Conservation & Efficiency Specialist with the city of Raleigh at 919-996-3468.

General Distribution

As early as 1993, Greensboro recognized growing water supply vulnerabilities and an increasing need for enhanced water efficiency. As part of a comprehensive plan, Greensboro's Water Resources Department partnered with organizations to distribute free water saving showerheads, faucet aerators and toilet flappers to Greensboro customers at all Greensboro libraries, recreation centers, the Farmer's Curb Market and Water Customer Service. From 1996 to 2003, more than 165,000 total pieces of hardware were distributed. Customer rebates of $4 were credited to 1,488 Greensboro water customers, who purchased closing flappers between 1995 and 1997. For more information about this method of distribution or other aspects of this program, please contact the Water Education Program Coordinator at 336-373-4601.

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Retrofitting Residential Fixtures – Ultra Low Flow Toilet Programs

Applicability

Water use by toilets is typically the largest source of indoor residential water demand, averaging 26.7 percent of indoor water use (Vickers, p. 26). The residential toilet replacement program seeks to replace higher flush volume toilets with ultra-low flush toilets that use 1.6 gallons per flush or less in order to decrease water use. These toilets can either be installed directly by the utility, a contractor for the utility, or by the resident or housing management.

This BMP is intended for a water system (utility) that has at least 20 percent of its homes and apartment units in its service area constructed prior to 1995, and for which there has not been an active retrofit program to replace high flush volume toilets with 1.6 gallons per flush toilets, or Ultra Low Flow Toilets (ULFT). This BMP is often implemented in conjunction with the showerhead, aerator, and toilet flapper retrofit and/or the *Water Survey for Single-Family and Multi-Family Customers BMPs*.

Description

ULFT replacement programs are an effective method of achieving water efficiency in the residential sector. ULFTs are toilets that use 1.6 gallons per flush (gpf) or less including dual flush toilets that can flush either 1.6 gpf or 0.8 to 1 gpf. Federal requirements prohibit installation of new toilets using more than 1.6 gpf. Under this BMP, the utility would develop and implement a program to replace existing toilets using 3.5 gpf or more in single-family and multi-family residences.

According to Vickers, successful toilet rebate and replacement programs must include:

- Identification of potential participants, potential water savings, program benefits and costs, schedule, and program budget and human resource requirements.
- Program outreach and marketing strategies targeted to specific customer groups and subgroups.
- Attractive financial incentives – a rebate, water bill credit, or fixture giveaway, for example.
- Installation guidance (e.g. printed instructions, call-in technical assistance, referrals to certified plumbers) or assistance (e.g. direct installation service, particularly for the elderly and disabled).
- Purchasing information about 1.6 gpf toilets, such as a description of types available for various applications, along with the names and model numbers of fixtures reported to be reliable in consumer surveys and technical studies.
- Rebate application forms.
- A convenient inspection process.
- Timely rebate processing and payment.
- Evaluation and reporting of program results.
  (Source: Water Use and Conservation, Amy Vickers, 2001, p. 42.)

Implementation

The ULFT replacement programs should offer free toilets or rebates for toilet replacement. Incentives and promotion of the program should be sufficient to retrofit at least five percent of eligible homes per year. In addition, ULFT models that are used in retrofit programs should maintain 2 gpf or less, regardless of what replacement flapper is used.

Identify the number of single-family and multi-family residences constructed prior to 1995. If there is no data of single-family homes existing at the end of 1994 readily available, U.S. Census data can be used. For the most accurate estimate of single-family and multi-family residents, census data from 1990 and 2000, which includes the number of housing units by type, can be used. This data can be used to estimate single-family units at the end of 1994, assuming linear growth.

Schedule

In the first 12 months: Plan a program including customer involvement as needed. Locate plumbing contractors or retrofit companies who may be interested in bidding on this program. Develop a plan for educating homeowners, apartment owners and managers, plumbers and realtors about the program. Solicit bids if using outside contractors and initiate the program. Include inspections by utility personnel or a third party to verify installation. In order to effectively implement this program, five percent of eligible single-family homes and five percent of eligible multi-family units should be retrofitted every year.

In the second year and after: Each year, target 5 percent of identified eligible single-family homes and multi-family units to be retrofitted. Continue the program until 50 percent of eligible single-family homes and multi-family units are retrofitted in order to achieve reasonable water efficiency benefits.

Scope

Annually, the ULFT replacement program should replace at least five percent of the estimated number of eligible toilets within the service area.

In order to accomplish this BMP, the utility should:

- Develop and implement a plan to distribute or directly install high quality ULFTs to eligible single-family and multi-family units;
- Implement the distribution or installation programs to achieve ULFT retrofits on at least five percent of eligible single-family units and five percent of the multi-family units each year. Utilities with more than 100,000 eligible connections should retrofit at least 5,000 eligible homes and units each year.
- Within 10 years of implementing the program, retrofit at least 50 percent of eligible single-family homes and multi-family units with ULFTs. For utilities with

more than 100,000 eligible connections, at least 50,000 eligible homes and units should be retrofitted within 10 years.

Documentation

To track this BMP, the utility should gather:

- The eligible number of single-family residences and multi-family units in the service area.
- The average number of toilets per single-family residence; the average number of toilets per multi-family unit.
- The average persons per household for single-family residences; the average persons per household for multi-family units.
- The number of ULFT installations credited to the program participant's replacement program, by year, including brand and model of toilets installed.
- A description of the ULFT replacement program, if applicable.
- The estimated cost per ULFT replacement, if applicable.
- The estimated water savings per ULFT replacement.

Determination of Water Savings

Average Daily Savings = SF x ((10.5 x Hs)/Ts) + MF x ((10.5 xHm)/Tm)

SF= Number of SF toilets retrofitted
MF = Number of MF toilets retrofitted
Hs = Number of people in average single family household
Ts = Average number of toilets per SF house
Tm = Average number of toilet per MF unit

For Single-family homes:
10.5 = gallons saved per capita per day if all toilets replaced in each household
Dual flush ULFTs increases savings by 25 percent

For Multi-Family Units:
10.5 = gallons saved per capita per day if all toilets replaced in each unit
Dual flush ULFTs increase savings by 25 percent

Cost-effectiveness

The rebates to the customers for installation of ULFT toilets are the most significant costs of this program. If the rebate cost for the toilet is set too low, only those customers planning to retrofit will do so. If the rebate is set too high, the utility will be overpaying for customers to retrofit. Most utilities have found a rebate to work effectively if set between $70 and $100.

Some utilities find it is more effective to provide the toilets free of charge to their customers. Toilets can be purchased from wholesalers by the truckload for $50 to $70. There may be additional costs for storage and distribution of the toilets.

Administration of the program can be conducted by utility staff or contracted out. There will be labor costs for application processing and inspections to verify installation, to determine if the tank is properly set and to discourage fraud. Inspection costs will be lower per toilet per multi-family retrofit due to the higher volume of toilets per application, but generally, labor costs range from $10 to $40 per toilet. Marketing and outreach range from $5 to $20 per toilet. Administrative and overhead costs range from 10 percent to 20 percent of labor costs. If this program is combined with the showerhead, aerator, and flapper retrofit BMP, there will be efficiencies in these costs.

To calculate the total cost per unit, total all costs and divide by the number of units being retrofitted.

For comments or questions regarding the Retrofitting Residential Ultra Low Flow Toilets BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9009.

References:

- Handbook of Water Use and Conservation, Amy Vickers, Waterplow Press, May 2001.
- Tampa Bay Water Potable Water Conservation BMPs, January 2010.
- Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide, November 2004.

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Retrofitting Residential Equipment – Cloth Washers

Applicability

A typical family of four washes a little more than one load of laundry per day, which accounts for approximately 22 percent of residential indoor water use (Vickers, p. 117). While the average clothes washer in the United States uses 41 gallons of water per load, the new high efficiency cloth washers use between 11 and 25 gallons per load. A Residential Clothes Washer Incentive Program BMP would encourage customers to purchase water efficient clothes washers through a direct discount at the time of purchase or a rebate after the purchase. This BMP can be implemented by any Municipal Water User Group ("utility") that has residential customers.

Description

Under this BMP, the utility would develop and implement an incentive program to encourage customers to purchase efficient clothes washers. Water efficiency for clothes washers is best described by using water factor (WF) terminology. WF is calculated by dividing the gallons of water used to wash a full load of clothes by the capacity of the washer tub in cubic feet. As of Jan. 1, 2011, the U.S. Department of Energy requires that all Energy Star washing machines have a maximum WF of 6.0, which is the highest ratio that the Consortium of Energy Efficiency (CEE) will consider as an efficient model of washing machine. For more information, go to http://apps1.eere.energy.gov/news/news_detail.cfm/news_id=11628.

For this BMP to be the most effective, the incentive offered should bridge at least one-half of the gap in the price difference between the efficient machines and conventional ones. As with any incentive program, the amount of the incentive will impact the participation in the program. Fully featured inefficient machines cost approximately $400, while the least expensive efficient machines cost between $600 and about $1000. For the least expensive machines, the price difference is around $200. The price difference is the most important factor of the buying decision for low-income customers. In addition, low-to-moderate income customers would be more likely to purchase the efficient washer if they received the incentive in the form of a discount at the time of purchase, rather than waiting between four weeks and six weeks for a rebate.

A clothes washer incentive program can be more effective if offered in conjunction with local gas and/or electric utilities because the incentive can be increased and the marketing reach should expand. The energy savings is a result of using more efficient motors, less energy required for heating hot water because less hot water is used, and a shorter drying time because the spin cycle on efficient washers remove more water.

Incentives should only be given to those customers who install washers that qualify as water efficient. A list of efficient washers is maintained and regularly updated by the Consortium for Energy Efficiency (CEE); please see CEE website at http://www.cee1.org/. CEE, a nonprofit public benefits corporation, develops national

initiatives to promote the manufacture and purchase of energy-efficient products and services. The U.S. Department of Energy and U.S. Environmental Protection Agency support CEE through active participation and funding. The CEE has ratings based on water and energy efficiency. This list has been used by many utilities as the source of qualifying washers to receive an incentive.

The utility may want to give higher rebates or discounts to customers purchasing the most WF efficient CEE Tier III models, slightly less to those purchasing Tier II models, and the lowest incentives to those purchasing Tier I models.

Implementation

Develop and implement a clothes washer incentive program designed to increase the market share of efficient clothes washers to 20 percent of the installed units by the second year of implementation. The program should be offered to customers in single-family homes and in multi-family units that have in-unit washer connections. Approach the local gas and/or electric utility to join in partnership to implement the program. Organize stakeholder meetings. Develop a marketing plan for educating customers, appliance stores, and realtors about this program. Initiate the program.

Schedule

The following schedule should:

- Plan, implement and market an efficient clothes washer incentive program within six months of adopting this BMP.
- Continue marketing efforts to achieve at least 20 percent market penetration for efficient washers by the end of the second year after implementing this BMP.

Scope

In order to accomplish this BMP, the utility should:

- Develop and implement a plan to offer incentives for the purchase of efficient clothes washers.
- Within two years of implementing this program, increase the market share of efficient clothes washers to at least 20 percent of local clothes washer sales.

Documentation

To track the effectiveness of this BMP, the utility should:

- Calculate the number of single-family homes and multi-family units with in-unit washer connections.
- Calculate the average number of persons per household for single-family and multi-family residences.

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- Calculate the number of efficient clothes washer incentives issued each year, by year, including brand, model and water factor of each efficient washer.
- Estimate water savings per efficient washer.
- Average total washer sales per year in the service area.



Determination of Water Saving

Savings = EWS x 5.6 x Hs + EWM x 5.6 x Hm

EWS = Number of single-family efficient washer incentives
EWM = Number of in-unit multi-family washer incentives
Hs = Number of people in average single-family household
Hm = Number of people in average multi-family household

Or

Single-Family: 5.6 = gallons saved per capita per day

Multi-Family In-Unit: 5.6 = gallons saved per capita per day

The rebates to the customers for installation of water efficient clothes washers are the most significant costs of this program. If the rebate cost for the clothes washer is set too low, only those customers already planning to buy an efficient washer will do so. If the rebate is set to high, the utility will be overpaying the customer to retrofit. Most utilities that implement this BMP have found a rebate to work effectively if set between $50 and $100 per efficient clothes washer. If partnering with an energy utility, the gas or electric utility rebate could add an additional $50 to $100. Some utilities have started offering tiered rebates based on the efficiency of the washer; the highest rebates are offered for the most-efficient washers in the lowest water factor tier.

Administration of the program can be conducted by utility staff or contracted out. Washer inspections are sometimes performed in order to verify installation and discourage fraud. Labor costs range from $15 to $35 per clothes washer. Marketing and outreach costs range from $5 to $15 per clothes washer. Administrative and overhead costs range from 10 percent to 20 percent of labor costs.

To calculate the total cost per unit, total all costs and divide by the number of units being retrofitted.

For comments or questions regarding the Retrofitting Residential Clothes Washers BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9009.

References:

- The Department of Energy: http://apps1.eere.energy.gov/news/news_detail.cfm/news_id=11628)
- Handbook of Water Use and Conservation, Amy Vickers, Waterplow Press, May 2001.

- Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide, November 2004.



Public Information Programs

Applicability

Public information programs can be an effective outreach tool to inform customers about water efficiency and ways they can conserve water. This BMP should be incorporated into all other BMPs as a way to reach your targeted audience regarding other water efficiency or water conservation measures the water system is undertaking. Outreach opportunities include direct interaction with the public, water use histories on bills, and a water efficiency/conservation webpage on the system's website. This BMP is intended for all water systems ("utility") with residential customers.

Description

Under this BMP, utilities would implement a public information program to promote water efficiency measures, including other BMPs being implemented and water efficiency-related benefits. The program should include various aspects of the following:

- Use the customers' bills as outreach tools.
    - Water use for the last billing period compared to the same period the year before, including a bar graph.
    - Use the bill to advertise any other programs (e.g. rebate or incentive programs) or restrictions underway.
    - Direct people to your website for more water efficiency information, if you include the website in a prominent place on the bill.
- Directly interact with the public.
    - Provide speakers for community groups.
    - Have booths with staff and exhibits at community festivals and events.
    - Co-sponsor adult education and training programs on water efficiency and conservation topics (e.g. water efficient landscaping, making your own rain barrel, and how to do your own home water audit). These programs could be done in conjunction with local gardening clubs, soil and water conservation districts, homeowners' associations and similar organizations.
- Utility In-House Media
    - Maintain a regularly updated water efficiency webpage as part of the utility's website. Include any water efficiency rebate or incentive programs, watering restrictions, and links for more information on water efficiency topics.
    - Dedicate "on hold" messages with recorded conservation information for utility or municipal phone lines.
    - Produce brochures, handouts and giveaways that can be distributed at public events and at public buildings.

Implementation

Although utilities will choose to implement different components of this BMP, implementation should consist of at least the following:

- Determine if the current billing system allows for water use history for the last billing period compared to the same period the previous year and whether it can add graphs. Determine if bills can be updated with other outreach information. If this information cannot be added to the bill, determine if a new billing system may be required. Determine if it is fiscally viable to implement this BMP.
- Create a program for direct interaction with the general public. At a minimum, this should include speaking with community groups and exhibiting at community festivals.
- Create and maintain a regularly updated water efficiency and conservation webpage as part of the utility's website.
- Produce brochures, handouts and giveaways that can be distributed at public events and at public buildings.

Schedule

- Research if the current billing system allows for water use history for the last billing period compared to the same period last year and whether it can add graphs. Research if bills can be updated with other outreach information. If the bills cannot be altered, research billing options that will allow for these changes. If there are no fiscal barriers, this change should be completed within the first 12 months.
- In the first three months, begin planning your public events. Research local festivals and inquire about participating. Create a water efficiency display and publications for these events. Remember to include other BMPs that your water system is implementing. Contact local organizations about collaborating to facilitate water efficiency related workshops. Begin public engagement within the first six months and continue throughout the year.
- In the first six months, plan a water efficiency webpage as part of the utility's website. Remember to include other BMPs that your water system is implementing. If necessary, locate contractors who may be interested in bidding for this project. Within the first 12 months, create and launch the webpage. Update the webpage at least every three months.
- Within the first six months, determine whether the utility and/or municipal phone systems have recorded messages or music for those on hold. If so, record several water efficiency messages that play while on hold. Remember to include other BMPs that the water system is implementing. This project should be completed within 12 months and updated every three months or sooner if needed.

Scope

To accomplish this BMP, the utility should do the following:

- If fiscally possible, within 12 months of implementing the program, develop and implement a plan to make customers' bills an outreach tool by providing water use history for the last billing period compared to the same period the previous year.
- Within 12 months of implementing this program, the direct public engagement aspect should be fully implemented. The utility should strive for at least four public speaking engagements and/or public events per year.
- Within 12 months of implementing this program, the webpage and recorded message should be fully implemented. The utility should strive to update these at least every three months.

Documentation

Utilities will differ in what aspects of this BMP they implement. To track progress of this BMP, the utility should gather and have available the following documentation:

- Document the research for the billing system, including estimates on replacing billing software with software that provides water use histories, graphs and water efficiency information directly on the bill if the current system does not have the ability to add them.
- The number of public speaking engagements that utility staff has attended. These should include the estimated number of people in the audience.
- The number of public events that utility staff has attended with a display or exhibit. These should include the estimated number of people in attendance.
- A list of brochures and handouts created for or used to provide information to the general public about water efficiency, water efficiency benefits, other BMPs that the system is currently undertaking and/or other water efficiency related topics.
- A completed water efficiency webpage, schedule of past updates and changes made during the updates.
- The number of phone lines that have the water efficiency "hold" messages, the contents of the message, the schedule of past updates and the contents of the changes.

Determination of Water Savings

Water savings for public information programs are difficult to quantify and therefore estimated savings are not included in this BMP. This BMP, however, is critical to the success of the other BMPs undertaken, as it serves as the promotional and educational portion of those BMPs.

Cost-effectiveness

A true cost-effectiveness analysis cannot be determined without a measure of water savings. This BMP, however, is an integral part of many best management practices, so

it should be considered foundational to a successful water efficiency program. In addition, by implementing this BMP, the utility will enhance its public image and increase customer goodwill.

For comments or questions regarding the Public Information Program BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9009.

References:

- California Urban Water Council, Memorandum of Understanding Regarding Urban Water Conservation in California, as Amended Sept. 14, 2011.
- Texas Water Development Board report 362, Water Conservation Best Management Practices Guide, November 2004.

Case Studies

Background

Direct Interaction with the General Public

Greensboro:

As early as 1993, water supply vulnerabilities in Greensboro increased the city's need for a demand strategy, supply augmentation, water restrictions and a comprehensive public educational program. Greensboro created and has maintained a substantial public education program by using a variety of approaches to educate the public.

The Greensboro Water Resources Department disseminates public information in several ways. To spread the conservation message, they distribute promotional items at various special events in the community. Several brochures covering topics such as how to have a WaterWise Home, WaterWise Landscaping and WaterWise Lawn Care have been created. Customers typically receive public education materials through their water bills, at presentations, workshops and by visiting the customer service informational kiosk. The Greensboro contact center provides customers with advice on how to fix a leaky toilet, report environmental issues such as pollution, flooding and storm drain blockage. In addition, new customers receive an information packet that contains various resources.

Multiple awareness campaigns have been produced through the collaborative efforts established between Greensboro and High Point. The Greensboro Water Resources Department also collaborates with the North Carolina Cooperative Extension Service in Guilford County on several projects to address issues affecting the community. Throughout the year, the cooperative extension service holds Carolina Yards and

Neighborhood Program workshops for residents that deal with issues such as proper planting techniques, water conservation and protecting water quality. In addition, the agency manages the rain barrel distribution program the city promotes.
For more information on the Greensboro Water Conservation Program, please see the following link at http://www.greensboro-nc.gov/index.aspx?page=2259.

Cary:

During non-drought times, Cary primarily communicates with residents through its monthly utility newsletter (BUD), the town's website, Cary TV 11 Conservation Corner, and the distribution of brochures at venues such as Earth Day at Spring Daze. Displays, print ads in the local newspaper, and postcards are used primarily for annual campaigns, such as Beat the Peak and Fix a Leak Week. In its recent Water Conservation Survey of 2011, the town asked customers how they would prefer to receive water conservation information. The customers preferred getting information through the utility newsletter by a large margin (83.2 percent). Other important sources were direct mail via postcards (67.5 percent), Cary's email list service (60.2 percent), Cary's website (59.3 percent), Cary News (55.5 percent), and homeowners' associations (52.5 percent).

In addition to its public outreach, Cary works with local businesses and community groups to help communicate its water conservation message whenever possible. Providing information to customers from many sources increases awareness of the many water conservation programs the town offers. For example, making sure that plumbers and home improvement stores know about the availability of high-efficiency rebates or free toilet dye tablets, for example, is an important point of contact for customers. Providing information at local garden centers and through irrigation contractors are other opportunities for businesses and water purveyors to work together to share conservation messages.

For more information on the Greensboro Water Conservation Program, go to http://www.townofcary.org/Departments/Public_Works_and_Utilities/Conservation/Water_Conservation.htm.

Using the Customers' Bills as Outreach Tools

The Durham Department of Water Management wanted to be able to show customers how much water they were using as compared to previous billing cycles. While usage was shown on each bill (bi-monthly for residential customers), there was no bill-to-bill point of comparison. When the city converted from the mainframe billing system to the Enterprise Resource Planning System (ERP) based billing system in January 2009, one of the major selling points was the ability to provide billing history on the bill itself. Water management has received numerous compliments from customers for providing this useful information.

In addition to the usage history, there is a small box just under the usage graph for newsworthy information. Staff has used the box to announce the implementation of year round watering restrictions, information about the tiered rate structure and notices of drought stages. All messaging directs customers to the DurhamSavesWater.org website for additional information. Used in concert with notification in the Citizens' Newsletter and other city-wide public information tools, both the usage graph and the information box have been received positively by Durham's customers, providing them the necessary tools to take ownership of their water usage.

Durham has seen a relatively flat demand during the last few years even with an increase in customers. City staff gives partial credit to information provided in the customers' bills, since it was used as a public outreach tool. The graphs on the water bill encourage on-going attention to usage and customers pay special attention during the summer months. Seasonal usage has not spiked as much in the post-drought years as had been anticipated, thanks in part to the usage graphs and the odd-even watering schedule. The decreasing number of seasonal watering violations is also a result of keeping the message in front of customers. Durham attributes the relatively flat demand to a number of factors, such as best management practices instituted by the city during the last few years.

For more information on the Durham's Water Conservation Program, go to http://www.durhamnc.gov/departments/wm/water_cons.cfm. For an example of Durham's water bill with a consumption graph, please see below.

DURHAM
1 8 6 9
CITY OF MEDICINE

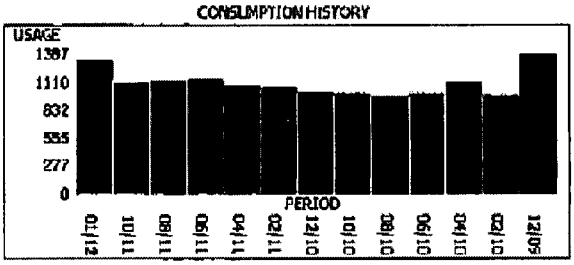
City of Durham
101 City Hall Plaza
Durham, NC 27701
919-560-1200
www.durhamnc.gov

City of Durham Utility Bill

Account Number	Customer Name	Service Location	Apt/Unit	Billing Date
999999999999	Doe, John	0000 No Name St		01/12/2012

PREVIOUS BILL AMOUNT	$96.77
PAYMENTS 11/28/2011	$96.77 CR
ADJUSTMENTS	$0.00
BALANCE BROUGHT FORWARD	$0.00
WATER USAGE INSIDE CITY	$31.78
WATER SERVICE FEE 5/8" MTR	$11.12
SEWER USAGE INSIDE CITY	$47.17
SEWER SERVICE FEE	$12.98
Balance Forward Due Per Previous Bill	**$.00**
Total Current Charges Due By 02/08/2012	**$103.05**
Total Amount Due	**$103.05**

CONSUMPTION HISTORY



Parcel ID	Account Type	IA Amount/ERU's "see back"
999999	Residential	99999

Meter Number	Previous Read Date	Present Read Date	Number of Days	Previous Reading	Present Reading	Usage in hundred cubic feet	Usage equivalent in gallons
99999999	10/28/2011	12/28/2011	61	54998	56323	1325	9911

Important: Please return this portion with your payment so that the return address shows in the envelope window. If paying in person, bring this bill.

DURHAM
1 8 6 9
CITY OF MEDICINE

Bill Number	Bill Date	Account Number
9999999	01/12/2012	999999999999

Charge Description	Due Date	Amount Due
Past Due Balance		$.00
Current Charges	02/08/2011	$103.05
Total Amount Due		$103.05
Enter Payment Amount		

A late payment fee of 1% will be added to all unpaid charges after 02/08/2012.

0000604201230999999980000010305O

SL: 0000 NO NAME ST

DOE, JOHN
0000 NO NAME ST
DURHAM, NC 27701

City Of Durham
P.O. Box 30041
Durham NC, 27702-3041

School Education and Outreach

Applicability

A school education and outreach program should provide age-appropriate water efficiency and conservation lessons with background information. In addition, the lessons should be correlated to the North Carolina Essential Standards. These programs can be offered as professional development workshops to teachers, or as programs conducted directly with students.

This BMP is intended for a water system ("utility") that serves schools and or students as part of its customer base. Before deciding whether this BMP is necessary, review existing curricula to see if the local school district is already offering water efficiency and water conservation related curriculum.

Description

School education programs, while not related to an equipment change may result in short and long-term water savings. Ideally, a school education program should reflect issues that are age appropriate, hands-on, and local in scope. Any suggestions for behavior changes should be things that a child in that targeted age range can accomplish on his or her own in order to create a lasting behavior change and positive environmental self-efficacy in the child.

A quality water efficiency and water conservation program for schools provides teachers with materials that contribute to interdisciplinary learning while educating the students about water efficiency, water conservation and local water resources. There are many state and national programs that include water efficiency, water conservation and water audits as part of a comprehensive water education curriculum, including Project WET (Water Education for Teachers) and the Environmental Protection Agency. Local issues can be incorporated into these lessons to help create a more locally appropriate curriculum.

Another option beyond offering a supplemental curriculum is to offer an education entertainment show for grades 1 through 4. These shows can be popular with teachers and often do not have the same requirements for material to meet the N.C. Essential Standards. In addition, the percentage of students that can be reached is often higher than for adoption of a curriculum.

To evaluate the effectiveness of the education materials, presentation or show, the utility should use an evaluation tool such as a pre- and post-test, or a survey.

Implementation

Implementation should consist of at least the following:

- Evaluate local, regional, state and national resources available to determine applicability to the utility's local water conditions. Consider creating an advisory committee of local educators to assist in choosing or creating the curriculum.
- Provide environmental education professional development for utility staff that will be working with school education and outreach. For example, workshops offered through the N.C. Office of Environmental Education and Public Affairs, such as the Basics of Environmental Education and Methods of Environmental Education, provide an overview of how to effectively work with various age groups. Additionally, Project WET workshops offered through the N.C. Division of Water Resources give the participants activities to use with different audiences.
- Implement a school education program to promote water efficiency, water conservation and water conservation related benefits. Programs include working with school districts and private schools in the water supplier's service area to provide instructional assistance, educational materials, and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed and water service area. When possible, educational materials should meet the N.C. Essential Standards.

A water oriented curriculum that is focused on conservation and resource issues should be made available for all grades and should include the following:

- Teacher professional development specifically targeted to certain grades is an effective approach to implementing a lasting water education presence in the schools. If possible, you should work directly with the school system to set up a free, professional development training on a teacher workday. Correlate the agenda to the N.C. Essential Standards that the targeted educators teach. When possible, provide curricula and materials for them to take back to their classroom that they can implement the materials easily. In addition, periodic follow-up with the teachers to ask how the utility can help them incorporate water education into their classrooms will result in greater implementation now and in the future.
- Grade appropriate programs and/or materials should be implemented for grades 1 through 5 initially. Alternatively, a presentation or educational show can be offered for some or all of these grade levels. Some utilities also sponsor day-long water festivals that incorporate water efficiency, water conservation and other water resource issues for 5th grade students in a school.
- For grades 6 through 8 and high school students, the utility may do one of the following: distribute grade appropriate materials for science, math, or other appropriate classes; present assembly type programs; sponsor science expositions with emphasis on water resources; or implement education programs with community groups such as Girl and Boy Scouts and 4-H clubs.

The utility can meet this BMP by focusing only on teacher training or direct student interaction.

In conjunction with the showerhead and aerator BMP, consider providing a water audit unit as part of the curriculum where the students take flow measurements of

showerheads and faucet aerators at their homes. If the showerheads and faucets are higher than current standards, the students can have their parents sign a request for replacement form to receive an efficient showerhead and faucet aerators to install with the assistance of their parents. This unit can be successfully implemented in grade 5.

Schedule

Depending on the program option(s) selected, the following schedule should be followed:

- In the first year, find the appropriate teacher professional development curricula and materials that meet the needs of both the teachers' and the utility. You may also want to meet with your local Soil and Water Conservation Education coordinator or the Project WET State Coordinator to help facilitate the workshop. Meet with school administration and ask for help in coordinating the training on a teacher work day. In the second year, begin facilitating the workshops.
- The utility should adopt or develop the program in the first year and start implementation in the second year for grades 1 to 3.
- The utility should adopt or develop the program in the second year and start implementation of the program in the third year for grades 4 to 5.
- The utility should adopt or develop the program in the third year and start implementation in the fourth year for grades 6 to 8.
- The utility should adopt or develop the program in the fourth year and start implementation in the fifth year for grades 9 to 12.

It is important that follow-up contact with teachers and schools that participated in the past be initiated annually. It will serve as an impetus to ask questions or arrange speakers or programs for their students for the following year.

Scope

The utility has three choices within the scope of this BMP. Select item 1, or items 2 and 3, or item 4 below. The utility should strive to reach 25 percent of teachers with professional development training by the third year of implementation.

1) The utility should strive to reach 10 percent of students in grades 1 to 5 with a presentation or lesson each year by the third year following the schedule above.
2) The utility should strive to reach at least 10 percent of students in grades 6 to 12 with a presentation or lesson each year by the third year of implementation following the schedule above.
3) Alternatively, this BMP will be met if the utility only focuses on grades 1 to 5 or 6 to 12. The program would be developed in the first year and implemented in the second year or either alternative. The utility should strive to reach either 15 percent of students within grades 1 to 5 each year by the third year of implementation, or 15 percent of students in grades 6 to 12 by the third year of implementation.

4) The utility can count students reached through clubs and other educational events as participants; and students impacted by utility sponsored programs outside the utility service area.

For smaller utilities, or those in which service area boundaries overlap school district boundaries with another water utility, jointly operated or funded programs should be considered.

Documentation

To track the progress of this BMP, the utility should gather and have available:

- The number of school presentations made during the reporting period.
- The number and type of curriculum materials developed and/or provided by the water supplier, including confirmation that curriculum materials meet N.C. Essential Standards and are grade-level appropriate.
- The number and percent of students reached by presentations and curriculum.
- The number of students reached outside the utility service area.
- The number of in-service presentations or teachers workshops conducted during the reporting period.
- The number of students reached by teachers trained at the above workshops.
- The results of evaluation tools used, such as workshop feedback forms, pre- and post-tests, student surveys and/or teacher surveys.
- Copies of program marketing and educational materials.
- Annual budget for school education programs related to conservation.

Determination of Water Savings

Water savings for school education programs are difficult to quantify and therefore estimated savings are not included in this BMP. If the retrofit kit is distributed, water savings can be calculated as described in the Residential Retrofit BMP. A 1991 study conducted for The Harris Galveston Coastal Subsidence District found an average savings of 18 percent or 1,400 gallons per month in homes where the students and parents had installed efficient showerheads and aerators on bathroom and kitchen sinks.

H. Cost-effectiveness

A true cost-effectiveness analysis cannot be determined without a measure of water savings. By implementing this BMP, the utility will enhance its public image, increase customer goodwill, and increase the viability of its overall water efficiency and water conservation efforts.

School education costs vary widely due to the varying types of programs. Curriculum units can be developed and implemented for between $1 and $3 per student. Teacher

education workshops can be facilitated for between $20 and $30 per teacher. Educational entertainment programs can be developed or contracted out for between $2 and $5 per student. There are prepackaged contractor programs with extensive features that cost up to $35 per student. Most programs will require utility staff oversight and outreach efforts to schools and students.

If the showerhead and aerator kits are distributed as part of this BMP, the costs for the kits will be similar to those described in the Residential Retrofit BMP.

References:

- Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide, November 2004.
- Beyond Ecophobia, David Sobel, Volume 1 Orion Society Nature Literacy Series.
- Project WET (Water Education for Teachers): www.projectwet.org
- NC Project WET: www.ncwater.org/Education_and_Technical_Assistance/Project_WET/
- U.S. Environmental Protection Agency Waterkids: http://water.epa.gov/learn/kids/waterkids/watered2.cfm
- North Carolina Essential Standards: http://www.dpi.state.nc.us/acre/standards/new-standards/

Case Study Example

Case Study for a School Education and Outreach Program

Greensboro, North Carolina

The Greensboro Water Resources Department has many tiers to its school education and outreach program. The city directly provides youth education in the form of classroom presentations, special events and programs. Presentations are provided for school age children on a variety of topics such as general water supply awareness, conservation and water quality. In addition, each year, more than 300 5th grade students participate in the water festival. Students learn about the importance of water while visiting eight different hands-on water activity sites.

The Greensboro Water Resources Department also maximizes its education and outreach efforts by partnering with local agencies. The Greensboro Kathleen Clay Edwards Family Library branch offers a host of environmental programs and workshops for Greensboro residents. Educators can take advantage of Project WET (Water Education for Teachers), Wonders of Wetlands (WOW), and Planning of Wetlands (POW) training workshops. The Water Resources Department pays for the cost of the curriculum guides, so workshops are provided for free to teachers in the Guilford County School System at least once per year. Participants increase their knowledge of watersheds, wetland design, water quality and water conservation. They then take these activities back into their classrooms, thereby reaching the students as well.

In addition, a collaborative effort with North Carolina Cooperative Extension allows students in Grades 1-4 to participate in their annual poster contest. The contest is held in two categories: water conservation and water quality. Winners receive a prize and recognition at a local city council or county commissioners' meeting.

DRAFT

Retrofitting Irrigation Systems/Landscape Water Use Efficiency

Applicability

This BMP is intended for use by a municipal water user group ("utility") with a substantial percentage of customers using automated landscape irrigation systems and is targeted to customers who have automated irrigation systems. Each water system has the potential for substantial water savings with the implementation of this BMP. For the maximum water-use efficiency benefit, the utility should adhere closely to the measures described below.

Description

Landscape irrigation conservation practices are an effective method of accounting for and reducing outdoor water usage while maintaining healthy landscapes and avoiding runoff. Using this BMP, the utility provides non-residential and residential customers with customer support, education, incentives and assistance in improving their landscape water-use efficiency. Incentives include rebates for purchase and installation of water-efficient equipment. Three approaches are outlined below, and successful implementation of this BMP will be accomplished by performing one or a combination of the approaches listed.

Water-Use Surveys, Metering, and Budgeted Water Use

If the utility chooses the survey approach, the utility develops and implements a plan to promote landscape water-use surveys to all of its accounts. The water-use surveys, at a minimum, include: measurement of the landscape area; measurement of the total irrigable area; irrigation system checks and distribution uniformity analysis; review of irrigation schedules or development of schedules as appropriate; and provision of a customer survey report and information packet. When cost-effective, the utility should offer the following: landscape water-use analyses and surveys; voluntary water-use budgets; installation of dedicated landscape meters; acceptance of site conservation plans; and follow-up to water-use analyses and surveys.

At the start and end of the irrigation season, irrigation systems should be checked, and repairs and adjustments should be made as necessary. Notices should be included in bills to remind customers of seasonal maintenance needs. For accounts with water-use budgets, the utility should provide notices with each billing cycle showing the relationship between budgeted water usage and actual consumption. When soil conditions allow, and landscape managers are familiar with the use and maintenance of soil moisture sensors, water budgets can be allocated based upon soil moisture status, thereby providing a closer estimate of actual evapotranspiration.

In an effort to increase water system efficiency and water use awareness North Carolina general statute 143-355.4 was passed in the 2009 session of the General Assembly. It mandates that as of July 1, 2009 all local government water systems and large community water systems must require separate meters for new in-ground irrigation

systems that are connected to their water system. Large community water systems are defined as those with at least 1,000 connections or serving at least 3,000 people. According to the League of Municipalities, the actions needed by the water system to achieve this mandate include:

- Deciding whether to split existing taps, add additional taps, or a combination of the two.
- Adopting a local ordinance stating, at a minimum, the requirements of the state general statute.
- Decidin whether a change in the rate structure and/or fee schedule is necessary.

Landscape Design

If the utility chooses the landscape design approach, the utility should provide information on climate-appropriate landscape design, as well as efficient irrigation equipment and management for new customers and change-of-service customer accounts. To serve as a model, the utility should install climate-appropriate, water-efficient landscaping at water agency facilities and landscape meters where appropriate. Municipalities with ordinance-making powers should consider adopting ordinances that require all new apartment complexes and commercial buildings to install a water conserving landscape. This can often be accomplished by amending an existing commercial landscape ordinance. Please refer to the BMP entitled, *Regionally Appropriate Landscaping*, for detailed information regarding the measures individual landowners and land managers can do to implement responsible water efficient practices on their landscape.

Minimum Standards and Upgrades

Irrigation system design, associated maintenance components, and even landscape design could be improved through use of municipal ordinance-making powers where possible. Minimum water efficient design features can be mandated for new construction, while existing systems or landscapes are offered incentives to upgrade. Precipitation sensors, evapotranspiration (ET) estimation sensors, soil moisture, irrigation controllers, and pipe specifications for zoning of irrigation systems are all potential elements of an irrigation systems ordinance. Total turf grass areas, buffer zone plant material, and hydrozones are all potential elements of landscape design ordinances. Buffer or median areas represent additional savings when all landscaped areas less than five feet in any dimension are restricted to drip or other surface or subsurface (non-spray) irrigation system or no irrigation system.

Implementation

The utility should consider offering a landscape irrigation program to customers with large landscapes first as a means of rapidly increasing cost-effectiveness and water savings. Marketing the program to the customer via bill inserts will allow the utility to target the largest summer peak users first. The utility should consider also approaching local weather announcers, gardening show hosts, and newspaper columnists, as well as any other means of establishing communication with the public concerning the

program. Public/private partnerships with non-profits such as gardening clubs, Cooperative Extension offices and/or with green industry businesses, such as landscape and irrigation maintenance companies, are potential avenues to market the program and leverage resources.

Incentives can include rebates for irrigation audits and systems upgrades, recognition for water-efficient landscapes through signage and award programs, and certification of trained landscape company employees and volunteer representatives who can promote the program. Utility staff can also be trained to provide irrigation audits which can include resetting irrigation controllers with an efficient schedule.

Approximately one year after conducting an irrigation audit, the utility should consider conducting a customer-satisfaction survey. The objective of the customer-satisfaction survey is to determine the implementation rate of recommended modifications and to gauge customer satisfaction with the program.

The initial step in assisting customers with landscape irrigation systems is a thorough evaluation or audit of the existing landscape area and irrigation systems. This includes:

- Customers with large landscapes, a list of landscape areas, measurements, plant types, irrigation system hydrozones and controllers.
- A list of existing irrigation policies or procedures, including maintenance and irrigation schedules.
- A distribution uniformity analysis on irrigated turf areas.
- A review of water bills with attention to the ratio of summer to winter use.
- An initial report summarizing the results of the evaluation.

The water customer who participates in this program needs to maintain and operate its irrigation systems in a water-efficient manner. Maintenance programs include pre-irrigation system checks, adjustment of irrigation timers when necessary, installation of rain sensors, regular review of irrigation schedules and visual inspection of the irrigation system. When landscape management companies are used, contracts should include a required report showing regularly scheduled maintenance and seasonal adjustments to irrigation systems controllers. The utility should consider implementing a notification program to remind customers of the need for maintenance and adjustments in irrigation schedules as the seasons change.

When appropriate, the utility should consider offering:

- Training in efficiency-focused landscape maintenance and irrigation system design.
- Financial incentives, such as loans, rebates, and grants, to improve irrigation system efficiency and to purchase and/or install water efficient irrigation systems.
- Financial incentives to replace high-water use plants with low water use ones.
- Rebates and incentives to purchase rain sensors or soil-moisture sensors.

- Notices at the start and end of the irrigation season, alerting customers to check irrigation systems and to make repairs and adjustments as necessary.

The utility should ensure that landscape irrigation system specifications are coordinated with local building codes and contractor licensing requirements.

Evaluations and/or rebate processing could be done by the utility staff or be outsourced. If a utility chooses to perform the evaluations using in-house staff, they may take advantage of irrigation evaluation training programs provided by North Carolina State University-Turf Management Extension. For more information on these trainings, go to http://www.turffiles.ncsu.edu.

An outsourcing option for the non-residential sector is to use or recommend a water-based performance contractor. Performance contracting is a financing technique that uses cost savings from reduced water and sewer consumption to repay the cost of installing water conservation measures. This technique allows for the development of a water-savings program without significant up-front capital expenses on the part of the customer. Instead, the costs of water-efficiency improvements are borne by either the contractor or a third party lender who recoups cost and shares water savings with the user.

Goals

- Realize the scope of this BMP within 10 years of the date implementation commences.
- Develop and implement a plan to target and market landscape water use surveys to all accounts by the end of the first year from the date implementation commences.
- Develop and implement a customer incentive program by the end of the first year from the date implementation commences.
- Follow up with the participating customer approximately one year after a water use survey has been conducted and/or a rebate processed.

Scope

To accomplish the goals for this BMP, the utility should do the following:

Landscape Irrigation System Management Programs

- Within one year of implementation date, develop and implement a plan to market water-use surveys to Industrial-Commercial-Institutional (ICI) accounts with mixed-use meters.
- Within one year of the implementation date, develop and implement a customer incentive program.

- Within 10 years, contact and offer landscape water-use surveys to all accounts with separate irrigation meters. A minimum response rate for the surveys should be 15 percent.
- Within 10 years, contact and offer landscape water-use surveys to all accounts with summertime monthly use of greater than four times the annual average. A minimum response rate for the surveys should be 15 percent.

Ordinance Approach

- In the first 12 months: Plan a program, including customer input as needed. Consider offering rebates for all or a portion of the time this program is in place. For example, offer rebates for only the first five years to encourage customers to take advantage of rebates and retrofit early in the program.
- Develop a plan for educating real estate agents, landscape companies and irrigation installers about this requirement. Plan a follow-up inspection program after retrofit. Develop and pass the ordinance. Implement the ordinance and tracking plan for the number of units retrofitted.
- In the second year and all subsequent years: Continue implementation; continue outreach program for real estate agents, landscape companies and irrigation system installers; and continue verification inspections.

Documentation

To track this BMP, the utility should gather:

- The number of dedicated irrigation meter accounts.
- The number of dedicated irrigation meter accounts for which water budgets have been developed.
- Aggregate water use for dedicated landscape accounts with budgets.
- Aggregate budgeted water use for dedicated landscape accounts with budgets.
- The number of mixed-use accounts.
- The number of surveys offered and number of surveys accepted and completed.
- The number, type and dollar value of incentives, rebates and loans offered to and accepted by customers.
- The estimated water savings achieved through customer surveys.
- The estimated landscape area converted and water savings achieved through low water landscape design and conversion program.
- The cost of administering program.

Determination of Water Savings

Landscape surveys as described in this document should result in at least a 15 percent reduction in water demand for landscape uses by surveyed accounts. The utility should provide estimates of water savings from landscape irrigation survey programs based on actual metered data.

For comments or questions regarding the Retrofitting Irrigation Systems/Landscape Water Use Efficiency BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9005.

References

- Texas Water Development Board Report 362, Water Conservation Best Management Practices Guide, November 2004.
- *Handbook of Water Use and Conservation*, Amy Vickers, Waterplow Press, May. 2001.
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- Dr. Charles Peacock, NCSU Turf Management Department and Dr. Anthony Lebude, NCSU Horticulture Department, Personal Communication.

Case Study Example

Case Study for an Outdoor Water Use Conservation Program

Cary, North Carolina

Background

Cary is a large town in west-central Wake County, North Carolina. The town's history is closely linked with the development of Raleigh and the Research Triangle Park.

The town population was 135,234 at the 2010 U.S. Census. According to the 2011 Local Water Supply Plan update, the town had a year-round service population of 159,898 people with 9,545 residential connections. The daily per capita water usage in 2011 was 61.4 gallons. Cary withdraws their water supply from Jordan Lake at the confluence of the Haw and New Hope rivers.

WaterWise Landscape Program

Cary began their WaterWise landscape programs in earnest in 1998 and this program has played a significant part in Cary's overall 20 percent per capita water reductions. Cary's outdoor landscape water efficiency and conservation program has three components: educational outreach initiatives, financial incentives, and regulations. Within each of those categories they have programs that address WaterWise landscape practices. Below are actions that have been incorporated into the utility's standard operating procedures.

Educational Outreach:

- Free WaterWise landscape workshops.
- Detailed information on Cary's website that covers fundamental landscape practices to reduce water use and maintain desired conditions.
- Beat the Peak campaign, which focuses on providing tips for WaterWise irrigation practices and landscapes during especially dry periods. Included in the Beat the Peak campaign is an online video game. To see the campaign, go to http://www.townofcary.org/Departments/Public_Works_and_Utilities/Conservation/Water_Conservation.htm.
- Free irrigation audits, which include free precision-spray nozzles as part of the 2012 campaign.

Financial Incentives:

- Turf Buy Back Program. This program provides a one-time financial compensation to utility customers who agree to convert at least 1,000 square feet of historically irrigated turf to natural area or warm-season grass.
- Tiered water rates.
- Water budgets.
- Rain barrels for sale at cost throughout the year.

Regulations:

- Alternate day watering.
- Separate irrigation meter requirements.
- Rain sensor and wastewater ordinances.
- Irrigation system design standards as part of the Land Development Ordinance (LDO)/Appearance Standards.
- Drought-tolerant plant material requirement as part of the LDO.
- Use of reclaimed water for irrigation in reclaimed water districts.

WaterWise Program Assessment

Assessments have been conducted on some of Cary's programs to estimate water use savings since their implementation. One of these is the Turf Buy Back (TBB) program, which involves incentivizing the replacement of cool season turf grasses with warm

season grasses or natural areas. It has been estimated that this initiative has saved approximately 722,678 gallons in the 2011 fiscal year. In fact, it was so well received by the public that the interest in participating exceeded the appropriated funds available. In addition to and in conjunction with the TBB, Cary has begun conducting free irrigation audits to homeowners that includes the retrofitting of more water-efficient spray nozzles. This program has only begun within the past year, so water savings totals are unavailable, but the potential water savings are substantial.

A 2011 survey conducted by CH2M Hill for Cary found that residents are generally supportive of the town's outdoor water conservation programs and efforts. The questions in the survey were designed to examine the degree of satisfaction respondents had with the town's water conservation program. The questions used a 9-point scale ranging from very dissatisfied to very satisfied, with neutral falling in the middle. Some highlights from the 2011 Water Conservation survey include:

- The respondents were first asked about their satisfaction with how the town implements their water conservation programs. There was a relatively high level of satisfaction expressed by the respondents with a mean of 6.97 and 74.2 percent replying on the "satisfied" side of the scale, including 30.4 percent answering very satisfied.
- The respondents perceived that the most effective tool to encourage water conservation were regulations, such as alternative day watering. The mean was 7.46 with 81.4 percent of the responses falling on the "effective" side of the scale, including 45.3 percent answering it was very effective. There were only 6.1 percent of the responses for this subject on the "ineffective" side of the scale. Overall, this was believed to be the most effective of the tools examined by a significant margin.
- The respondents viewed tiered water rates, financial incentives, such as toilet rebates, and the towns' website as the three next most effective tools. The mean response for tiered water rates, which ranked second was 6.46 with 67.4 percent of the responses on the "effective" side while 14.6 percent were on the "ineffective" side.
- The use of a financial incentive ranked third with a mean of 6.41 and with 61.3 percent of the respondents on the "effective" side, while 16.9 percent were on the "ineffective" side. Although the mean was slightly lower than tiered water rates, there was a higher percentage who felt it was very effective (32.6 percent versus 26.7 percent, respectively) indicating its importance to residents.

Cary has demonstrated that by undertaking these measures they are progressing towards a more efficient water system while maintaining desired landscape conditions. As Cary continues to incorporate additional water conservation measures and programs, it is expected they will continue to reduce their outdoor water use and maintain a stable water supply for continued growth.

For more information regarding the Cary's WaterWise Landscape Program, please visit the town's website at:

http://www.townofcary.org/Departments/Public_Works_and_Utilities/Conservation/Water_Conservation.htm.



Regionally Appropriate Landscaping

Applicability

This BMP is intended for use by water system customers who wish to reduce their water supply needs and reap the biological benefits of establishing a water efficient landscape. This information should be disseminated by the water systems and the recommendations should be encouraged through the larger local water conservation and efficiency program.

Description

This category involves residential and commercial water customers who use some portion of their water expenditures for irrigation of outside vegetation. These include automated and manual above- and below-ground irrigation systems as well as "watering by hand" using a hose or container. Even though managed landscapes that include automated irrigation systems are often larger and use greater volumes of water, these best management practices are intended to be inclusive to all users of outdoor irrigation. If used efficiently, outdoor irrigation can provide desired and attractive landscapes while maintaining adequate water supplies for other uses of municipal water.

There are five general categories of BMPs for outdoor irrigation water use:

- Planning and design.
- Vegetation selection (plant and turf).
- Efficient irrigation system.
- Soil analysis of the landscaped area and amendments (including mulch).
- Maintenance and testing of the irrigation system.

These categories include many subjects and are not intended to treat one category more preferentially than another. In fact, once properly implemented, the BMPs from all categories should work in concert with one another to require minimal water use for maintaining a beautiful and functional landscape. The information contained in this BMP is general in nature; therefore, it may be helpful to consult with a landscape contractor to achieve maximum water conservation benefits. However, outdoor water conservation is ultimately the responsibility of the owner of the landscape, as a professional can only advise the owner.

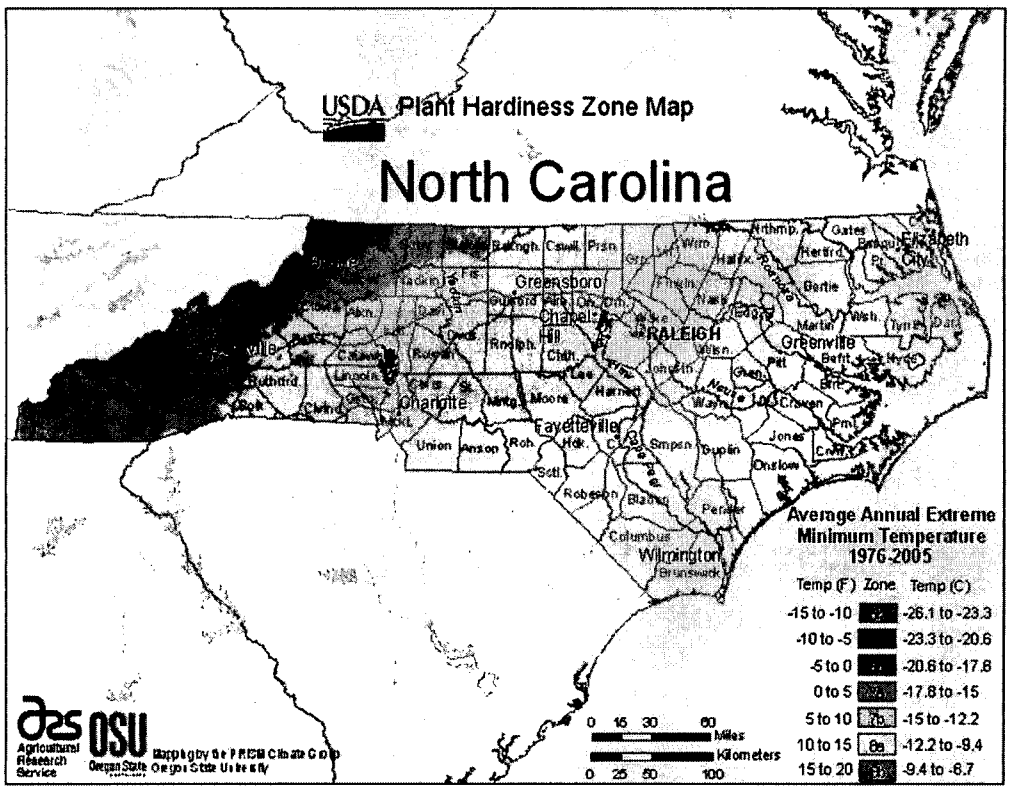
<u>Planning and Design</u>
To optimize water conservation efforts, the landscape should be planned and designed with water use in mind prior to any changes. This process should at least include the following aspects:

- Survey the land area with a transit or level. Use this information to produce a map with the elevation contours, as well as, all trees, structures, rocks and any permanent above-ground utilities.
- Use the existing contours while protecting any trees, structures or utilities from erosion.
- Use the contouring of the landscape to create "zones" where plants of similar water, sun and soil amendment needs are kept together.
- Minimal earthwork will reduce soil compaction, thereby increasing the infiltration into the soil.
- All grading activities should be conducted with the goal of reducing flow velocity and runoff. Engineering schemes such as, plunge pools, increasing channel or flow zone length through sinuosity, and widening of the flow zone should be considered to achieve this goal.
- Understand where the water is likely to flow during heavy rainfalls and use berms or vegetation such as multiple-stemmed bushes to reduce the velocity of this flow. A visit to the area during and immediately after a heavy rain is an important step to understanding the location and velocities of water flow onsite.
- Use turf only where needed.

Vegetation Selection (plant and turf)

Once the design plan has been drafted with specific watering "zones," the proper selection of desired vegetation based upon the plant climate region is critical. North Carolina is within several USDA Plant Hardiness zones from Zone 5 to Zone 8, as depicted in Figure 1.

Figure 1. USDA Plant Hardiness Zones for North Carolina (USDA, 2012)



The zones range from 5b in the higher elevations of the mountains to 8b in the far outer Coastal Plain regions, with Zone 7 predominating across the state. The intention of the USDA's establishment of plant hardiness zones was to provide a general idea of which plants are suitable to certain regions in an attempt to avoid unnecessary plant mortality.

"All plants must be placed in an environment that meets their basic requirements," the USDA Miscellaneous Publication No. 1475., Issued January 1990, states.

The specific differences in plant hardiness zones are based upon the length of day, anticipated solar radiation, temperature, initial timing and frequency of frost, heat, rainfall and soil pH.

The North Carolina State University's Department of Horticultural Science has produced many publications for shrubs and trees that provide detailed suggestions, including the hardiness zones, for which plants are appropriate to plant in North Carolina. The link for these detailed publications can be found in the references section of this BMP (NCSU, 2012c). For more detailed information, please consult your county's cooperative extension agent or local garden center who can assist in the proper selection of plants based on the plant hardiness zone, landscape placement and water needs (USDA, 2012).

Once a list of the plants has been determined, these plants should be grouped together based on water, shade and nutrient requirements. These vegetation groupings are the basis for landscape zonation as described in the planning and design section. This also provides the installer an opportunity to determine if any of the desired plants are inappropriate for the landscaped area. Consultation with a landscape contractor, arborist or county cooperative extension agent is advised for reasonable alternatives to the desired but inappropriate plants.

Turfgrass

Turfgrass is the most widely-grown ornamental crop in the southern United States. Of the 2 million acres of turfgrass grown in North Carolina, single family homes account for about 60 percent, primarily in areas serviced by a public water supply system. Other locations of turfgrass within areas serviced by a public water system include athletic fields, golf courses, parks, schools, churches and commercial buildings.

If the landscaped area being designed contains areas of turf, then an appropriate turfgrass type must be selected. There are many different types of turfgrasses known to thrive throughout North Carolina and a trip to your local agricultural supply or hardware store can be confusing if you are not fully prepared. Each species of turfgrass grown in North Carolina has positive and negative aspects. As a developer of the landscape, the individual must decide when they want or need the turf to be at its greenest and when it can be dormant.

North Carolina sits in the transition zone for cool and warm-season turfgrasses. Cool-season turf species are those with optimum growth at temperatures between 60 degrees and 75 degrees Fahrenheit, whereas warm-season turfgrasses have optimum growth between 80 degrees and 95 degrees Fahrenheit. By far, the most commonly-grown species in North Carolina is the cool-season grass tall fescue, followed by warm-season Bermudagrass. In addition to tall fescue, the cool-season grasses include creeping bentgrass, fine fescue, Kentucky bluegrass and ryegrass. The normal time for renovation of tall fescue and Kentucky bluegrass lawns in most of North Carolina is early September. High temperatures can cause cool-season grasses, such as tall fescue, to become stressed.

Warm-season grasses include bahiagrass, carpetgrass, centipedegrass, St. Augustinegrass, and zoysiagrass and bermudagrass. These grasses are generally better able to survive prolonged periods of dry conditions, but may still be severely damaged from chronic drought. Heat alone is generally not problematic with warm-season turfgrasses unless there is low soil moisture. The time to renovate warm-season grasses is normally in spring/summer.

Table 1. Characteristics of commonly grown turf grasses in North Carolina (NCSU, 2012a).

Grass species	Adaptation					Appearance	
	Shade	Heat	Cold	Drought	Wear	Color	Texture
Bermudagrass	very poor	very good	very poor	excellent	excellent	medium	medium
Centipede	good	good	poor	good	poor	light	coarse
Tall Fescue	good	good	very good	very good	very good	medium	coarse
Kentucky Bluegrass/ Tall Fescue	good	good	very good	very good	very good	medium-dark	medium-coarse
Bahiagrass	good	good	poor	excellent	poor	medium-dark	coarse
St. Augustine grass	very good	very good	poor	good	poor	medium-dark	coarse
Zoysiagrass	good	very good	fair-good	excellent	good	medium-dark	fine-medium

North Carolina State University's Turffiles program has established an excellent online turf selection decision aid at http://turfselect.ncsu.edu/TurfSelection.aspx. This internet application only requires knowledge of the general use of the landscape, shadiness of area, and county. It will generate several appropriate choices, with a table of the positives and negatives for each turf type.

There are many factors that affect turfgrass survivability and water needs in drought conditions including species type, turf age, rooting depth, soil type, shade, maintenance, traffic and heat. Water efficiency should be a goal during all climate conditions; however, during drought conditions turf should be watered and irrigated only to keep the grasses alive. A rule of thumb, when the watering regime goal is merely the survival of the turf, then irrigation of half an inch of water every two to four weeks is appropriate. This minimal water usage will keep the turf crowns hydrated, and allow the turfgrass to go semi-dormant to dormant. The color of the grasses may turn a dull brown. However, this may not occur in species such as tall fescue and bermudagrass. If the color changes do occur, the color and vigor will readily return once drought conditions have attenuated or reduced in severity. Use of herbicides and fertilizers are known to bind water molecules; therefore, avoid their usage until rains resume. Also, keeping vehicle and foot traffic off the turf when it is under severe drought stress will increase the survivability of the turf.

During normal conditions in the summer months, turf generally needs approximately one-inch of water per week. This water can be provided from both irrigation and rainfall; therefore, it is important to install a rain gauge near the irrigated area and keep track of the amount of precipitation collected. Due to the somewhat spotty nature of rain events, this is likely to differ from the nearest reported/published rain gauge data. The Turf Irrigation Water Management Model, which can be found at http://turf-ims.ncsu.edu/, can be used to calculate and track irrigation use. It uses the North Carolina State Climate Office weather data in concert with general soil type

data, turfgrass type and irrigation discharge rate to provide monthly irrigation needs. The irrigation section of this BMP document provides detailed information about proper irrigation practices.

Turfgrass that turns bluish-gray in the heat of the day may be in immediate need of water to prevent mortality. This situation may require exceeding the recommended watering regime, especially during an extremely hot and dry period. Be aware that the bluish-gray color may be a diurnal discoloration that will recover at night. Therefore, it is recommended that regular watering continue for at least one full day following observation of the discoloration before exceeding the normal watering regime. If the landscaped area is located in an area with local water restrictions, hand-watering of those areas that show visual signs of heat and moisture stress may be needed until the next allowable sprinkler irrigation opportunity (NCSU, 2012a).

Efficient Irrigation

Once the landscaped area has been properly planned and zoned and the locations of the large trees have been approximated, the type of irrigation system should be determined. There are two choices, below-ground permanent systems and above-ground temporary systems. For larger land areas with more extensive landscaping, the below-ground permanent systems are often preferred. However, many configurations are possible including maintaining both permanent and temporary irrigation systems in the same planned landscape. This approach allows for more flexibility for landscape alterations. Within most municipalities across the state, a licensed irrigation technician must be consulted for installation of any below ground irrigation system. For more information about conservation programs and efficiency ordinances local municipalities can initiate, please refer to the BMP entitled *Retrofitting Irrigation Systems*.

For the below-ground permanent systems, pipe layout is vital. The piping should be laid out so that larger rooting trees are avoided, the nozzles are spaced such that there is little spray overlap, and water is provided only where it is needed. Irrigation water is not needed directly at the base of trees once they are established. Impermeable surfaces such as sidewalks, driveways and roads should never be irrigated. Use of water efficient nozzles, which are regularly maintained, is important to achieve water conservation goals. Leaks around the nozzles or within the below-ground piping can result in significant water loss, reduced water pressure through the system and mortality from oversaturation and erosion from a softening of the subsoil.

Permanent systems are typically constructed as automated systems. If the irrigation system is automated, rain and/or soil moisture sensors need to be installed and actively functioning. A well-functioning sensor will avoid both unnecessary water usage during times when no irrigation is needed and over-watering when some irrigation is needed. It is important to note that these devices must be accurately calibrated based upon the specific conditions at the landscaped area. Sensors

should be calibrated at the initial installation and periodically afterward per manufacturers guidelines.

Temporary, above-ground irrigation systems include hand watering, manual irrigation and temporary sprinklers. These methods are thought to reduce water consumption. However, water reduction is on a case-by-case basis and hand watering does not always conserve water. Misuse of water can easily occur with a sprinkler attached to a hose by over-watering or watering surfaces with no plants. To avoid this situation, it is recommended to measure the irrigation radius of the sprinklers used and plan for where they will be placed.

A measure of the water volume discharged from sprinkler or nozzle heads should be conducted for permanent and temporary irrigation systems. To calculate the length of time required to irrigate one-inch of water on the landscape area, first distribute a few empty "catch" cans across the irrigated area. Note the exact time when irrigation begins. Standard, small tuna cans are useful since they are typically one-inch tall. The irrigation cycle should end once the catch can is full. The ending time should be noted. This provides the user with an approximate length of time required to provide the turf with enough water to thrive for another week. It also serves as an assessment of the distribution evenness of the sprinkler heads.

Regardless of the irrigation system type, turf areas are generally wide and broad. Therefore, sprinkler irrigation is typically a better choice. However, drip irrigation is an appropriate alternative for shrubbery, gardens or during the grow-in period for trees. Drip irrigation uses less water than the traditional sprinkler because it places water directly into the soil and reduces the amount of water lost to runoff and evaporation.

In addition, manual hand-watering with a hose or bucket should be a tool everyone uses in landscaped areas. Some plants require more water than others and dry zones can be present, as rainfall is not equal everywhere even across a single lawn. If small areas of water stress are observed either in turf (i.e. blue-greenish blade color) or larger plants (i.e. brittle stems and early leaf drop), water should be provided directly to these plants to avoid loss, as establishing new plants will often require significantly more water than what's needed to save the existing plant. For more valuable landscaping vegetation, water injection and syringing is a tool that can be used to provide water directly to the roots. People should consult a landscape professional if they choose this method.

It is recommended that irrigation occur two to three times a week, keeping in mind that generally only one-inch of water total is needed for the entire week, including what is received from precipitation. Irrigation frequency will often vary with climatic and environmental factors, such as seasonal shifts, temperature and rainfall. Significant alterations on water usage can be expected when any of these factors depart from normal conditions.

To avoid direct and immediate losses of irrigated water from evapotranspiration, watering activities should be conducted between 10 p.m. and 8 a.m. Nighttime is generally less windy, cooler and more humid, resulting in less evaporation and more efficient application of water. It is advised that the watering be conducted late at night rather than early morning to avoid times of high water demand. Contrary to popular belief, irrigating during this period does not stimulate disease development. For more information, go to http://www.turffiles.ncsu.edu /PDFFiles/000851/ag661.pdf.

Measuring the depth of the root zone is important when determining the frequency and duration of irrigation. Landscapes with deep, well-established root zones may require less-frequent irrigation in the summer, even during peak evapotranspiration (ET) demands. For younger landscapes, more frequent irrigation will likely be needed in the spring, when the roots are becoming established. Shallow rooting depth and warmer, windier days result in higher ET rates. Understanding the changing needs of the landscaped area is important for water conservation and the health of the plants.

Irrigation frequency should also be adjusted depending on existing environmental factors such as compacted soils or soils with a shallow hardpan or clay lens. To avoid runoff on these soils, irrigate only a small portion of the needed water, wait until all the water has percolated into the soil, and continue to apply small portions of water. If kept near field capacity, and not allowed to dry, this process will assist in reducing the compaction of the soil. Field capacity is the amount of water remaining in a previously saturated soil after free drainage has ceased. On well-aerated soils with low to moderate traffic, minor water stress on the turf can serve to benefit the turfgrasses, as this will tend to increase the rooting depth. It is recommended that once wilting is observed on a few blades, wait another 24 hours, then water the area again to ensure water infiltrates deep into the soil column.

Table 2. Estimated monthly irrigation totals for turfgrasses in the Raleigh area (NCSU, 2012a).

Month	Mean Temperature(°F)	Average Rainfall	ETP [a]	Gross Irrigation Requirement [b]	Net Irrigation Requirement [c]
		(inches)			
Jan	40.2	3.63	0.59	-	-
Feb	42.9	3.44	0.77	-	-
March	49.9	3.79	1.68	-	-
April	59.3	2.88	3.27	1.83	2.29
May	67.2	3.64	5.20	3.38	4.23
June	74.6	3.54	6.88	5.11	6.39
July	78.4	4.51	7.60	5.35	6.68
Aug	77.1	4.33	6.73	4.57	5.71
Sept	70.8	3.70	4.86	3.01	3.76
Oct	60.0	2.94	2.85	1.38	1.73
Nov	50.6	2.90	1.29	-	-
Dec	42.4	3.01	0.65	-	-
Total	-	42.14	42.37	24.63	30.79

[a] ETP is potential evapotranspiration or the reference water use based on climatic information calculated using a modified Blaney-Criddle method.
[b] Gross irrigation requirement is determined by subtracting the effective rainfall from the ETP. Effective rainfall is assumed to be 50 percent of the average monthly rainfall.
[c] The net amount of water required by the turfgrasses is quantified by the following equation: Irrigation Requirement = $\frac{GIR}{DU}$ Where GIR is the gross irrigation requirement and DU is the uniformity of distribution of the irrigation system, which may be assumed to be 80 percent.

Soil Analysis and Amendments

In North Carolina, most soils are acidic and somewhat low in nutrients; therefore, optimal plant growth and yield often require the addition of amendments. Plants with nutrient deficiencies or ion toxicities will show symptoms of water stress. This is because essential nutrients such as Phosphorus (P), Potassium (K), and Nitrogen (N) are necessary for the plant to transmit water from the soil into the roots and up into the above-ground portions of the plant. At the same time, ion toxicities, such as Aluminum (Al), Iron (Fe), or Sodium (Na) will restrict the uptake of water from the soil. Proper soil pH is also critical to avoid plant water uptake issues. In highly acidic soil conditions plant roots will be constrained in the uptake of water. For most areas throughout North Carolina, the recommended soil pH range is between 5.5 and 6.5.

Soil testing is the best way to find out the types and quantities of the soil amendments needed based on existing field conditions. Over fertilization or over-liming should be avoided, as it could result in increased shoot growth at the expense of root development. A soil analysis should be completed prior to any planting. Ensuring the turf and larger plants have the proper amount of fertilizer applied early in the season will assist in making more efficient use of the available nutrients. This will result in increased efficiency of water uptake throughout the growing season. In North Carolina, the Department of Agriculture and Consumer Services (NCDA&CS) provides a free assessment of soil samples sent by North Carolina residents. This report details the existing levels of essential macronutrients, as well as important

micronutrients present. The report also provides recommendations for quantities of soil amendments to be applied. These recommendations are based on the specific use of the landscaped area, which in this case would be a managed lawn.

It is important to follow the instructions provided by the state Department of Agriculture and Consumer Services for proper collection of samples, including sample depth and composite sampling. When, where and how the sample is taken all affect sample quality and the resulting nutrient/amendment recommendations. Each sample must accurately reflect the variability and conditions in the landscaped area, and typically soil from a single location cannot do this. Samples should be taken at the depths of the rooting zone for the plants planned for that location. Therefore, in planned turf areas the sample does not need to exceed 6 inches. However, in areas where larger plants are planned, the sample depths should be between 6 inches and 12 inches. The samples taken at different depths should not be combined together into a single composite sample. Rather, composite samples should be soil samples of the same depth at different locations. Each sample should be a composite of between 15 and 20 locations, thoroughly mixed, and the area represented by each sample should be relatively uniform. Avoid areas where soil conditions would be expected to be markedly different from those in the rest of the landscaped area (i.e. wet spots, severely eroded areas, old building sites, fence rows, spoil banks, burn row areas, old woodpiles or fire sites. These peculiar areas should have their own separate sample(s). The sample turn-around time varies throughout the year with the winter months generally taking longer than the summer months due to the increased agricultural needs (NCDA&CS, 2008). An example of a soil analysis report as well as an explanation of soil test results are included as appendices 1 and 2 at the end of this BMP.

Mulching

Mulching around trees and shrubs in a landscaped area, excluding the lawn, provides temperature protection and moisture retention for the plants as well as creating an attractive landscape. Some of the primary water efficiency benefits mulches provide include:

- Moisture retention, which is then taken up by the plants.
- Reduction of moisture lost to the atmosphere from the soil by evaporation (i.e. 10 percent to 25 percent reduction in soil moisture loss from evaporation).
- Soil protection from compaction from traffic, as well as from precipitation striking the soil. Compaction reduces the total pore space in the soil available to hold water.
- Reduction of runoff, which results in holding more water on-site.
- Reduction of topsoil erosion. Topsoil often contains more water for plants and more nutrients than the deeper, underlying soil.

- Insulation of the soil below from heat loss in the winter and evenings. Resistance of rapid warming in the summer and mid-day. This consistent environment reduces the amount of water lost to evaporation.
- Impedes the growth of weeds and other undesirable plants, which compete for limited water resources. A 2-inch–to-4-inch layer (after settling) is adequate to prevent most weed seeds from germinating.

The mulched area should include as much of the root zone as possible. For plant beds, the entire area should be covered with mulch. For individual plants, such as trees, the mulched area should extend at least three feet from the base of the plant. It is advisable to pull the mulch between 1 inch and 2 inches from the base of plants to prevent bark decay. Mulch can be applied year-round. However, the best time to mulch is late spring after the soil has warmed. Early spring application will delay soil warming and possibly plant growth. It is not necessary to remove the mulch when you fertilize. Apply the fertilizer on the mulch. Nutrients will move with the water to the roots below.

Mulch depth depends on two factors: the moisture holding capacity of the underlying soil and the type of mulch material used. Sandy soils dry out quickly and often benefit from a slightly deeper mulch layer of between 3 inches and 4 inches. However, excessive application of mulch can result in a situation in which roots are growing in the mulch and not in the soil. Over-mulched plants are easily damaged when herbicides and fertilizers are applied and during periods of drought stress. Mulching an area that is poorly drained can further reduce the drainage resulting in an area permanently saturated, which the selected plants would not be able to tolerate (NCSU, 2012b).

Table 4. Mulching estimates to adequately cover a landscaped area with a loamy surface (top 6 inches) soil (NCSU, 2012b).

Inches of Material	Organic Material Needed to Cover 100 Square Feet
6	2 cubic yards
4	35 cubic feet
3	1 cubic yard
2	18 cubic feet
1	9 cubic feet
1/2	4 cubic feet

There are essentially two distinct categories of mulching products, organic mulches and inorganic mulches. Organic mulch lacks significant manufacturing in its production. As such, organic mulch contains only plant materials. Inorganic mulches often also contain plant material, but may also include many different types of

materials integrated during the manufacturing process. Each has its own advantages and disadvantages, and its selection should be based upon landscape setting, anticipated use, maintenance requirements and budget.

Organic Mulch Materials

Many organic materials can be used as mulch. The material should be weed-free, non-matting, easy to apply, and readily available. Fine particle organic mulch will form a more complete soil cover than a coarse, loose material. Coarse mulch material will need to be applied in thicker layers in order to achieve the desired benefits. Organic mulches decompose with time, releasing small amounts of nutrients and organic matter to the soil. The layer of mulch should be renewed as needed to maintain a 2-inch-to-4-inch depth. On previously mulched areas, apply a 1-inch layer of new material every few years.

Some of the best organic materials include pine bark nuggets, shredded hardwood, pine straw and compost. Pine straw is aesthetically pleasing and will remain in place better than most other materials. However, pine straw can be a fire danger during drought conditions. Pine bark nuggets are longer lasting, but can be washed with a heavy rain. Note that pine bark mulch is primarily used as a soil conditioner and that pine bark nuggets are used as mulch. Bark used as mulch should contain less than 10 percent wood fiber. Reapplication time should be a consideration; pine straw will need to be reapplied each year while pine bark may not need to be reapplied for several years.

Other organic materials sometimes used for mulch include, wheat straw, shredded newspaper, peanut hulls, wood chips, sawdust and partially decomposed leaves. Most of these materials are less expensive than pine straw or pine bark but have some significant limitations. Any fresh, light-colored, unweathered organic mulch such as wheat straw, peanut hulls and wood chips will tie up nitrogen during the early stages of decomposition. Properly composted wood chips can be used as a long-lasting mulch that weathers to a silver-gray color. Unfortunately, most wood chip material is sold as a fresh material rather than as a composted or aged material. The chips decompose slowly, but as they decompose, microorganisms use nutrients from the soil that might otherwise be available for plant growth. If sawdust is used, it should be well-aged. Otherwise it will be difficult for water to move into the soil. Uncomposted sawdust is low in nitrogen and will rob nitrogen from the soil as it decomposes.

Yard waste, such as grass clippings, leaves and small twigs can be used as mulch in moderation. The back side of the shrub border or natural area is an ideal place to dispose of small pruning clippings. Ideally, these materials should be shredded or composted before applying; however, small amounts can be applied to existing mulch. Non-shredded leaves and grass clippings can form a thick mat that makes water penetration nearly impossible.

Organic material that has been stockpiled (in large piles) often goes through anaerobic (low oxygen, high moisture) decomposition and becomes acidic, with a pH of approximately 3. This can present a toxicity problem for the plants unless adequate liming material is provided. Properly composted organic material should have a pH of between 6.0 and 7.2. Anaerobic decomposition is often a problem with uncomposted materials such as leaves, grass clippings, wood chips or sawdust due to the toxic byproducts of anaerobic decomposition including methane and alcohol production. A good way of determining if the mulch underwent anaerobic decomposition is the strong smell of vinegar, ammonia or sulfur emanating from the mulch when turned. Damage usually occurs within 24 hours after application of the mulch and will manifest as marginal leaf chlorosis, leaf scorch, defoliation and/or plant death. Materials such as shredded newspaper, sawdust and yard waste may contain chemical contaminants that can harm plant growth.

Inorganic Mulch Materials

Though organic mulch provides good soil water benefits, geotextiles and landscape fabrics can be used to provide similar results. These materials are especially useful on areas with significant slopes and are used extensively on newly constructed road rights-of-way and other recent grading projects. They allow for normal water and oxygen exchange and prevent the growth of most weeds, while allowing desired grasses to grow through. The material should be applied on bare soil before or immediately after planting and held tightly in place by biodegradable staples or other similar devices. Good growth results have been shown when using a combination of landscape fabric covered with an organic material. However, a thin layer of soil can develop atop the fabric, since these materials provide a semi-permeable covering. This thin layer of soil can be a haven for weeds, which can use the water before it is transmitted past the fabric and into the soil. In this situation, using a coarse-textured mulch, such as pine bark nuggets, will delay the development of this layer.

Maintenance

- Due to the great deal of water needed to establish new turf grasses, it is highly recommended that turf areas have at least minimum maintenance, as the water needed to maintain turf is less than the quantity needed to start again.
- Fertilize and lime as recommended by the soil test.
- Seed bare patches as they appear.
- Apply herbicide treatments to reduce competition for water by undesired/weed species; however, judicious use is critical as some products can be toxic to certain turf species. It is important to follow the manufacturer's suggested dosing.
- Immediately control any insect, nematode or disease issues observed.

- The mowing height of turf depends on the species. For water conservation purposes, the mowing height should be maintained at the higher end of the recommended scale for that specific turf species. Please visit, http://www.turffiles.ncsu.edu/Turfgrasses for the recommended mowing heights of the specific species.
- Conduct mechanical maintenance practices, such as aeration, at the appropriate times of the year for the specific turf type on the landscape. For cool-season greases, these practices should occur in the fall when the ground is moist and the turf is typically subjected to little water stress. However, for warm-season grasses any mechanical activities should occur in the early summer to avoid turf damage.
- Inspect the entire landscaped area regularly, especially immediately following heavy rains. Rills or small gullies can form during and immediately after these rainfall events. These should be immediately filled to avoid further soil erosion and plant losses. Once filled, alterations in the surface drainage of the landscaped area may be needed to avoid this type of erosion from reoccurring. Simple drainage barriers, such as strategically placed mulch tubes, rain gardens or simply larger, thicker grasses, could serve to reduce the concentration and velocities of water during and after a rainfall. These solutions also help avoid costly and time-intensive grading activities.

For comments or questions regarding the Regionally Appropriate Landscaping BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9005.

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- Dr. Charles Peacock, NCSU Turf Management Department and Dr. Anthony Lebude, NCSU Horticulture Department, Personal Communication.

Appendices

Appendix 1. Example of a NCDA&CS soil analysis report.

NCDA&CS Agronomic Division Phone: (919)733-2655 Web site: www.ncagr.gov/agronomi/ Report No: 09536

Grower. Copies To:

Soil Test Report

SERVING N.C. RESIDENTS FOR OVER 60 YEARS

Received: 10/10/2011 Completed: 10/18/2011 Links to Helpful Information Wake County

Agronomist Comments 4

Field Information		Applied Lime			Recommendations											
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year		Lime	N	P_2O_5	K_2O	Mg	S	Cu	Zn	B	Mn	See Note
FRONT					1st Crop:	Lawn	0	(1.0 lbs Nitrogen or EQUIV PER 1000 SQ FT)				0			.0		4
					2nd Crop:	Lawn	0	(1.0 lbs Nitrogen or EQUIV PER 1000 SQ FT)				0			.0		4

Test Results																		
Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-Al(1)	Mn-Al(2)	Zn-I	Zn-Al	Cu-I	S-I	SS-I	NO_3-N	NH_4-N	Na
MIN	0.66	0.93	10.2	84.0	1.6	5.9	166	106	56.0	23.0	151			132	132	45	30				0.1

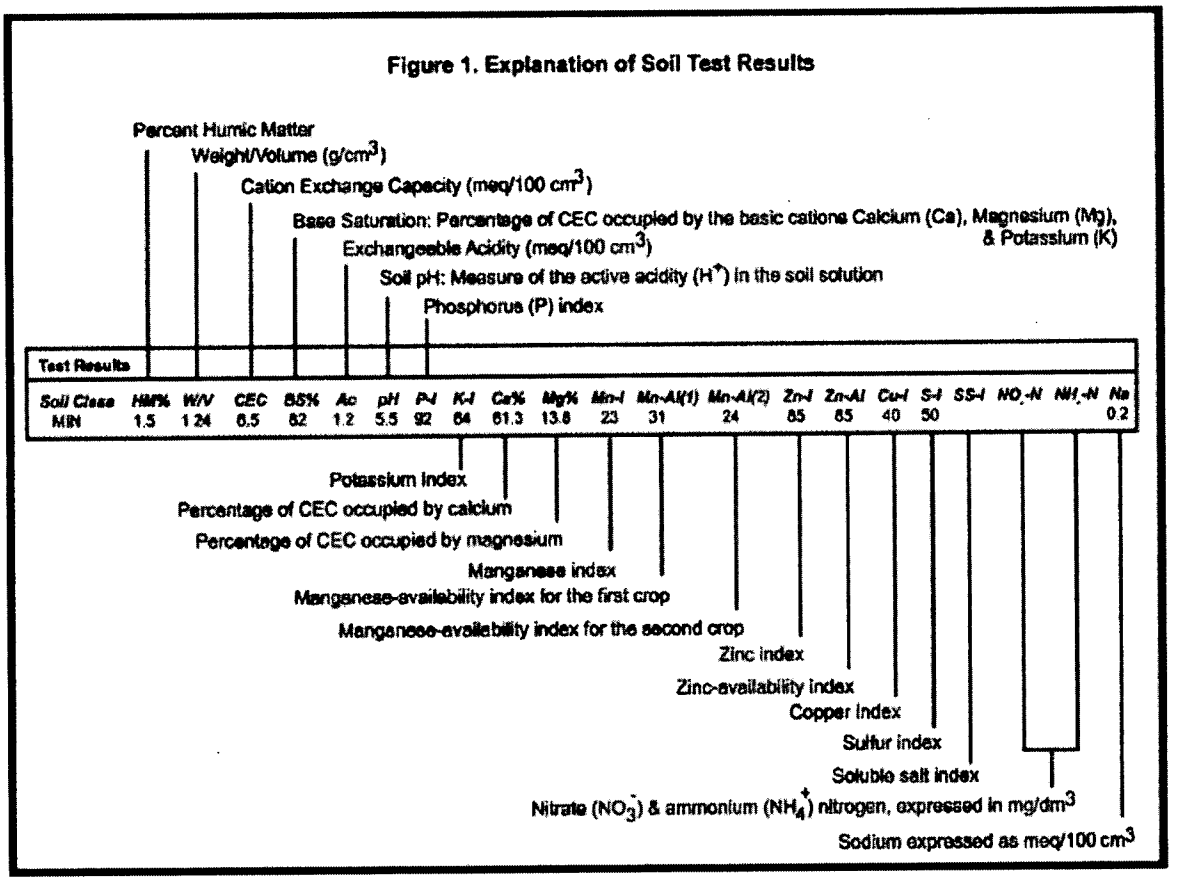
Field Information		Applied Lime			Recommendations											
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year		Lime	N	P_2O_5	K_2O	Mg	S	Cu	Zn	B	Mn	See Note
BACK					1st Crop:	Lawn	50M	(1.0 lbs Nitrogen or EQUIV PER 1000 SQ FT)				0			.0		4
					2nd Crop:	Lawn	0	(1.0 lbs Nitrogen or EQUIV PER 1000 SQ FT)				0			.0		4

Test Results																		
Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-Al(1)	Mn-Al(2)	Zn-I	Zn-Al	Cu-I	S-I	SS-I	NO_3-N	NH_4-N	Na
MIN	0.27	0.93	8.8	83.0	1.5	5.6	124	92	54.0	24.0	130			267	267	63	60				0.1

Field Information		Applied Lime			Recommendations											
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year		Lime	N	P_2O_5	K_2O	Mg	S	Cu	Zn	B	Mn	See Note
HOSTA					1st Crop:	Garden,Flower	0	(7.0 lbs 15-0-14 or EQUIV PER 1000 SQ FT)				0			.0		4
					2nd Crop:	Garden,Flower	0	(7.0 lbs 15-0-14 or EQUIV PER 1000 SQ FT)				0			.0		4

Test Results																		
Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-Al(1)	Mn-Al(2)	Zn-I	Zn-Al	Cu-I	S-I	SS-I	NO_3-N	NH_4-N	Na
MIN	0.60	1.01	9.4	85.0	1.4	5.9	86	48	66.0	16.0	192			175	175	83	26				0.1

Appendix 2. Explanation of Soil Test Results.



Rainwater Harvesting, Condensate Reuse and Gray Water Use

Background

The purpose of this BMP is to highlight ways of creating water efficiency through the use of rainwater harvesting, condensate reuse and/or the use of recycled water for irrigation or other applicable purposes.

In addition to providing water use efficiency, use of rainwater harvesting methods, such as cisterns, can also count as a stormwater treatment device. Development projects that use rainwater harvesting methods for rooftop runoff can receive stormwater reduction credit. This credit can be used to reduce, or possibly eliminate, other types of stormwater treatment devices such as wet ponds. This document does not provide details on the design techniques to achieve stormwater credit but that information is available in the Stormwater BMP Manual provided by the N.C. Division of Water Quality. It can be found in Chapter 19, "Rooftop Runoff Management" and is available at http://portal.ncdenr.org/web/wq/ws/su/bmp-ch19.

Applicability

This BMP is intended for use by a water system ("utility") concerned with reducing outdoor irrigation demands on the potable water system.

Calculation of potential savings will depend on regional climate patterns. Rainwater harvesting and condensate reuse are applicable to industrial, commercial and institutional (ICI) buildings, while private homes can benefit from rainwater harvesting. Utilities may benefit by targeting this BMP to help shave peak demand through customer education. For maximum water-use efficiency benefit, the utility should adhere closely to the measures described below. Gray water use will not be discussed in this BMP until the N.C. Division of Water Quality has established an approved gray water use system as directed by the North Carolina General Assembly.

Description

Rainwater harvesting and condensate reuse ("RWH/CR") conservation programs are an effective method of reducing potable water usage while maintaining healthy landscapes and avoiding problems due to excessive run-off. Using this BMP, the utility provides customers with support, education, incentives and assistance in proper installation and use of RWH/CR systems. RWH/CR systems will be most effective if implemented in conjunction with other water efficiency measures including water-saving equipment and practices. Rainwater harvesting is based on ancient practices of collecting, usually from rooftops-and storing rainwater close to its source, in cisterns or surface impoundments, and using it for nearby needs. ICI users have found it to be cost-effective to collect the condensate from large cooling systems by returning it into their cisterns as well. Facilities with large cooling demands will be in the best position to take advantage of condensate reuse, which due to its quality can potentially be used in landscape

irrigation, as cooling tower makeup water, or in some industrial processes. The variability in rate and occurrence of rainfall requires that rainwater or condensate be used with maximum efficiency. Incentives may include rebates for purchase and installation of water-efficient equipment.

Several factors should be considered in the design of rainwater harvesting and condensate reuse systems. System components include the collection area, a first flush device, a roof washer, an opaque storage structure with the capacity to meet anticipated demand and a distribution system. Design consideration should be given to maintaining the highest elevations feasible for collection and storage systems for the benefit of gravity flow to storage or distribution. When using drip irrigation systems, filters are necessary to prevent particulates from clogging drip nozzles. Regular maintenance of RWH/CR systems includes changing filter media on a regular basis and cleaning the first flush filter. The utility should consider providing participants with reminders of regular maintenance requirements for their RWH/CR systems. Maximum expected daily demand and knowledge of historical precipitation patterns, including amount, frequency and longest time between rainfall events, is important in designing the system. The Rainwater Harvesting: Guidance for Homeowners produced by North Carolina State University can be used as a resource, as well as technical assistance from professional installers of equipment for proper design and implementation of RWH/CR program guidelines. To see the guide, go to http://www.bae.ncsu.edu/stormwater/PublicationFiles/WaterHarvestHome2008.pdf.

While residential cooling systems are unlikely to provide significant flows of condensate, ICI installations with large cooling demands can produce significant amounts of condensate and should be evaluated for the dual RWH/CR system. Large ICI installations can implement rainwater harvesting (from roofs), as well as capture of stormwater for irrigation or other non-potable uses. Large buildings that have or need French drain systems for foundation drain water should evaluate the potential for recovery of this resource as well.

The utility should consider sponsoring one or more demonstration sites. Potential partners include customers with educational missions such as schools, universities, botanical gardens and museums with large public landscapes.

Although rainwater is recommended for all irrigation uses, it is most appropriate for use with drip or micro irrigation systems. Utilities implementing this BMP should consider offering a landscape water-use survey to help customers ensure that RWH/CR systems are properly designed and sized.

The water-use surveys, at a minimum, should include: measurement of the total irrigated area; irrigation system checks, review of irrigation schedules or development of schedules as appropriate; and provision of a customer survey report and information packet. The utility should provide information on climate-appropriate landscape design and efficient irrigation equipment and management for new customers and change-of-service customer accounts. See the Residential and commercial Landscape Irrigation

BMP for more detail.

Implementation

Programs should consider the following elements:

Retrofit or Rain Barrel Program

- Marketing the program to the customer via bill inserts will allow the utility to target the largest summer peak users first. The utility should consider also approaching local weather announcers, radio gardening show hosts, and newspaper columnists for assistance in notifying the public about the program. The program can be marketed using public/private partnerships with non-profits such as gardening clubs, neighborhood associations, cooperative extension offices or with green industry businesses such as rainwater harvesting companies and local sustainable building groups. Using these partnerships can also be an effective way to leverage available resources.
- Incentives can include rebates for RWH/CR systems, recognition for RWH/CR systems through signage, award programs, and certification of trained landscape company employees and volunteer representatives to promote the program.
- The initial step in assisting customers with landscape irrigation systems is a thorough evaluation of the potential water captured by a RWH/CR system.
- The water customers who participate in this program will need to maintain and operate their irrigation systems efficiently. The utility should consider implementing a notification program to remind customers of the need for maintenance and adjustments in irrigation schedules and to system filters as the seasons change.
- The utility needs to ensure that RWH/CR system specifications are coordinated with local building and plumbing codes.
- The American Rainwater Catchment Systems Association lists evaluation training for RWH/CR programs. ICI customers may want to consider performance contracting as an option for financing retrofitted RWH/CR systems.

New Construction: In addition to retrofitting existing homes and buildings with RWH/CR systems, a utility may also choose to support new construction. Using this approach, the utility could:

- Adopt ordinances requiring all new ICI properties to install a RWH/CR system that collects and stores rainwater and condensate from all eligible sources and distributes it to irrigation and/or a cooling tower make-up system.
- Implement an incentive program to encourage builders and owners of new ICI properties to install a RWH/CR system that collects and stores rainwater and condensate from all eligible sources and distributes it to irrigation and/or a cooling tower make-up system. In large ICI buildings requiring cooling towers, design consideration should be given to returning condensate flows from air conditioning coils to cooling tower make-up. It may be effective for this BMP to be

part of a Green Builder-type rating system that also includes WaterWise landscaping and adequate soil depth.

- Implement an incentive program to encourage homebuilders and homeowners to install a RWH system for landscape use to reduce potable water consumption from the utility in the summer season.
- Adopt ordinances requiring that new homes or multi-unit properties install plumbing that separately collects and stores rainwater from eligible sources and distributes the rainwater through a subsurface irrigation system. The rainwater could be distributed around the foundation of the residence or building or for other landscape use.

Such programs would need to be carefully coordinated with stormwater collection programs and meet all applicable regulations for stormwater collection and reuse.

Schedule

Depending on the option(s) selected, the corresponding schedule should be followed.

Incentive Approach: In the first six months, plan the program including stakeholder meetings as needed. Develop a plan for educating potential homebuyers, developers, plumbers, green industry trade groups, landscape architects and realtors about this program. After six months, implement the program.

Ordinance Approach: In the first six months, hold stakeholder meetings to develop the ordinance. Consider offering incentives for the first year of implementation. Propose the ordinance or rules to the local city council for approval. Develop a plan for educating potential homebuyers, developers, plumbers and realtors about this program. After six months, implement the program.

Scope

To accomplish the goals of this BMP, the utility should do one or more of the following:

- Develop and implement an incentive program to encourage RWH/CR in new multi-unit properties and certain new commercial developments such as office parks.
- Develop and implement an incentive program to encourage RWH/CR in existing multi-unit properties and certain existing commercial developments such as office parks.
- Develop and implement an incentive program to encourage residential customers to install rainwater systems and rain barrels.
- Develop and implement an ordinance requiring condensate recovery in new non-residential construction as applicable.

Documentation

To track this BMP, the utility should gather and have available the following documentation for each year of operation:

- The number of new RWH/CR developments for which design planning started after adoption of this BMP.
- The number and type of RWH/CR installations completed each year.
- The estimated rainwater and condensate use in each RWH/CR installation.
- Aggregate water capacity of RWH/CR sites.
- The number, type and dollar value of incentives, rebates or loans offered to and accepted by customers.
- Estimated water savings achieved through customer surveys.

Determination of Water Savings

Water savings from a RWH/CR program is determined by water volume harvested and used to replace other water sources. In programs which target new construction, the water savings should be estimated based upon known water consumptions for the proposed end use. A number of sources, including other BMPs, can be helpful in estimating potential water savings. A method for estimating potential water catchment and a monthly water balance equation for estimating water storage capacity are:

Catchment Potential (gals) = Area x 0.62 x 0.8 x Rainfall

- Where Area = total area of catchment surface in square feet.
- 0.62 = coefficient for converting inches per square feet to gallons (unit conversion from 7.48 gallons per cubic feet).
- 0.8 = collection efficiency factor.
- Rainfall = average rainfall in inches.
- Note: Median and lowest recorded rainfall can also be calculated in order to develop a range of expected values.

Storage Capacity: A simple assumption is that up to three months may lapse without significant rainfall. As such, it's recommended that utilities maintain three months worth of water storage capacity.

- More precise methods of estimating needed storage capacity or additional information for estimating water balance of RWH/CR systems and of accounting for the variability in seasonal rainfall pattern is available in the Texas Manual on Rainwater Harvesting at http://www.twdb.state.tx.us/publications/reports/RainwaterHarvestingManual_3rdedition.pdf.

- For condensate recovery, storage should be based on the anticipated maximum holding time before the condensate is reused for irrigation or other purposes.

Cost-Effectiveness

The costs of this BMP to the utility will include administrative program management costs and incentives to customers for implementing rainwater harvesting or condensate reuse projects. Depending on program design and whether project inspections are required, staff labor costs should range from $50-to-$100 per project. Marketing and outreach costs range from between $20 and $50 per project. Administrative and overhead costs range from 10-to-20 percent of labor costs. Labor costs range from $8 to $12 per rain barrel and warehouse storage costs may be an additional consideration.

For comments or questions on the Rainwater Harvesting and Condensate Reuse BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9021.

References

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- *Texas Guide to Rainwater Harvesting*, Texas Water Development Board and Center for Maximum Potential Building Systems, 2nd Edition, 1997. http://www.twdb.state.tx.us/publications/reports/RainwaterHarvestingManual_3rd edition.pdf
- *Waste Not, Want Not: The Potential for Urban Water Conservation in California,* Pacific Institute, November 2003. http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf
- Rainwater Harvesting at North Carolina State University http://www.bae.ncsu.edu/topic/waterharvesting/
- http://www.bae.ncsu.edu/stormwater/PublicationFiles/WaterHarvestHome2008.pdf

Case Studies for Rainwater Harvesting and Water Reuse

North Guilford Middle and High School

Greensboro, North Carolina

Background

Greensboro is in Guilford County in north central North Carolina and has a population of 263,000 people. North Guildford Middle and High School have a total student population of 2,344. The schools were constructed in 2007. The design of the rainwater harvesting infrastructure for the school took place at the time of the school design.

The goal for the project was to collect enough water to flush the toilets in the facility and also to irrigate the school grounds. This goal was met on completion of the project.

Cistern size – 360,000 gallons
Water saved per year – 4 million gallons
Cost – $500,000, or $1.39/gallon
Cost Savings – 4 million gallons at a cost of $1.50/gallon which = $6,000/year

The project's design was driven by location, number of students and faculty, weekly and seasonal schedule of the schools, available collection area, plumbing fixture efficiency, rain water supply and other factors.

The rainwater harvesting project has also been used as an education resource for the school. Other system benefits include the elimination of stormwater runoff from the site and the reduction of utility bills.

For more details on this project, go to
http://innovativedesign.net/files/Download/NMS%2085x11.pdf.

University of North Carolina at Chapel Hill

Chapel Hill, North Carolina

Background

Chapel Hill is in Orange County, where water is provided by Orange Water and Sewer Authority. The University of North Carolina at Chapel Hill has a population of more than 28,000 students.

The facilities service division of the University of North Carolina noted the limited local water supplies and recent droughts. This highlighted the need to reduce water consumption across the UNC campus. Planning and construction of cisterns and the use of reclaimed water have reduced the overall need for potable water. In 2009, operations started on a reclaimed water system that further reduces potable water consumption by more than 200 million gallons per year.

The first project the university undertook was using reclaimed water to irrigate some athletic fields and help cool the chilled water plants. In 2009, all five chilled water plants, which use 200 million gallons of water per year, were using reclaimed water as their water source.

In 2012, a 350,000-gallon cistern is being constructed in the former UNC Bell Tower parking lot. Water from the roof of the new Genome Sciences building will be stored here and then used to irrigate Kenan Stadium and flush the stadium's toilets. Other cisterns installed in front of Hanes Hall and beneath the parking structure at Boshamer Stadium collect water from the roofs of these structures and this water is then used to

irrigate the baseball field at Boshamer Stadium. Overflow irrigation is collected and recycled into the cistern.

UNC has worked closely with OWASA on this process. The reclaimed water used on the campus is highly treated wastewater that is pumped to the university after being treated at Mason Farm Sewage Treatment Plant.

UNC continues to look for opportunities to use reclaimed water and harvested rainwater. The expansion of the campus to the north will be designed using the information gained from these existing projects.

For information on home rainwater harvesting, please see the following links:

http://sustainability.unc.edu/Initiatives/WaterManagement.aspx

http://www.bae.ncsu.edu/topic/waterharvesting/

For more information at UNC's reclaimed water use, please see the following links:

http://www.owasa.org/whatwedo/reclaimed-water.aspx

http://sustainability.unc.edu/Initiatives/WaterManagement.aspx

Case Study for Rainwater Harvesting

North Carolina Aquarium at Pine Knoll Shores

Background

The design and construction of this rainwater harvesting cistern took place after the aquarium was built.

The goal for the project was to prevent stormwater runoff from the site. The collected water is used to irrigate the greenhouse and plant nursery and for maintenance purposes such as deck and vehicle washing. This goal was met on completion of the project.

Cistern size – 18,000 gallons held in six tanks
Water saved per year – 4 million gallons
Purpose – stormwater runoff abatement and conservation of municipal water

The rainwater harvesting project has also been used as an education resource for the aquarium. A major benefit of the system is that stormwater runoff on the site has been eliminated and utility bills have been reduced.

For more details on this project, go to
http://www.nccoastaltraining.net/uploads/Rainwater%20-%20KATHY%20DeBUSK.pdf.

DRAFT

Water Conservation Pricing

Background

Water conservation pricing is the use of rate structures to encourage efficient use and discourage the waste of water. Water conservation pricing provides economic incentives to customers to use water efficiently. It is possible to achieve full-cost pricing of water while using water conservation pricing principles.

Appropriately designed and implemented water conservation pricing can:

- Reduce water consumption while limiting negative impacts on utility revenues.
- Reward customers for making cost-effective changes in water appliances and water use behavior through greater savings.
- Target inefficiency in discretionary water uses such as landscape irrigation.
- Delay costly and perhaps unnecessary water supply expansion projects.
- Avoid financial hardships on low-income customers.

Applicability

This BMP is intended for all water systems wishing to send price signals to customers that will encourage water conservation. A water system may have already accomplished this BMP if it currently has a conservation price structure that has resulted in water conservation at the desired rate.

Description

Water conservation pricing is the use of rate structures to provide for the financial security of a water system and encourage efficient use and discourage the waste of water. Conservation pricing structures often increase unit prices with increased consumption (increasing block rates), charge higher rates during high-use seasons (seasonal rates), and/or impose water shortage response plan-linked temporary surcharges during water shortage periods. The goal of conservation pricing is to develop long-term consumption patterns consistent with the cost of providing the level of service required by that consumption pattern. For example, high water use imposes greater costs to the utility in terms of capacity, and should be charged higher rates. Using this BMP, water systems should consider establishing rates based on long-run marginal costs, or the cost of adding the next unit of capacity to the system. An established cost of service methodology should be followed whenever rates are developed or proposed for change.

This BMP addresses conservation pricing structures for retail customers. For water systems supplying water and sewer service, the principles contained in this BMP can be applied to the pricing of both services. Water systems that supply water but not sewer service should make good faith efforts to work with sewer agencies so that these sewer agencies do not provide sewer services using a pricing structure that conflicts with the

objectives of the water pricing structure.

For conservation pricing structures to be effective, customers should be educated on the type of rate structure the water system uses and be provided feedback through the water bill on their water use. Most customers do not track water use during the month because of the difficulty and inconvenience of reading the meter. When customers read their bills, they often just look at the total amount billed. Conservation pricing has the advantage of providing stronger feedback to the customers. Customers will see a larger percentage increase in their water bill that will appear disproportionate to their increase in water use. Water systems should move toward using billing software that allows customers to compare water use on their bill with average water use for their customer class, as well as the household's water use for the last 12 months. The rate structure should be clearly explained on the water bill, including information about the block sizes and rates if applicable.

It is not recommended that a minimum monthly water allotment be included in the minimum bill. The American Water Works Association's (AWWA) M1 Manual notes that minimum charges are often considered to work counter to conservation goals and are unfair to those who use less than the monthly minimum. A customer in a small house with all efficient fixtures and appliances may be able to consume less than 1,000 gallons per month and may be inclined to increase their water use if a minimum bill includes charges for at least 1,000 gallons.

Implementation

Conservation pricing is best if introduced over time and in multiple steps. Some of these steps include:

- Implementing reporting procedures.
- Monitoring and documenting usage patterns for various sectors of users.
- Educating consumers on the value that the utility provides.

Successful adoption of a new rate structure may necessitate developing and implementing a public involvement process in order to educate the community about the new rate structure. The new rate structure should adhere to all applicable regulatory procedures and constraints. If the conservation pricing structure to be implemented is substantially different from current practices, then a phased-in approach may be appropriate.

Public involvement in the development and implementation of conservation rates can help assure that the goals of the conservation pricing initiatives will be met and accepted by local constituents. Public meetings, advisory groups and public announcements are among ways to generate public involvement.

Development of conservation-based rate structures is more than just selection of arbitrary usage breaks for increasing block rates. The process requires consideration of

the effect on water demand and water system finances.

Basic rate structure considerations should include rates designed to recover the cost of providing service and billing for water and sewer service based on actual metered water use. Conservation pricing should provide incentives to customers to reduce average and peak use. The conservation rate structure can be designed to bring in the same amount of revenue, often termed revenue neutral, as the previous rate structure.

Only one form of conservation pricing is required for this BMP. Conservation pricing is characterized by one or more of the following components:

- Rates in which the unit price ($/1,000 gallons) increases as the quantity of water used increases are called increasing block rates. A water system should analyze historical records for consumption patterns of its customers. The first block should typically cover the amount of water for normal household health and sanitary needs. Rates for single family residential and other customer classes may be set differently to reflect the different demand patterns of the classes. To increase the effectiveness of this rate structure type, the additional revenue from the higher blocks should be associated with discretionary and seasonal outdoor water use.
    - The price difference between blocks is important in influencing the customer's usage behavior. Price increases between blocks should be no less than 25 percent of the previous block. For maximum effectiveness, the price difference going from one block to the next highest block is recommended to be at least 50 percent of the lower block. For example if the third block of a four block rate structure is $4 per 1,000 gallons, the fourth and final block should have a rate of at least $6 (50 percent higher) per 1,000 gallons. Any surcharge based on water usage should be included when calculating these percentages.
- Rates based on individual customer water budgets, in which each customer is charged according to an increasing block rate structure in which each block size is determined by that individual customer's water needs, often called budget-based rates. Water budget rate structures are based on the philosophy that each customer has a unique amount of water that is needed for public health and is adequate for all necessary uses (drinking, cooking, washing, etc.), and uses above that amount are considered discretionary and charged as excessive (irrigating lawns, washing cars, etc.). Typically, there should be an indoor and an outdoor component to a water budget.
    - For residential rates, the indoor component should be based upon estimates of the household's average wintertime use. The outdoor component is based upon landscape area. For business customers, water budgets will often be based on historical average for indoor water use, and the outdoor component based on landscape area.
    - To qualify as a conservation rate, water systems that implement water budget based rate structures typically begin excess rate charges for landscaped areas at no more than 80 percent of average annual reference

evapotranspiration replacement rates.

- Rates based upon the long-run marginal cost, or the full-cost of providing water.
  - Conservation pricing should use a consumption charge based upon actual gallons metered. The base charge ("minimum bill") for service should be based on the fixed costs of providing that service which generally includes administrative and meter-reading and billing charges, debt service and capacity costs. Including an allotment for water consumption in the minimum bill does not promote conservation. It is recommended that if an allotment is included, it should not exceed 2,000 gallons per month. Water systems including a water allotment in the minimum bill should consider eliminating that allotment within five years of implementing this BMP.
  - Adoption of lifeline rates neither qualifies nor disqualifies a rate structure as meeting the requirements of this BMP except that the minimum bill guidelines should be followed. Lifeline rates are intended to make a minimum level of water service affordable to all customers. Lifeline rates should not be applicable past the first 2,000 gallons of use.
  - The water system should educate customers about the rate structure and use billing software that allows the customer to compare water use on his or her bill with average water use for his or her customer class, as well as his or her household water use for the last 12 months. The rate structure should be clearly explained on the water bill. The water system may want to consider implementing the Public Information BMP in conjunction with this BMP in order to provide customers information on how to reduce their water bill under a conservation rate structure.
  - In order to set up an effective irrigation rate, all water used through irrigation meters should be charged at least at the highest block rate, if applicable. If you charge for water and sewer, keep in mind that by installing an irrigation meter, the customer will no longer be paying wastewater rates for that volume of water, and the total price for high units of water will decrease. Charging irrigation rates at or above the highest block rate for indoor water allows you to charge excessive rates for this discretionary use of water. The water system must adopt rules or ordinances requiring new residential, commercial, industrial and institutional customers to install separate irrigation meters which are required by law according to G.S. 143-355.4 and consider retrofitting current residential, commercial, industrial and institutional customers with irrigation meters. It is important for residential, commercial, industrial and institutional customers to have a separate irrigation meter, so it is more apparent how much water they are using for irrigation.

Schedule

Water systems pursuing this BMP should begin implementing it according to the following schedule:

- The water system should follow applicable regulatory procedures and adopt a

conservation-oriented rate structure within the first 12 months. The conservation rate structure should be designed to promote the efficient use of water by customer classes. Additional suggestions and guidance on setting up conservation-oriented rate structures are provided in *SWIC-Recommended Guidance for North Carolina Utilities Attempting to Support Water Conservation in the Long-Term through Rate Structure Design and Billing Practices* available at http://www.ncwater.org/Water_Supply_Planning/Water_Conservation/SWIC_11-22-10.pdf.

- At least annually, a water system should review the consumption patterns (including seasonal use) and revenue and expense levels to determine if the conservation rates are effective. The system should make appropriate, regular rate structure adjustments as needed.
- At least annually, the water system should provide information to all customers on the conservation rate structure.
- If not already in place, within five years or when the water system changes billing software (whichever is sooner), the water system bill should provide customers with their historical water use for the last 12 months and a comparison of water use with the other customers in their customer class. The rate structure should be clearly indicated on the water bill.

Scope

To accomplish this BMP, the water system should implement a conservation-oriented rate structure and maintain its rate structure consistently with this BMP's definition of conservation pricing and implement the other items listed in Section D above.

Documentation

To track this BMP, the water system should maintain the following documentation:

- A copy of its legally adopted rate ordinance or rate tariff that follows the guidelines of this BMP.
- Billing and customer records which include annual revenues by customer class and revenue derived from commodity charges and fixed charges by customer class for the reporting period.
- Customer numbers and water consumption by customer class at the beginning and end of the reporting period.
- If a water allotment is included in the minimum bill, a cumulative bill usage analysis similar to Figure C-3 in the AWWA M1 Manual. (See below)[1]
- A copy of the educational materials on the conservation rate sent to customers for each calendar year this BMP is in effect.
- An account of all system costs as identified in Section C.
- A water system bill meeting the parameters and schedule in Section E.

[1] *Principles of Water Rates, Fees, and Charges (M1 Manual)*, AWWA, 2000.

- Optional provisions:
  - A copy of the rule or ordinance requiring all new residential, commercial and industrial customers to install separate irrigation meters for in-ground irrigation systems that are connected to the water system's distribution network.
  - Implementation and schedule for an irrigation meter retrofit program for current commercial and industrial customers or a feasibility analysis of an irrigation meter retrofit program for current commercial and industrial customers.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Usage Block *Ccf*	Number of Bills in Block	Cumulative Bills Through Block	Total Use of Bills Stopping in Block *Ccf*	Cumulative Use of Bills Stopping in Block *Ccf*	Total Use to This Block of All Bills Passing Through Block *Ccf*	Cumulative Billed Usage *Ccf*	Cumulative Billed Usage %
0	4,134	187,836	0	0	0	0	0
1	11,531	183,702	11,531	11,531	172,171	183,702	14.6
2	18,013	172,171	36,026	47,557	308,316	355,873	28.4
3	24,317	154,158	72,951	120,508	389,523	510,031	40.7
4	20,089	129,841	80,356	200,864	439,008	639,872	51.0
5	20,065	109,752	100,325	301,189	448,435	749,624	59.8
6	17,141	89,687	102,846	404,035	435,276	839,311	66.9
7	13,807	72,546	96,649	500,684	411,173	911,857	72.7
8	11,468	58,739	91,744	592,428	378,168	970,596	77.4
9	14,909	47,271	134,181	726,609	291,258	1,017,867	81.1
10	7,943	32,362	79,430	806,039	244,190	1,050,229	83.7
11–15	13,149	24,419	167,764	973,803	169,050	1,142,853	91.1
16–20	5,635	11,270	92,309	1,066,112	112,700	1,178,812	94.0
21–25	2,817	5,635	60,576	1,126,688	70,450	1,197,138	95.4
26–30	784	2,818	22,823	1,149,511	61,020	1,210,531	96.5
31–50	1,389	2,034	49,027	1,198,538	32,250	1,230,788	98.1
51–100	564	645	39,569	1,238,107	8,100	1,246,207	99.4
101–250	72	81	11,617	1,249,724	2,250	1,251,974	99.8
251 and over	9	9	4,584	1,254,308	0	1,254,308	100.0

Figure C-3 Development of cumulative billed usage residential class-annual number of bills and usage-5/8-in. meters

Determination of Water Savings

The effect of conservation pricing implementation is specific to each water system. Elasticity studies have shown an average reduction in water use of between 1 percent and 3 percent for every 10 percent increase in the average monthly water and sewer bill. When implementing a conservation pricing structure, consideration should be given to the following factors:

- Average price is better than marginal price in explaining the quantity of water demanded by customers.

- Customers are typically unaware of their block rates.
- The water savings that accompanies a switch to a block rate may be lost in subsequent years if water rates are not increased to keep up with rising costs.
- Customers do not understand the link between water use and sewer billing. As such, customers do not tend to factor sewer prices into their water use decisions.
- Many studies and reports indicate price elasticities for the Southeastern United States of approximately -0.30, which translates into a reduction of 2 percent in water use for a 10 percent increase in price.

The water system should focus on a rate design that sends the appropriate price signal to customers to reduce discretionary water use. To remain effective, the rates need to be analyzed annually and adjusted periodically to account for rising costs and changes to the system's capital plan and operations.

Cost Effectiveness

The effectiveness of a water-conserving rate structure depends on how well it is designed and implemented. Each utility has a unique mix of single-family residential profiles and other customers and circumstances to consider. A cost effectiveness analysis can be done by comparing the cost of implementing this BMP to the anticipated water savings from adopting the conservation rate structure. The costs for implementing a rate structure change are associated with managing a stakeholder involvement process and costs for consultant services, if needed, and there may be one-time costs associated with developing and adopting ordinances and enforcement procedures. There may be significant costs associated with reprogramming the billing system if this step is necessary.

Other Considerations

While conservation pricing is a valuable tool to ensure the utility has adequate water for its customers, the utility must also ensure that the rates are adequate to provide for the day-to-day operations of the water system and the funds necessary for long-term system repairs and replacement.

The June 2012 Journal AWWA, contained an article by H. Edwin Overcast entitled "Is it time for water utilities to rethink pricing?" In the article, Mr. Overcast discussed how utilities face declining per capita consumption as a result of conservation measures, unpredictable weather patterns, and implementation of increasing-block rate structures. Faced with generally declining use per customer, water utilities are confronted with the unfortunate fact that revenues may not be sufficient to cover the cost of operation, maintenance, and debt service needed to keep the system of reservoirs, treatment plants, pumps, pipes, valves, fire hydrants and meters running.

One solution that Mr. Overcast discusses is recovering fixed capital cost associated with local infrastructure (distribution system-related fixed cost) through fixed monthly charges and recovering traditional volumetric-related cost through volumetric charges. This

option, called straight fixed-variable rate design has been adopted by other types of utility providers. Shifting customer cost from volumetric charge to fixed charge would likely require a phase-in period of a few years in order to mitigate the impact of such changes on the bills of the smaller-volume users.

For comments or questions regarding the Water Conservation Pricing BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9021.

References

- Principles of Water Rates, Fees, and Charges (M1 Manual), AWWA, Sixth Edition 2012.
- Residential End Uses of Water, AWWA Research Foundation, 1999
- Setting Small Drinking Water Systems Rates for a Sustainable Future, EPA Office of Water, January 2006.
- Water Price Elasticities for Single-Family Homes in Texas, Texas Water Development Board, August 1999.
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- Is it time for water utilities to rethink pricing?, Journal AWWA, June 2012
- SWIC-Recommended Guidance for North Carolina Utilities Attempting to Support Water Conservation in the Long-Term through Rate Structure Design and Billing Practices, http://www.ncwater.org/Water_Supply_Planning/Water_Conservation/SWIC_11-22-10.pdf, November 2010.

DRAFT

Case Study for Water Conservation Pricing

Orange Water and Sewer Authority (OWASA)

Carrboro, North Carolina

Background

OWASA was established in 1977 to consolidate the water and sewer facilities and operations previously owned and operated by the University of North Carolina at Chapel Hill, and Carrboro in southeastern Orange County. OWASA is governed by a nine-member board of directors appointed by the two towns and Orange County. It now serves about 80,050 people through nearly 21,000 customer accounts.

OWASA is financially self-sustaining and funded primarily by customer revenues from monthly water and sewer charges and from one-time service availability fees (system buy-in charges) paid by new customers when they connect to the water, sewer and/or reclaimed water system. Revenues remaining after the payment of current operating expenses and debt service are used to pay for rehabilitation, replacement, improvement, and expansion of the utility systems. Unlike other local government utilities, OWASA's revenues cannot be used for non-utility related purposes.

OWASA does not receive any tax revenues, but it has received some limited state and federal grant funds to offset certain capital expenditures.

In 2001, OWASA completed a comprehensive water and sewer master plan which identified the need for water and wastewater system infrastructure capacity expansions to meet projected increases in local water and sewer service demands. At that time, the peak-day water demand ratio was about 165 percent, and the ratio of wastewater flow during the maximum month to the flow during the average month was about 140 percent.

In May 2002, OWASA implemented a seasonal water rate structure to replace the previous year-round uniform block rate structure. The utility put the seasonal water rate structure in place to reduce peak-day demands, defer the need for future capacity expansions, and promote greater conservation of the community's essential water resources. Coincidentally, the new seasonal rate structure was followed by the drought of record, which reduced the remaining supply in OWASA's Cane Creek Reservoir and University Lake to an all-time low of less than 32 percent of total storage.

The seasonal rate structure remained in place for all OWASA customers until May 2007, when OWASA implemented a five-tiered increasing block rate structure for individually-metered residential customers. Seasonal rates remained in place for all other customer classes. OWASA also adopted a new system of water rate surcharges under which water rates would increase as the severity of a declared drought increases.

As occurred in 2002, implementation of these new conservation pricing policies was followed by an extreme drought.

As other utilities have experienced, OWASA's usage charge revenues declined as water sales dropped. OWASA offset a portion of the revenue reductions by deferring or eliminating certain operating, maintenance and capital expenditures. However, rate increases were required to pay for increasing expenses while ensuring financial stability in the face of reduced water sales. The increased rates sent an even stronger pricing signal to OWASA customers, and have likely further contributed to the substantial demand reductions across all customer classes. For a typical residential customer billed for 4,000 gallons of water and sewer service each month, OWASA's combined charges have increased from $34.12 a month in 2001 to $70.66 a month in 2012. That is a compounded rate of increase of about 6.25 percent a year.

OWASA's conservation rates, together with education and outreach efforts, implementation of a new reclaimed water system, and installation of water efficient fixtures by many OWASA customers, have resulted in a dramatic reduction in raw water pumping requirements and average-day use by OWASA's customers.

Since 2002, OWASA's customer base has increased by about 11 percent. However, average-day water sales declined by more than 25 percent during that same period, while the accounted for water ratio has remained constant. The average billed water use per metered connection (including both drinking water sales and reclaimed water sales) has declined from about 470 gallons per day in 2002 to about 350 gallons per day in 2011.

There have been similar reductions in the peak demands on OWASA's water and wastewater infrastructure. During the past five years, the average peaking ratios for the water plant and wastewater plant have declined to less than 145 percent and 120 percent, respectively.

This has enabled OWASA to revise its capital improvements plan to defer plans for expansions of its water and wastewater treatment plants. It has also reduced the amount of energy and chemicals needed to meet the community's water needs. The reductions in drinking water demands have helped reduce the community's risk to extended droughts.

All these benefits will be important as OWASA strives to meet local water and sewer service demands in a more sustainable manner.

For more details about OWASA's water conservation pricing, go to http://www.owasa.org/client_resources/customerservice/owasa%20is%20well%20positioned%20for%20the%20future--%202011%20owasa%20customer%20letter.pdf.

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Full-Cost Water Pricing

Background

Many utilities have historically based their water rates on the cost of water treatment only and have not been able or willing to include the cost of the replacement of the water treatment, storage and distribution systems. Those replacements will come in future years. While this method has resulted in lower water rates for the system's customers, historically based water rates??WHAT DOES "IT" REFER TO? have not acknowledged the full-cost of providing water. Water systems, like all other man-made systems, have a useful life expectancy. Water system management must incorporate the cost of upgrading, maintaining and replacing this infrastructure into their water pricing.

Full-cost pricing is when the water system ("utility") charges customers for the actual cost of water service. This will guarantee the utility the revenue needed to cover at a minimum the costs of operation, treatment, storage, distribution and for past and future investments. Full-cost pricing is a pricing structure for drinking water and wastewater service, which fully recovers the cost of providing that service. Full-cost pricing should be implemented in an economically efficient, environmentally sound and socially acceptable manner. Full-cost pricing should also promote efficient water use by customers.

Water systems must base their rates on the true costs of providing water in order to have the resources available for proper system maintenance and for paying for current capacity as well as future upgrades and replacements. Availability of state and federal funds to assist with this work are limited, therefore utilities must be prepared to fund these upgrades and replacements using their own resources. The sooner a system's water rates are based on the full-cost pricing, the sooner the needed upgrades and replacements can be completed. With proper planning, the work can be completed prior to any major system failures. This planning should not only prevent system failure, but also prevents sudden, major rate increases in the future that would be needed to repair the failing systems.

Full-cost pricing:

- Is essential for sustainability and economic efficiency; accurate pricing encourages efficient production and use.
- Ensures rates are sufficient and that there is a stable source of funds and reserves.
- Ensures a water system's financial health, enabling the utility to provide safe water now and in the future.
- Provides information on costs to customers, such as the value of the product they are purchasing.
- Helps customers recognize the value of the service and be more aware of their water use.

According to North Carolina's 2008 Drought Bill (Session Law 2008-143), Section 9-G.S.143-355.4(b)(1), water rate structure should be adequate to pay the cost of maintaining, repairing and operating the system. That includes reserves for payment of principal and interest on indebtedness incurred for maintenance or improvement of the water system during periods of normal use and periods of reduced water use due to implementation of water conservation measures. In addition, water rates should be sufficient to pay for future capital costs, whether up-front or through debt service of future loans.

Once the full-cost (the true cost of providing water) has been established, the next step must be to determine how this cost will be distributed to the system's customers. Often the cost of water has not been established at a level that encourages the efficient use of available water. In fact, in some cases the use of decreasing block rates have actually resulted in less incentives for water conservation.

Applicability

This BMP is intended for all water systems wishing to recover the full-cost of supplying water to their customers and to send price signals to customers that will encourage water conservation. A water system may have already accomplished this BMP if it currently has a price structure that recovers the true cost of supplying water.

Description

Full-cost pricing is the use of rate structures to provide for the financial security of a water system. Using this BMP, water systems should consider establishing rates based on long-run marginal costs, or the cost of adding the next unit of capacity to the system. An established cost of service methodology should be followed whenever rates are developed or proposed for change.

This BMP addresses pricing structures for retail customers. For water systems supplying water and sewer services, the principles contained in this BMP can be applied to the pricing of both services. Water systems that supply water, but not sewer service should make good faith efforts to work with sewer agencies so the sewer agencies do not provide sewer services using a pricing structure that conflicts with the objectives of the water pricing structure.

For full cost pricing structures to be effective, customers must be educated on the reasons for the system's rate structure. An explanation of the rate structure should be included with each customer's water bill.

Determining Full-Cost Pricing

Full-cost pricing for water utilities is based on the cost of maintaining, repairing and operating the system. This pricing includes reserves for payment of principal and

interest on indebtedness for the maintenance or improvements, and future capital expenses such as expected debt service. There are many ways to account for your system's costs. You should pick one that works well with your current accounting system and that supports the rates you plan to use. Any approach must fully account for all costs related to the provision of water. To estimate these costs, review records of the last year's expenditures and account for changes to operating costs and capital projects expected to be completed during the next five years-to-20 years. All utilities should create a capital improvement plan that estimates future capital costs in each year for the next five years-to-20 years, and incorporate it into full-cost pricing.

Cost components are calculated annually, and can be categorized into three different areas: personnel costs, non-personnel costs, and capital reserves (debt service set-aside and reserves for future capital costs).

Personnel Costs:

- Salaries and wages for administrative and operations and maintenance personnel.
- Labor costs for services required in the operations of the system including:
    - Treatment.
    - Monitoring.
    - Maintenance.
    - Testing.
    - Meter reading and billing operations.
    - Customer Service.
    - Legal and Accounting.
    - Engineering, if applicable.
    - Management.
    - Benefits for personnel including:
        - Medical Insurance.
        - Retirement.
        - Vacation.
        - Bonuses.

Non-personnel Costs:

- Cost for office operations including:
    - Space rentals.
    - Mortgages.
    - Office supplies.
    - Computer and lab equipment.
    - Contracts.
    - Cost for utilities including:
        - Electricity.
        - Natural Gas.
        - Communications.

- Water purchased from other systems.

When estimating future utility costs and revenues, you will likely need to forecast the total annual water use. Examine your billing data to determine the total annual sales as well as your records for water withdrawals each year to predict future demand.

- Cost for supplies to operate the system including:
  - Chemicals.
  - Leased equipment.
  - Routine maintenance and repair costs at facility sites, and for equipment and vehicles.
  - Insurance costs covering buildings, vehicles, and personnel.
  - Costs for professional services such as accounting, legal and engineering if not done in-house.
  - Permitting costs.
  - Costs for career development and certification renewals for personnel.
  - Costs for residuals disposal.
  - Costs for security and surveillance.

Capital Reserves and Debt Service Set-Aside:

Sufficient revenue must be allocated to make principal and interest payments on current and future indebtedness, and for capital expenses that will be paid in cash. Debt service excludes mortgages, but covers investments for capital projects needed to maintain the safe operation of your system. The timing of investing in system assets is an integral component to determining sufficient reserves, and should be addressed in your Capital Improvement Plan. Projects for which capital reserves and debt service set-asides should be allocated can include:

- Rehabilitation and replacement of existing assets, including pipes, pumps, control systems, tanks, etc.
- Expansions and upgrades of the treatment and distribution systems.
- Interconnections to other systems.
- Source water development and protection.
- Any other interest owed by the system.

Managing system assets should be addressed in your asset management plan. Asset management can be a lengthy process. It involves following five steps that will help you determine how much money should be placed in a reserve fund each year. Asset management is a part of your capital improvement plan. The five steps are to:

- Develop an inventory of all of your assets by listing them and collecting information on the condition, age, service history and useful life of each one.
- Prioritize your assets to help you decide how best to allocate your limited resources. Priority should be based on the asset's importance ("criticality") to the operation of your system and the protection of public health. Other factors to

consider include how soon you will have to replace the asset and whether other pieces of equipment can perform the same function (redundancy).
- Determine the costs of asset rehabilitation and replacement.
- Decide what percentage of these costs you will cover with cash (i.e., money you set aside in the reserve account), and how much you will cover through debt. In some cases, it may make more financial sense to borrow money to cover the initial cost of the project and pay those costs over a longer period of time, even with interest payments.
- Review and revise your plan. Your asset management plan should be used to help you shape your capital improvement plan. It should evolve as you gain more information and as your system's assets and utility's priorities change.

Following this process will help you determine how much money must be generated through water rates to fulfill your capital improvement plan.

Determine the costs associated with operating, maintaining and repairing your system. Then, tally those costs to determine the full-cost pricing of water. These full cost data should be reviewed annually and adjustments made to future budgets as appropriate.

Required Revenue Determination:

After determining your costs, you will need to calculate how much revenue you collect each year to offset these costs. Revenue sources can include:

- Water sales.
- Fees and service charges.
- Tap or connection charges.
- Interest.
- Grants.
- Transfer payments from other funds (this practice is not recommended for any public enterprise fund).
- Private investments.
- Other sources.

Now that you have a better sense of your costs, revenues and reserves, you are ready to determine how much revenue will be needed from customers each year to cover any shortfalls. To cover the full cost of doing business (i.e., to meet the goals of full-cost pricing), the amount of revenue that you receive from your customers should equal your total annual costs including your annual set-aside contribution minus any subsidies or transfer payments you receive.

Required Customer Revenue = Total Annual Costs MINUS Subsidies MINUS Transfer payments MINUS Other Revenues

You will need to calculate your required revenue annually, taking into account your budget for the upcoming year. In addition, you will need to think beyond your needs for

the next year. Variable costs, changes in subsidies, debt service costs, and other factors can affect your required revenue from year to year. Estimating costs for the next several years based on your fixed costs, operating expenses, asset rehabilitation and repair needs, and existing debt service can help avoid a significant gap between future revenue and costs. Once you have a better idea of actual costs, you can revise your estimates accordingly.

Now that you know your costs and the amount of money you need to collect from your customers to fully cover those costs, you are ready to start thinking about how you're going to collect this money. One way is through setting appropriate rates for water used by your customers that will account for your full cost.

Implementation

Full-cost pricing is best introduced over time and in multiple steps. Some of these steps include:

- Evaluating all the costs associated with the utility and incorporating adequate accounting programs.
- Implementing reporting procedures.
- Monitoring and documenting usage patterns for various sectors of users.
- Educating consumers on the value the utility provides.
- Planning for reserves necessary to fund the maintenance and upgrades required.
- Planning for the future and forecasting revenue requirements.
- Determining the actual cost of service.
- Applying an asset management program.
- Evaluating and optimizing all aspects of the system (treatment, operations, metering, billing, distribution, debt instruments, etc.).

A rate structure that allows the utility to be self-sustaining is a balanced approach to utility management. Given the constraints discussed above, the structure of cost-based rates will vary by community. In the long run, full-cost pricing is imperative for every utility.

Successful adoption of a new rate structure may necessitate developing and implementing a public involvement process in order to educate the community about the new rate structure. The new rate structure should adhere to all applicable regulatory procedures and constraints. If the conservation pricing structure to be implemented is substantially different from current practices, then a phased-in approach may be appropriate.

Public involvement in the development and implementation of rates can help assure that the goals of the full-cost pricing initiatives will be met and accepted by local constituents. Public meetings, advisory groups and public announcements are among ways to generate public involvement.

Schedule

Water systems pursuing this BMP should begin implementing it at the earliest possible date. Although the implementation of full-cost pricing will likely have a significant impact on a system's water rates, the longer implementation is aimed at delaying the more severe the impacts on the system's customers. These future impacts will come in the form of system failures resulting in the inability to provide an adequate and safe water supply to the system's customers. These impacts may also come in the form of the adoption of water rates that far exceed those that could have been implemented earlier with sufficient planning.

The implementation of full-cost pricing will take a major commitment by the system's management and its customers. The easy path is to continue to ignore the problem and leave the pending system failures and resulting major rate increases for others.

The key with full-cost pricing is to explain the need for the proposed rate structure and the consequences of inaction. The educational process starts with the system's management and staff and then quickly moves on to the system's customers.

Scope

To accomplish this BMP, the water system must determine the full cost for the operation of the system and set water rates at a level to meet these current and future needs. Management must also maintain these funds for their intended purposes and not divert them for other needs.

Documentation

To track this BMP, the water system should maintain the following documentation:

- A copy of its legally adopted rate ordinance or rate tariff that follows the guidelines of this BMP.
- Billing and customer records that include annual revenues by customer class and revenue derived from commodity charges and fixed charges by customer class for the reporting period.
- A copy of the education materials on full-cost pricing sent to customers for each calendar year this BMP is in effect.
- An account of all system costs.
- An asset management plan, last updated within the past two or three years.
- A capital improvement plan, last updated within the past two or three years.
- A water system bill meeting the parameters and schedule in Section D.

Other Considerations

While conservation pricing is a valuable tool to help ensure that the utility will have adequate water available for all its customers, the utility must also ensure the rates are

adequate to cover the day-to-day operation of the water system and the system's long-term system repairs or replacement.

The June 2012 Journal AWWA, contained an article by H. Edwin Overcast titled "Is it time for water utilities to rethink pricing?" In the article, Overcast discussed how utilities face declining per capita consumption as a result of conservation measures, unpredictable weather patterns, and implementation of increasing-block rate structures. Faced with generally declining use per customer, water utilities are confronted with the unfortunate fact that revenues may not be sufficient to cover the costs of operation, maintenance and debt service needed to keep the system of reservoirs, treatment plants, pumps, pipes, valves, fire hydrants and meters running.

One solution Overcast discusses is recovering fixed capital cost associated with local infrastructure (distribution system-related fixed cost) through fixed monthly charges and recovering traditional volumetric-related costs through volumetric charges. This option, called straight fixed-variable rate design has been adopted by other types of utility providers. Shifting customer costs from volumetric charge to fixed charge would likely need to be phased in over a few years in order to mitigate the impact of such changes on the bills of the smaller-volume users.

For comments or questions regarding the full-cost pricing BMP, please contact the water efficiency specialist of the Water Supply Planning Branch at 919-707-9021.

References

- Principles of Water Rates, Fees, and Charges (M1 Manual), AWWA, 2000.
- Residential End Uses of Water, AWWA Research Foundation, 1999 http://www.allianceforwaterefficiency.org/residential-end-uses-of-water-study-1999.aspx
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- SWIC_11-22-10.pdf, November 2010.

- Town of Cary Elasticity Analysis, prepared by Keith Bishton and Dave Green- ftp://199.72.17.76/Engineering/IntWatResMP/Appendices/Appendix_C_Price%20Elasticity%20TM_05042007.pdf



Water Purchasing Contracts

Applicability

This BMP is intended for all water systems ("utility") that purchase or sell water. A utility may have already accomplished this BMP if it has a written contract to purchase or sell water.

Description

In order for many water systems ("utilities") to meet the water supply needs of their customers, they must contract with other utilities to supply the needed water. When these contracts are developed and formalized, it is important that the seller and the buyer have a complete understanding of the requirements and expectations of the contract.

Some of the obvious contract requirements that should be documented are the volume of water committed for sale or purchase, how the cost of the water will be determined, the length of the contract, if the contract is renewable and if the contract will be used on a regular or emergency basis. The contract should also indicate if the buying system is required to comply with all of the selling system's water use restrictions when implemented. Open contracts in which a utility verbally agrees to sell water to another utility should be avoided. It is important for both utilities to maintain contractually agreed upon water volumes to facilitate good planning practices. Utilities that list contract water volumes on their local water supply plans will also facilitate a quicker review and approval of their plan.

Another important part of the contract is the conditions that will be placed on the buyer concerning efforts to implement BMPs for water conservation.

In accordance with Session Law 2011-374, all local water supply plans must include a plan for the reduction of long-term per capita demand on potable water. Since the utility selling the water must implement BMPs to meet this requirement, it would be appropriate for the sales contract to require the buying utility to also implement BMPs to reduce potable water demand. The implementation of BMPs will help reduce the amount of water used and reduce the cost of the water to the utility.

Some of the BMPs that should be considered for inclusion in the contract are requirements for:

- Water Efficiency and Conservation.
- Water Audits.
- Water Loss Abatement.
- Metering.
- Retrofitting of Residential Fixtures.
- Public Information Program.
- School Education and Outreach.

- Retrofitting Irrigation Systems.
- Regionally Approved Landscaping.
- Rainwater Harvesting, Condensate Reuse and Gray Water use.

Implementation

Utilities pursuing this BMP should begin implementing it according to the following procedure:

- Review all the wholesale water purchases and sales contracts.
- Use the sample contract enclosed (contract will be obtained from NCLM) to negotiate with the purchaser or seller on price and volume.
- Decide which water efficiency practices will be asked of the purchasing entity.

D. Schedule

To accomplish this BMP, the utility should do the following:

- The utility should develop procedures for implementation of this BMP in the first six months. The procedures should include an annual, or at least a five year review, of all information related to the established contract.
- The contract participants should develop procedures for making changes to and maintain a proactive review of the contract.

Scope

To accomplish this BMP, the utility should implement a contract in six months and maintain a copy of the contract at the town or city hall and water treatment plant. The town or city manager, as well as the water system manager/ORC should be well-versed with the terms of the contract.

Documentation

To track this BMP, the utility should maintain the following documentation:

- A copy of its legally adopted contract should be held at town or city hall, as well as at the water treatment plant.
- A review should be made at regular intervals (annually, or at least every five years) of the contract and its applicability.
- A copy of any changes or modification to the contract should be officially amended by adoption.

Determination of Water Savings

Water savings can be tracked through performance of annual water audits and implementation of other BMPs to conserve water. Water savings for the selling and

buying utility should be realized as a result of contract conditions requiring the implementation of BMPs.

Cost Effectiveness

The cost effectiveness of implementing this BMP can be determined based on how effective the BMPs enacted by the buying utility's reduced water use. Although a true cost-effectiveness analysis cannot be determined without a measure of water savings prior to establishing a contract, the point at which this BMP is implemented can serve as the benchmark year, and successive years that reveal a reduction in water used can be used to calculate cost savings by the selling and buying utility. This BMP is an integral part of a best management practice program, and should be considered fundamental to a successful water efficiency program. In addition, by implementing this BMP, the selling utility can assure the needed water supply to the buying utility.

For comments or questions regarding the Water Purchasing Contracts BMP, please contact the water resources specialist of the Water Supply Planning Branch at 919-707-9035.

Additional Inter-local Water Agreements Tips

The UNC Environmental Finance Center has developed guidelines for the crafting of inter-local agreements. These guidelines provide extensive information on items to consider when drafting water supply contracts. Those items can include service area and annexation, which party is responsible for maintaining the meter, water quality issues, water pressure requirements, how and when water rates will change, re-selling of the water it purchases to other systems, nonrevenue water, and inflow & infiltration (I&I. These guidelines can be found at:
http://www.efc.unc.edu/publications/2009/water_partnership_tips.pdf.

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Purchase Water Contract Sample

State of North Carolina
County of _____

WATER SERVICE UTILITY AGREEMENT

THIS AGREEMENT, made and entered into this ____ day of _____, 20__ by and between the _____, a North Carolina (Authority, City, County, Private Entity, Sanitary Districts, Town, etc.), hereinafter referred to as "PROVIDER and the _____, a (Authority, City, County, Private Entity, Sanitary Districts, Town, etc.), hereinafter referred to as "CUSTOMER";

WHEREAS, the CUSTOMER wishes to procure a source of treated drinking water suitable for re-sale to it citizens, residents and industries; and

WHEREAS, the PROVIDER has treated drinking water available for sale to CUSTOMER; now, therefore;

WITNESSETH:

That in consideration of, and subject to, the terms and conditions hereinafter set forth, the parties covenant and agree as follows:

1. Purpose. The purpose of this Agreement is to set forth the terms and conditions by which CUSTOMER shall purchase, and PROVIDER shall sell, treated drinking water for re-sale by CUSTOMER to its constituent citizens, residents and industries.

2. Purchase and Sale. CUSTOMER agrees to buy from PROVIDER and PROVIDER agrees to sell and deliver to CUSTOMER water on the terms and conditions hereinafter set forth. The water being sold by PROVIDER shall at all times meet the standards for safe drinking water as promulgated at 40 CFR, sections 140 through 143, pursuant to the terms of the Safe Drinking Water Act at 42 USCA, all as amended from time to time, which standards have been adopted by the State of North Carolina Department of Environment and Natural Resources, under which standards PROVIDER produces water at its water treatment plant.

3. Term. This Agreement shall be effective from and after, _____ and shall continue and remain in full force and effect until and including _____ (__ years). Either party hereto may, at any time prior to the beginning of the year before the expiration of this Agreement, give notice to the other of its desire to renew this Agreement and upon the giving of such notice, the parties hereto shall negotiate in good faith with reference to a renewal of this Agreement.

4. Construction of Water Line Appurtenances. Following permit approval by the Public Water Supply Section of the Division of Water Resources; the CUSTOMER at its own expense shall connect its water system to that of the PROVIDER in accordance with permitting and sound engineering practices as mutually agreed upon by both parties regarding pumping capacity, size and type of materials, workmanship and location. The water line, pumps (if required) and connections shall be referred to hereinafter as "The Pipeline". The metering point(s) shall be mutually agreed upon by both parties and installed by CUSTOMER at its own expense per PROVIDER specifications and permit approval.
5. Ownership and Maintenance. The CUSTOMER will own and maintain the Pipeline up to the metering point(s). The metering point(s) will be owned and maintained by the PROVIDER. The CUSTOMER will be responsible for the cost of meter replacement when necessary.

6. Maximum Usage Limit. The CUSTOMER shall have the privilege to receive water from the PROVIDER water system with a maximum daily consumption not to exceed _____ gallons per day.

7. Treated Water Charge. The purchase rate for treated water from PROVIDER to CUSTOMER will be $_____ per thousand gallons.

8. Invoicing. Bills for water supplied hereunder shall be rendered and paid monthly.

9. Water Related Restrictions. CUSTOMER shall be subject to PROVIDER's water conservation/restrictions policies in effect at the time of execution of this Agreement and as they may be amended. Accordingly, CUSTOMER's water supply may be preempted in the same manner and fashion as all other water users of PROVIDER.

10. Long-term Per Capita Reduction.
In accordance with Session Law 2011-374, all local water supply plans must include a plan for the reduction of long-term per capita demand on potable water. Since the PROVIDER must implement Best Management Practices (BMPs) to meet this requirement, it is required for the CUSTOMER to also implement BMPs to reduce potable water demand. The PROVIDER will supply a list of BMPs they have implemented to the CUSTOMER as measures to implement or the Customer must demonstrate to the Provider that comparable BMPs have been previously implemented or will be implemented on an established schedule.

11. Interruption of Service. Whenever practicable, PROVIDER will notify CUSTOMER with at least twenty-four (24) hours notice prior to any interruption of service necessary due to planned maintenance, repairs or other foreseeable extent of interruption. When interruptions of service are due to emergency situation, which cannot be foreseen, the affected party will be notified as soon as possible as to the estimated duration and extent of the interruption.

12. Amendment or Termination. This Agreement may be amended or terminated only by an instrument in writing executed by both parties hereto.

IN WITNESS WHEREOF, the undersigned municipal corporations have caused this Agreement to be executed on their behalf by individuals duly authorized, all as of the day and year first above written.

PROVIDER_____

_____
Mayor or Manager of PROVIDER

ATTEST:

_____
PROVIDER Clerk

PROVIDER_____

_____
Mayor or Manager PROVIDER

ATTEST:

_____
PROVIDER Clerk

STATE OF NORTH CAROLINA
COUNTY OF _____

I, _____, a Notary Public of the aforesaid County and State, so hereby certify that _____, personally appeared before me this day and acknowledged that she is the (Deputy) PROVIDER Clerk of the PROVIDER of _____ and that by authority duly given and as the act of the PROVIDER, the foregoing instrument was signed in its name by its _____, sealed with its corporate seal and attested by her as its (Deputy) PROVIDER Clerk.

WITNESS my hand and Notarial Seal, this the ____ day of _____ 20__.

_____
Notary Public

My Commission Expires: _____

STATE OF NORTH CAROLINA
COUTNY OF _____

I, _____, a Notary Public of the aforesaid County and State, so hereby certify that _____, personally appeared before me this day and acknowledged that she is the (Deputy) PROVIDER Clerk of the PROVIDER_____ and that by authority duly given and as the act of the municipal corporation, the foregoing instrument was signed in its name by its _____, sealed with its corporate seal and attested by her as its (Deputy) PROVIDER Clerk.

WITNESS my hand and Notarial Seal, this the ____ day of _____ 20__.

_____
Notary Public

My Commission Expires: _____

DRAFT

Agricultural Water Use

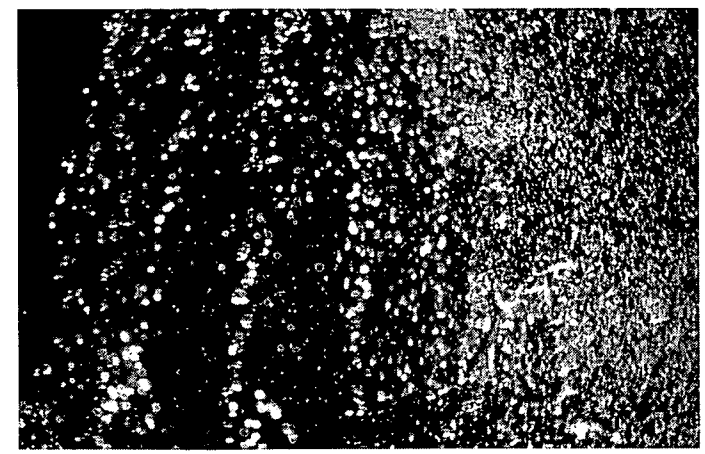
2011

- Drought in 2007-08 raises awareness of water supplies in North Carolina
- Legislation is discussed to better manage the state's water resources
- Information for agricultural water use is available for the CCPCUA (15 counties) but not statewide (except over 1 mil GPD)
- SL2008-0143 is passed in 2008 – Section 2 outlines collection of agricultural water use data



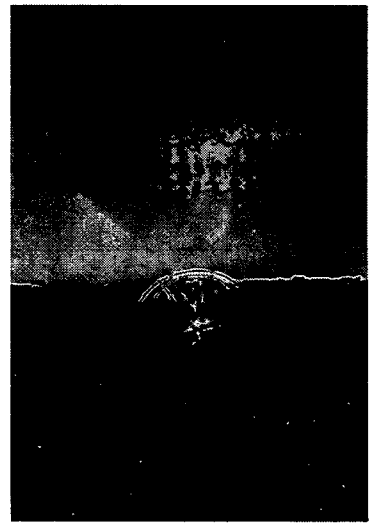
Legislation Requirements

- Annually collect water use data from operations using 10,000 GPD or more
- Collaborate with DENR in design of form
- Publish results by July 1
- Voluntary and Confidential

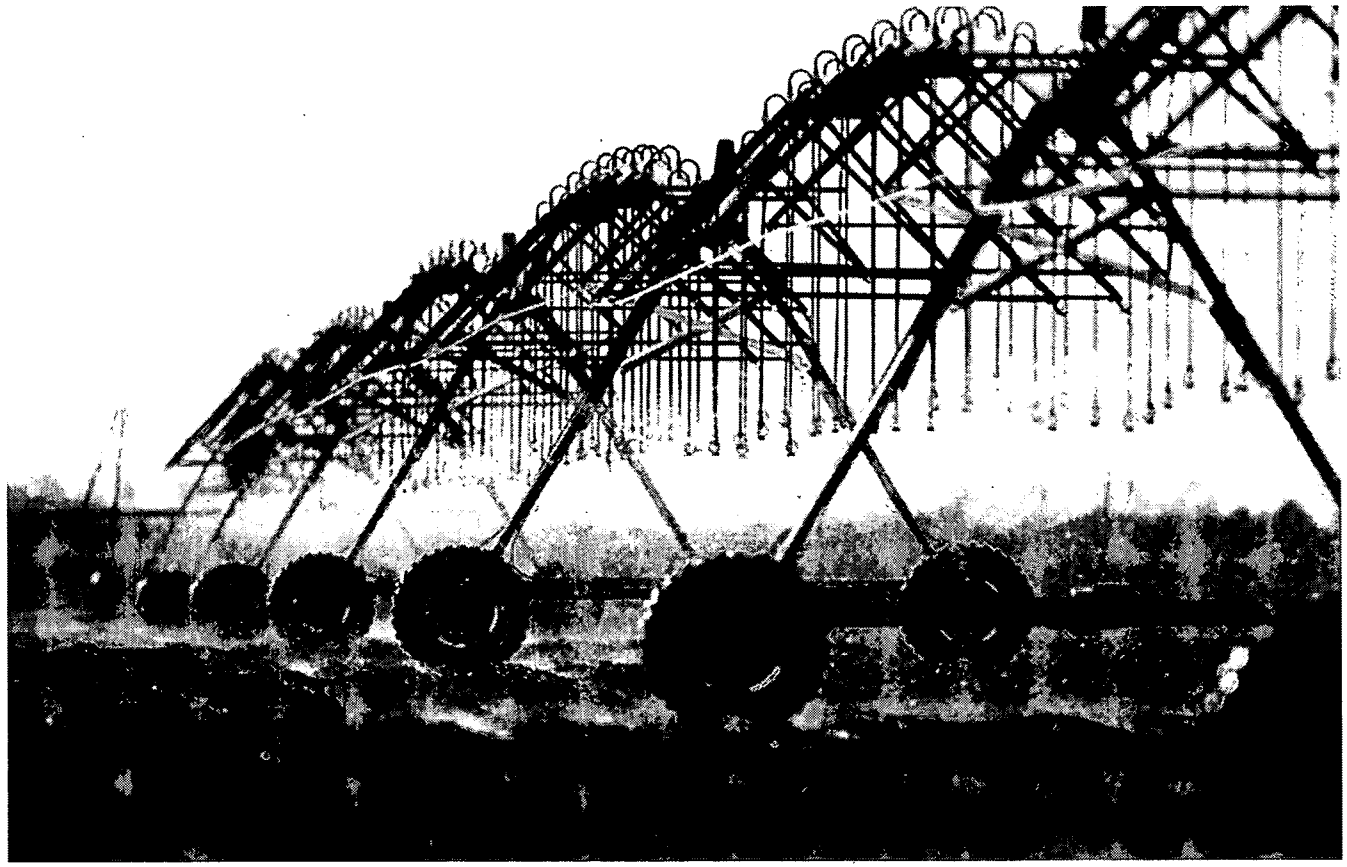


Survey Promotion

- Statewide WebCast September 2008
  - Commissioner Troxler, NCDA
  - Larry Wooten, President, NC Farm Bureau
  - All Commodity & Ag Organizations invited
- Commodity meetings
- County meetings
- Extension Offices



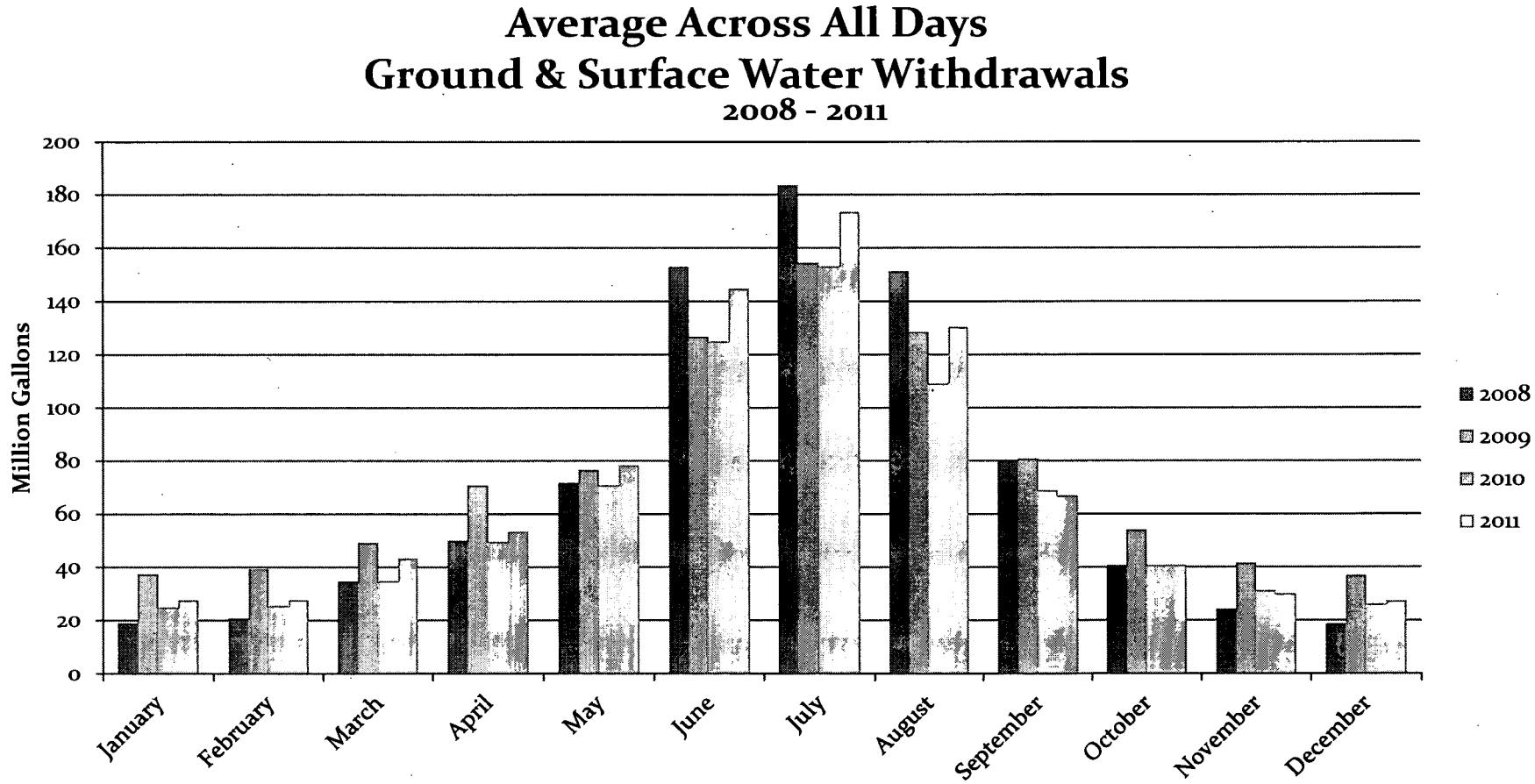
Survey Results - 2011



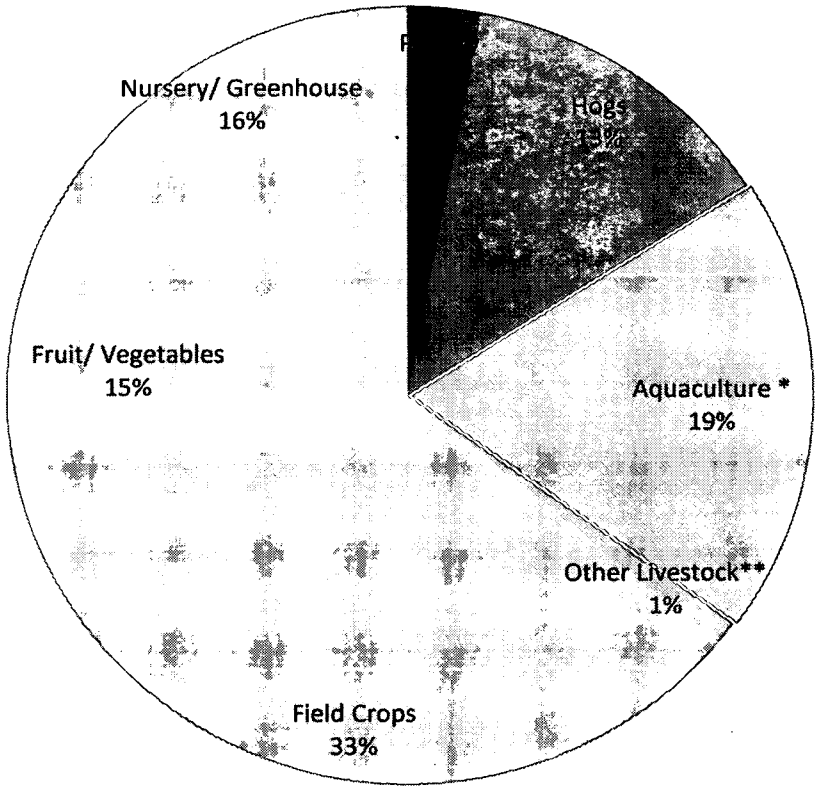
Highlights

- 89% Response Rate
- # of Operations using 10,000 +
  - 2011 - 1308
  - 2010 – 1420
  - 2009 – 1372
  - 2008 - 1498
- Average Daily Use
  - 2011 – 70.3 million gallons
  - 2010 – 63.3 million gallons
  - 2009 – 74.6 million gallons
  - 2008 – 70.5 million gallons

Historical Comparison by month

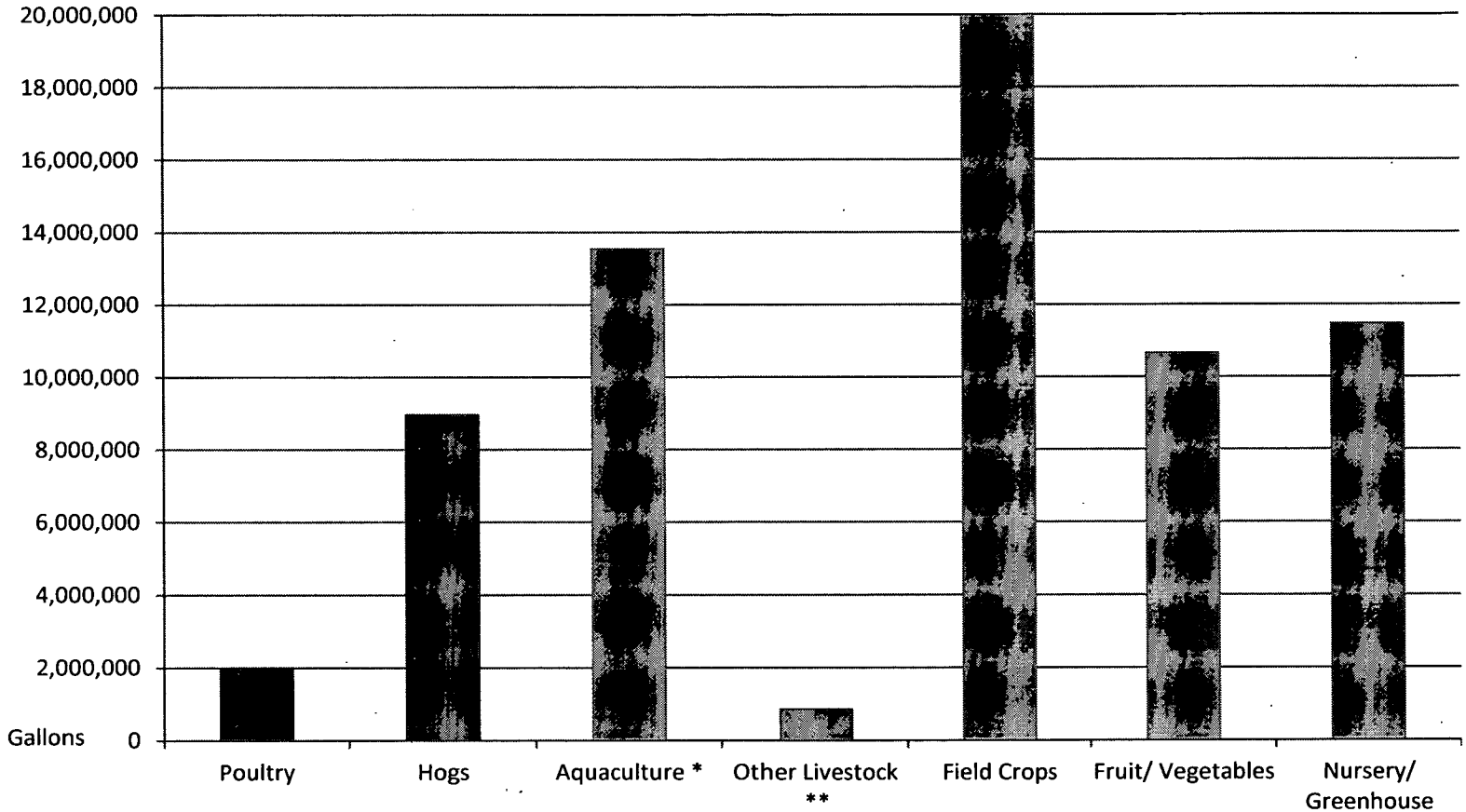


Annual Water Withdrawals by Percent



* 97% of aquaculture water withdrawals occur in western counties from rivers and streams and are typically flow through/non-consumptive.** Other Livestock includes cattle, horses, goats, sheep, etc.

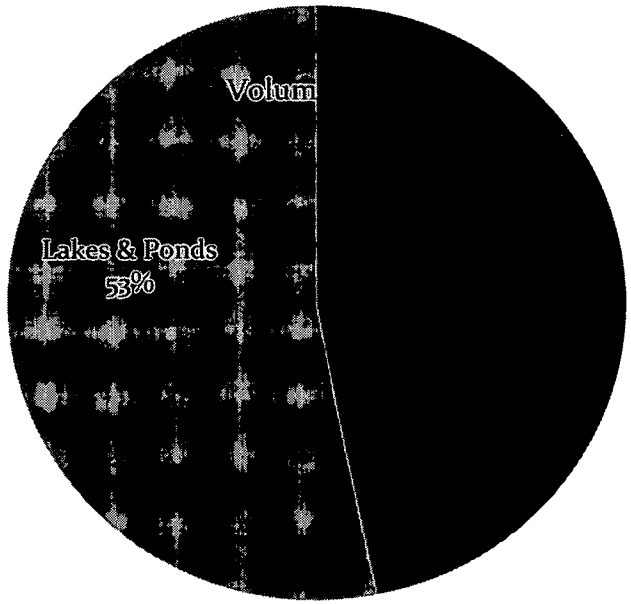
Average Daily Water Withdrawals



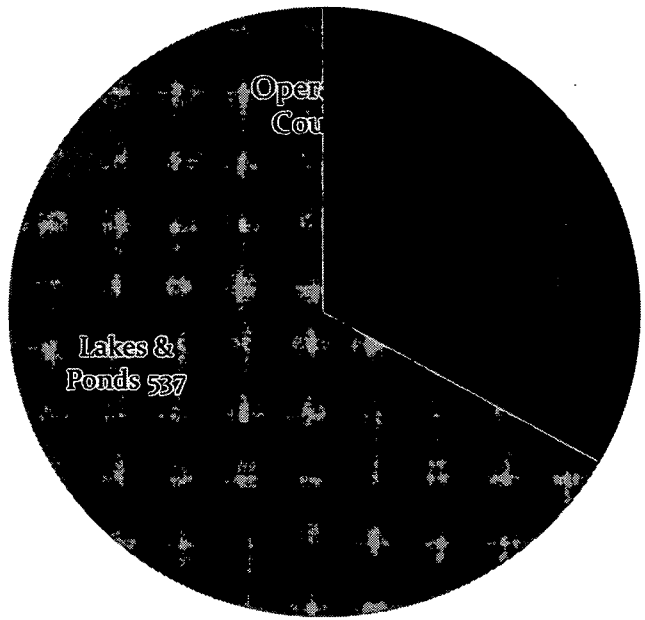
* 97% of aquaculture water withdrawals occur in western counties from the rivers and streams and are typically flow through/non-consumptive. ** Other Livestock includes cattle, horses, goats, sheep etc.

Annual Surface Water Withdrawals

Volume



Operation Counts



* 33% of River & Stream Withdrawals are made by aquaculture operations from the western portion of the state and are typically flow through.

Benefits

- Statewide agricultural water use data
  - Survey based
  - Defensible
  - Confidential
- Public/private collaboration
- Farmer awareness of use
- Document individual farm water needs



Appreciation



- NCDA&CS
- Farm Bureau
- Commodity Associations
- NC Cooperative Extension
- NCSU
- NC Foundation for Soil and Water Conservation

Steven W. Troxler
Commissioner

North Carolina Department of Agriculture and Consumer Services

July 2, 2012

Honorable Members of the Environmental Review Commission:

On behalf of the Statistics Division of the North Carolina Department of Agriculture and Consumer Services, I respectfully submit to you the results of the 2011 Agricultural Water Use Survey. As in 2009 and 2010, this report was prepared to fulfill the requirements of N.C. Gen. Stat. § 106-24(b), as amended by Session Law 2008-143.

As required by 7 U.S.C. § 2276, the report includes aggregated data for the entire state. In the coming weeks, the Department will also release aggregated county and river basin water use data, where such information can be produced with accuracy and in compliance with federal law.

More than 3500 farms were contacted with an 89% response rate showing 1308 farms withdrew over 10,000 gallons or more water per day. It continues to be a significant fact that, when comparing historic total ground and surface statewide withdrawals of water for agricultural production with total withdrawals from all users (nonagricultural and agricultural combined, as recorded by the Department of Environment and Natural Resources and currently reported on their website), the survey demonstrates that agricultural use in 2011 on an average daily basis accounted for less than 1% of all withdrawals.

I hope that the information supplied here is useful as you continue to discuss legislation and policy which has implications for our farmers and agribusinesses. Our staff is available to answer questions regarding the survey and its results, and I trust you will call upon them as needed. They are extraordinary, and their work is made much easier as a result of the partnerships we have with the Department of Environment and Natural Resources and the many agricultural organizations across North Carolina who have promoted this survey. I look forward to working with each of you to preserve and promote the agricultural industry in the months and years ahead.

Sincerely,

Steve W. Troxler

cc: Tom Reeder, NC Department of Environment and Natural Resources
Dee Webb, Acting Director, NC Field Office, National Agricultural Statistics Service

E-mail: Steve.Troxler@ncagr.gov
1001 Mail Service Center, Raleigh, North Carolina, 27699-1001 (919) 707-3000 • Fax (919) 733-1141
TTY: 1-800-735-2962 Voice: 1-877-735-8200
An Equal Opportunity Employer.

Table 1: Total & Average Daily Water Withdrawn [1]
2011 North Carolina Water Use by Month

Month	# Operations (count)	Monthly Total Ground (gallons)	Monthly Total Surface (gallons)	Average Across All Days-Ground (gallons)	Average Across All Days-Surface (gallons)
January	785	352,687,278	498,522,071	11,377,009	16,081,357
February	801	318,380,816	456,926,165	11,370,743	16,318,792
March	860	623,806,091	715,862,896	20,122,777	23,092,351
April	932	696,159,305	902,539,489	23,205,310	30,084,650
May	995	958,841,319	1,471,826,232	30,930,365	47,478,266
June	1126	1,414,309,167	2,928,587,753	47,143,639	97,619,592
July	1207	1,569,713,341	3,805,700,350	50,635,914	122,764,527
August	1108	1,389,295,715	2,652,539,265	44,815,991	85,565,783
September	921	658,868,409	1,349,455,033	21,962,280	44,981,834
October	842	412,527,178	850,730,658	13,307,328	27,442,924
November	791	365,215,345	534,005,466	12,173,845	17,800,182
December	761	332,384,109	513,012,552	10,722,068	16,548,792
Annual Average				**24,813,939**	**45,481,588**

Operations:

1308 Total Operations

Daily Withdrawal Capacity (incl. ground & surface):

1,036,242,866 (gallons)

1 Users of 10,000 gallons or more per day. Averages reported in this table reflect the average water withdrawn across all days of the month. Farms that reported their withdrawals directly to DENR by May 21, 2012 have been excluded. The monthly number of operations will not add to the total. Some operations reported both surface and ground water withdrawals, which are counted twice in the monthly number of operations. However, the total number of operations represents operations that withdrew water at any time during the year, regardless if withdrawn from multiple sources.

Table 2: Demand Use for Days Applied [1]

2011 North Carolina Water Use by Month

Month	Average Days Applied Ground (days)	Average Days Applied Surface (days)	Total Avg. Daily Ground (gallons)	Total Avg. Daily Surface (gallons)	Total Max Daily Ground (gallons)	Total Max Daily-Surface (gallons)
January	29	19	13,511,831	20,970,898	15,700,053	21,169,862
February	26	16	14,825,898	21,275,176	18,587,530	21,424,929
March	28	16	30,658,407	42,807,394	45,057,360	43,254,213
April	27	16	33,863,468	70,002,519	44,604,293	74,095,311
May	28	17	54,429,810	103,659,799	76,903,706	111,666,341
June	27	16	76,628,955	202,469,805	99,747,690	218,852,971
July	28	17	80,565,957	235,551,535	99,295,823	280,157,078
August	28	17	75,689,509	182,563,448	96,635,104	199,381,737
September	27	17	31,998,788	84,601,106	40,662,219	91,996,586
October	29	17	17,867,742	38,725,959	24,029,911	40,271,668
November	27	17	15,750,682	24,425,312	21,460,929	24,766,579
December	28	19	13,569,630	21,040,612	16,829,981	21,168,542
Annual Average			**38,280,056**	**87,341,130**		

[1] Users of 10,000 gallons or more per day. Averages reported in this table reflect the average water withdrawn during the days of application. Farms that reported their withdrawals directly to DENR by May 21, 2012 have been excluded.

2012 Annual Erosion and Sedimentation Control Report to ERC

Division of Energy, Mineral, and Land Resources

Presentation Overview

- Sediment Program Overview
- Staffing
- Statistics
  - Permitting
  - Inspection
  - Enforcement

Presentation Overview

- Challenges
  - Abandoned sites
  - Slope failures
  - Sedimentation to water bodies
- Staffing Issues
- Budget Issues
- Recommendations

Program Overview

- Sedimentation Pollution Control Act of 1973 and Associated Rules
- Located within Land Quality Section
- Mission: Allow development within the State while preventing pollution by sedimentation

Program Overview

- Activities:
  - Plan review (regular and express)
  - Compliance
  - Technical assistance/outreach (design manual, workshops, pre-construction meetings)

Program Overview

- Cooperative agreement between Land Quality and the Division of Water Quality for federal stormwater regulation at construction sites
  - Sediment plan approval automatically generates stormwater permit approval
  - LQS and DWQ coordinate compliance activities and eliminate duplication of effort
  - LQS provides 28 of 34 positions for federal construction stormwater permitting and enforcement

Local Programs

52 delegated

local programs



Local programs are encouraged and supported by technical assistance and training from State

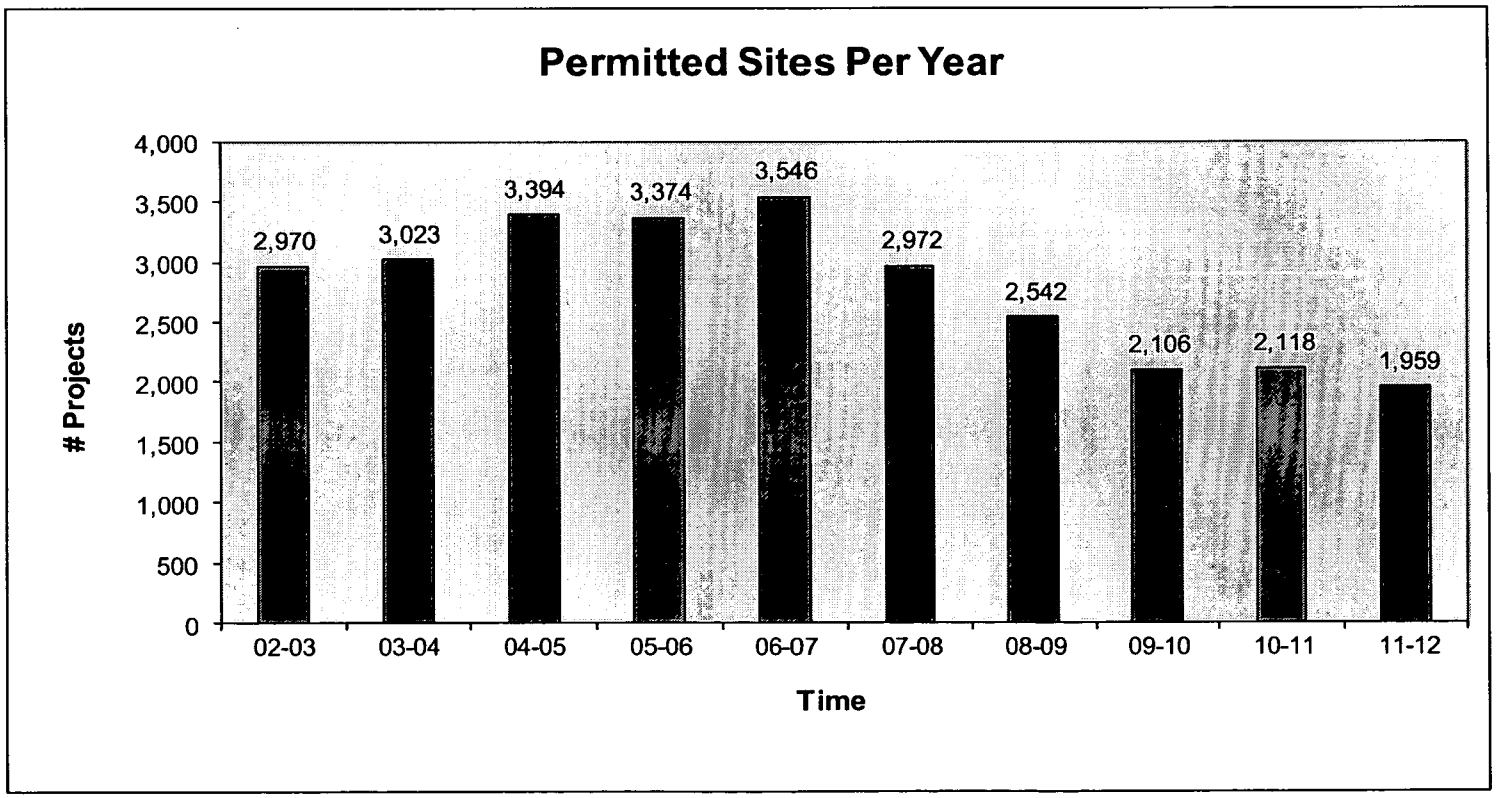
State Sediment Program Personnel

- At the end of FY 2011-2012, the Sediment Program had 40.12 full time equivalent positions (FTE) to handle the administration, plan review, inspection and enforcement of the sedimentation program
  - 5.0 in Raleigh Central Office
  - 35.12 located in Regional Offices

New Sites Permitted by LQS

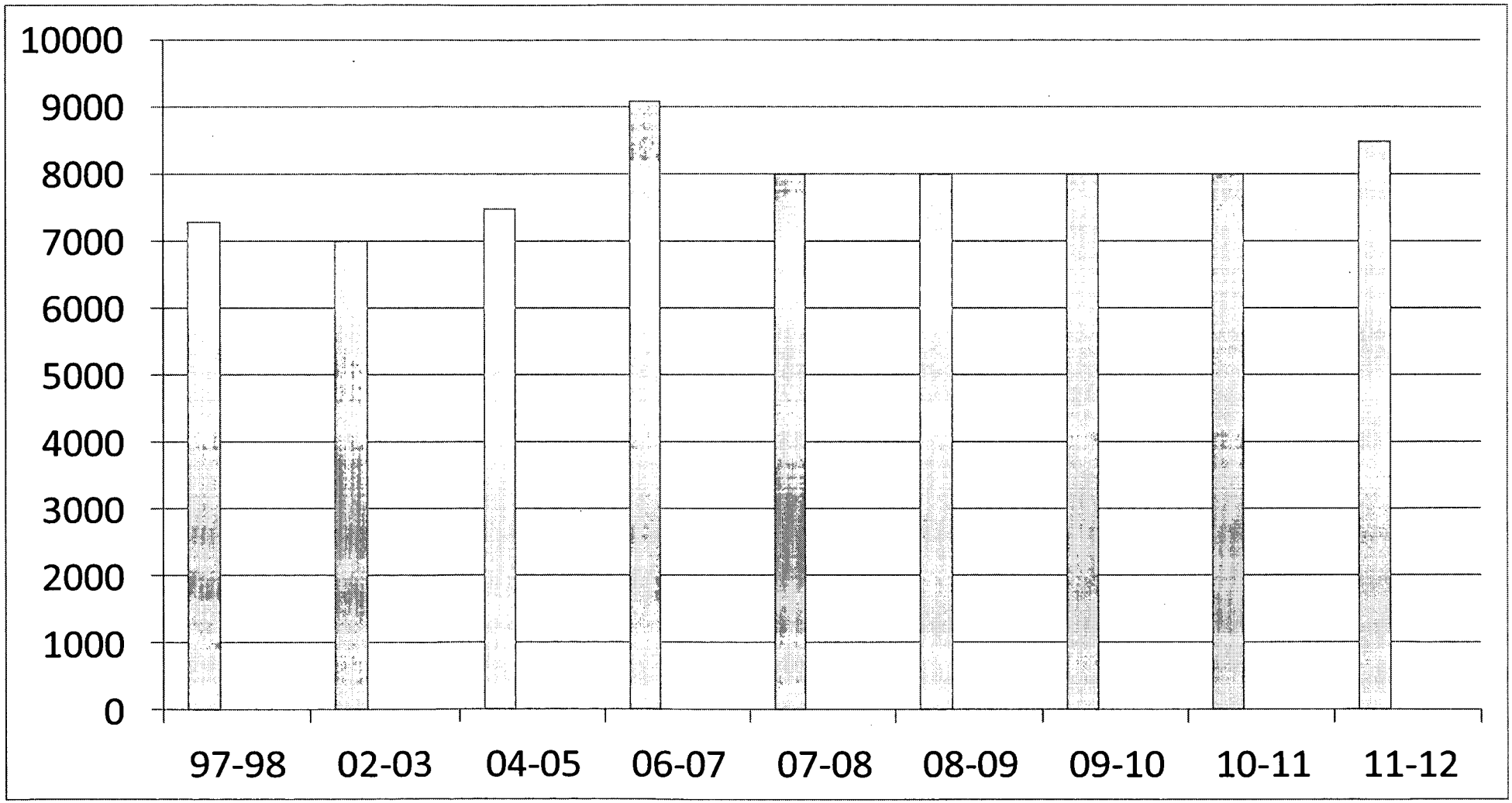
(does not include projects approved by DOT or Local Programs)

Number of new sites decreasing, but total number of sites relatively same (8,000)



"Open" LQS Sediment Projects

(active/inactive projects that have not been completed/closed)



Plan Reviews for FY 2011-2012

- 2,832 erosion and sedimentation control plan reviews for new and revised plans (decreased from 3,121 reviews in FY 2010-11)
  - Regular new plans reviewed within 30 days
  - Regular revised plans reviewed within 15 days
- 527 Express Permit reviews (increased from 475 reviews in FY 2010-11)
  - Both new and revised express plans reviewed within 3 working days

Compliance/Enforcement

- 15,659 sediment inspections led to 247 NOV's (1.6% non compliance rate)
- 52 of the NOV's were issued to repeat violators (21%)
- 18 referrals for further enforcement (7.3% were not compliant with NOVs issued)

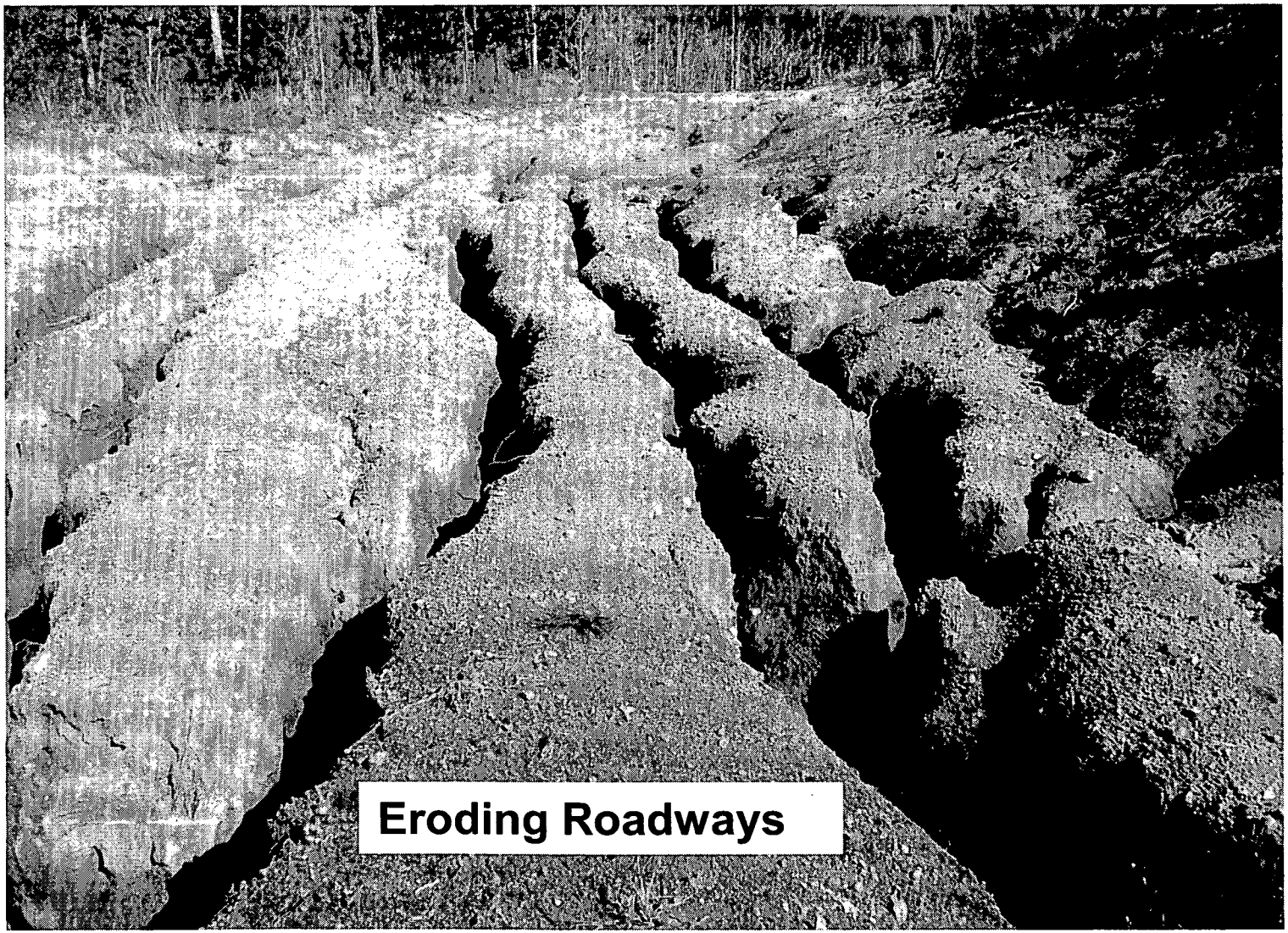
Compliance/Enforcement

- 13 civil penalties issued out of 18 referrals (remainder were injunctions, stop work orders, restoration orders)

- Percentage of active projects that receive enforcement is .23% (18 out of 8,000)

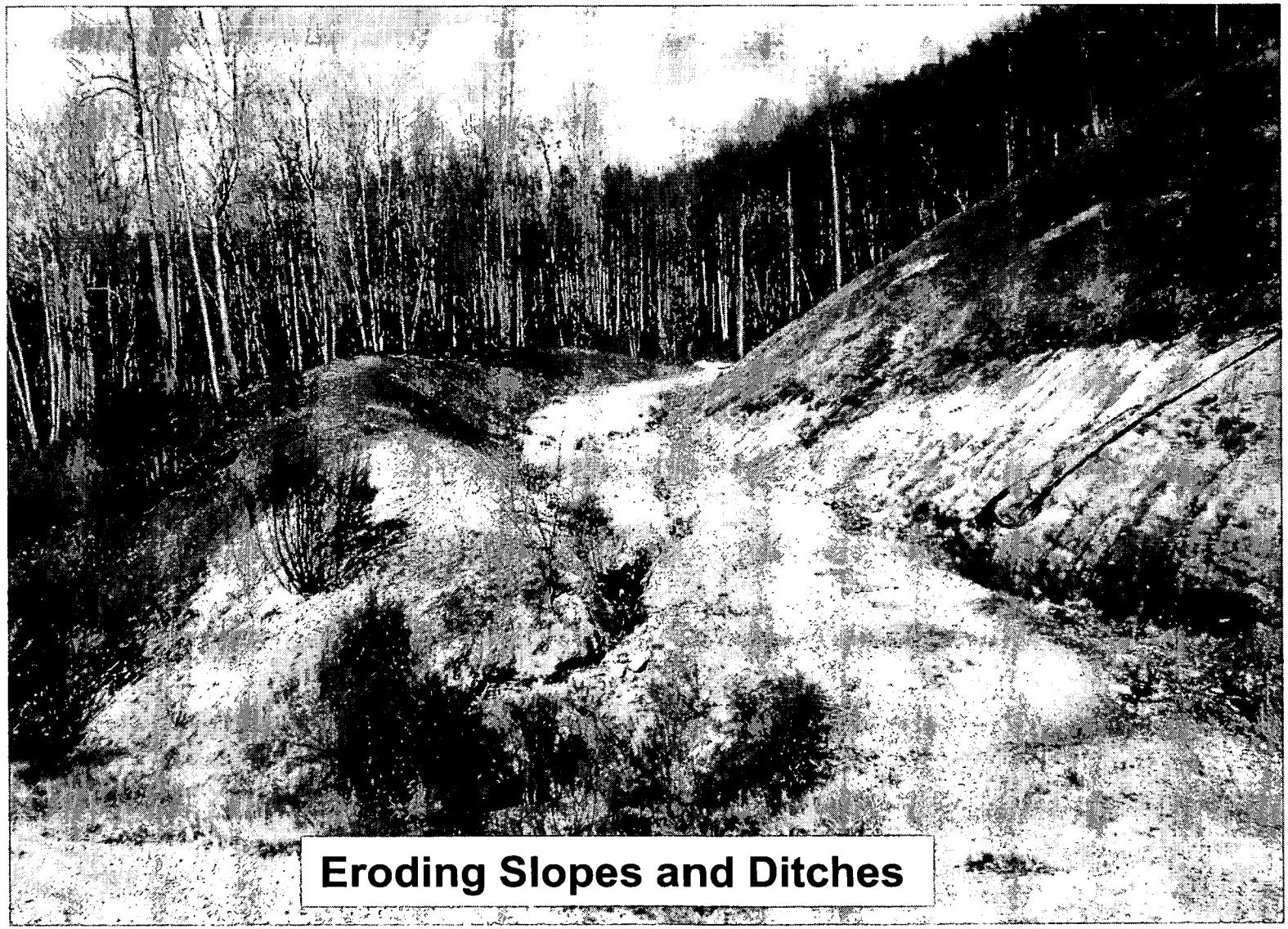
- Primary violations: offsite sedimentation and threats to public safety

Abandoned Sites



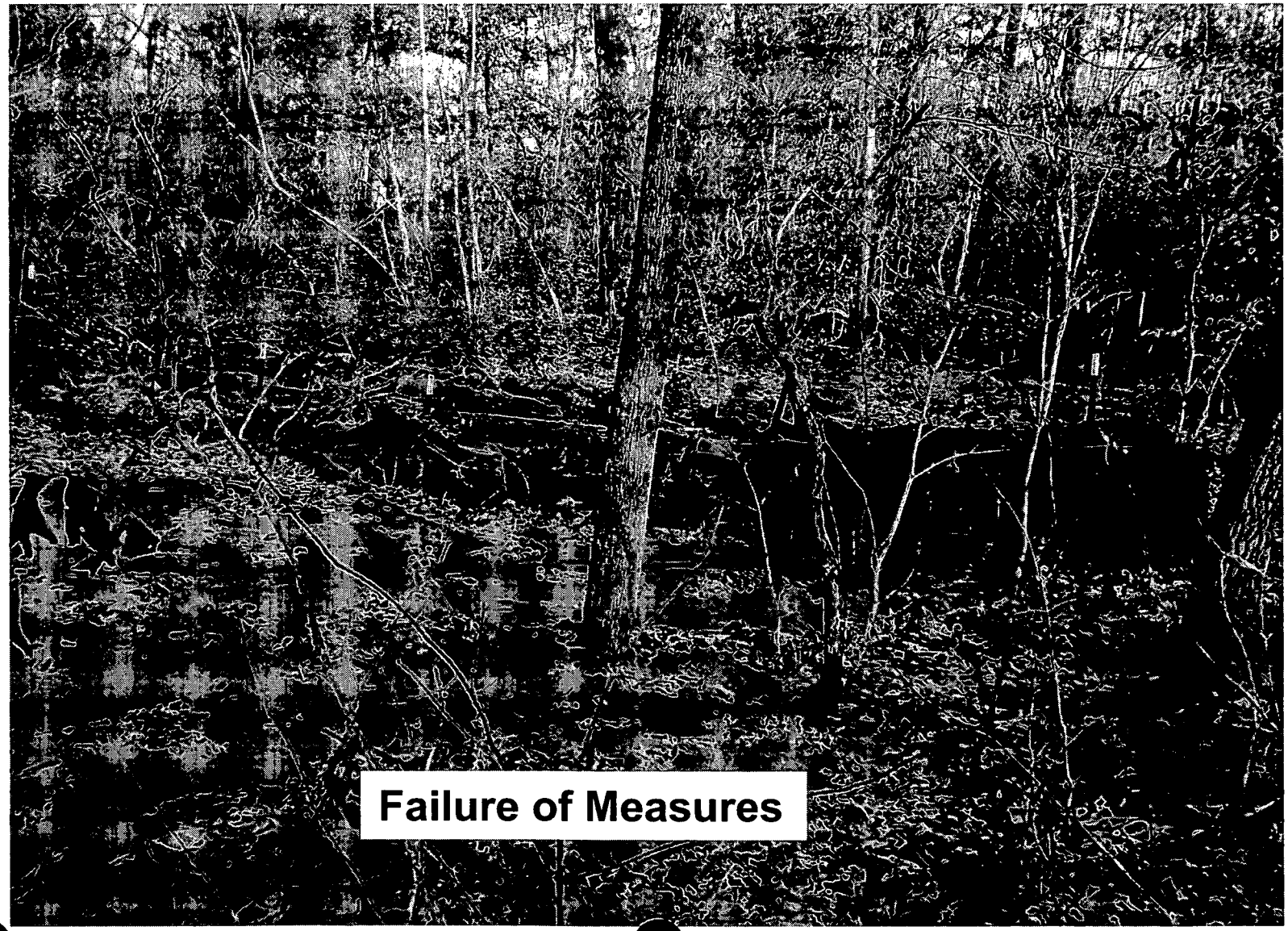
Eroding Roadways

Abandoned Sites



Eroding Slopes and Ditches

Abandoned Sites



Abandoned Sites



Serenity Forest II – Buncombe County

Slope Failures



Magnolia Place – Gaston County

Exposed Slope/Failing Retaining Wall







Seven Falls Golf and River Club – Henderson County







Brown's Cove on Lake Wylie
Mecklenburg County
Effects of Sedimentation from Construction



Brown's Cove Sediment Accumulation Report

- Charlotte Mecklenburg Storm Water Services initiated study in response to citizen complaints
  - Failure or lack of maintenance of measures during upstream development silting in Cove
- Area of upper portion of Cove reduced from 23.2 acres in 2003 to 22.7 acres in 2012 (reduced by ½ acre by sediment)

Brown's Cove

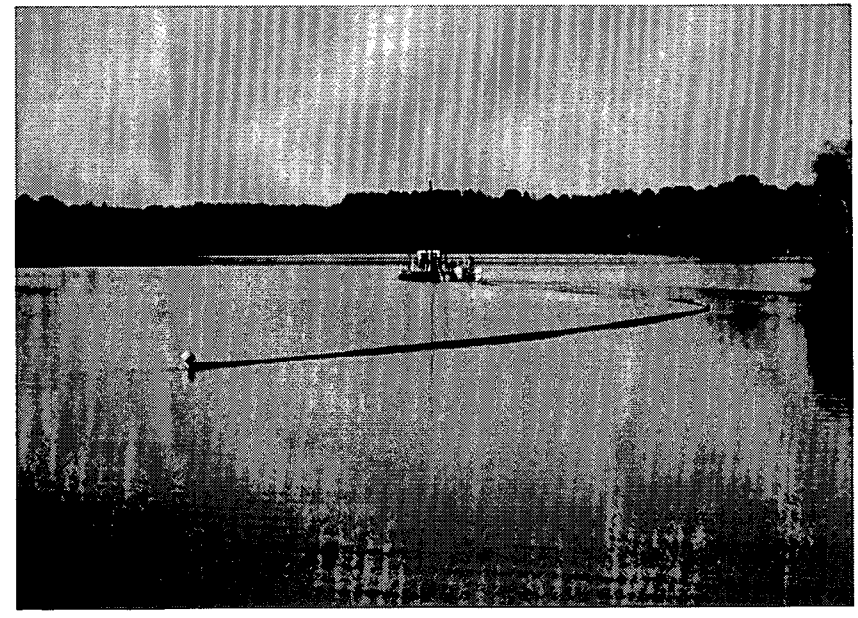
- Watershed draining to the Cove = 3,241 acres
- Study looked at:
  - Background sedimentation rates
  - Sources of sedimentation from development in the watershed

Brown's Cove

- Results:
  - Quantified accumulated sediment depths and volumes from 2003 to 2012
    - Approximately 14,348 total cubic yards of sediment to be removed (not including natural accumulation)
  - Dredging plan to remove accumulated sediment from watershed development
    - Preliminary cost estimates of $387,396 - $615,000 for completion of dredging and stabilization of spoils area

Lake Rogers Water Supply Reservoir – City of Creedmoor

- Study by US Department of Agriculture in 1998
- Drainage area to lake = 17.5 square miles (11,200 acres)
- Original lake volume in1939 = 979 acre-feet
- Lake volume in 1998 = 661 acre-feet
- Lake volume lost due to sedimentation = 318 acre-feet (1/3 of volume)
- According to USDA, 0.52 million cubic yards of sediment deposited
- Average depth of lake decreased by approx. 2 feet
- Cause: High erodibility of Triassic Basin soils coupled with inadequate erosion & sedimentation control practices on farmland and construction projects upstream in the watershed



Reduction in Staff since 2010

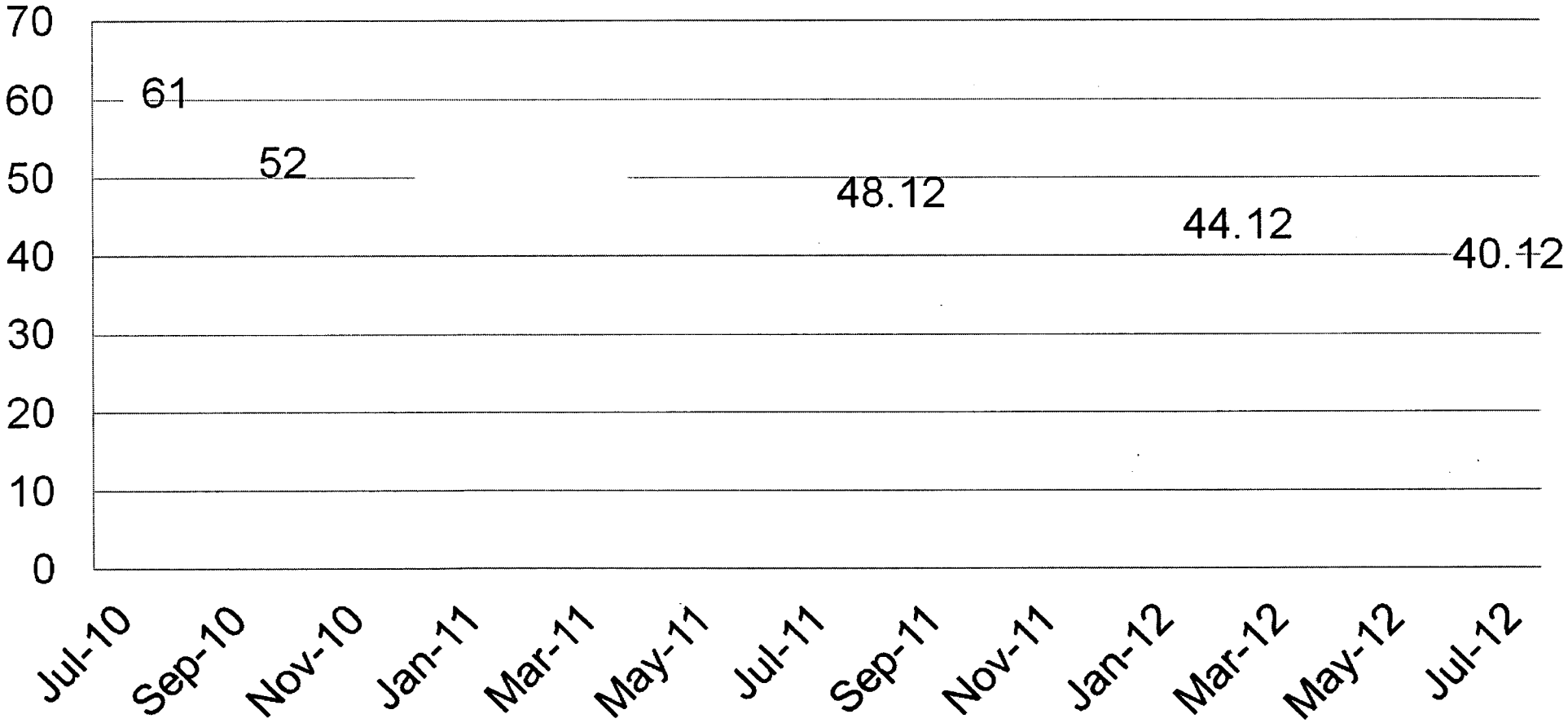
- Nine positions Reduced in Force in 9/2010 due to insufficient sediment fees/receipts
- Three positions Reduced in Force 7/2011 due to insufficient sediment receipts
- Two appropriated sediment positions abolished by General Assembly in 7/2011

Reduction in Staff since 2010

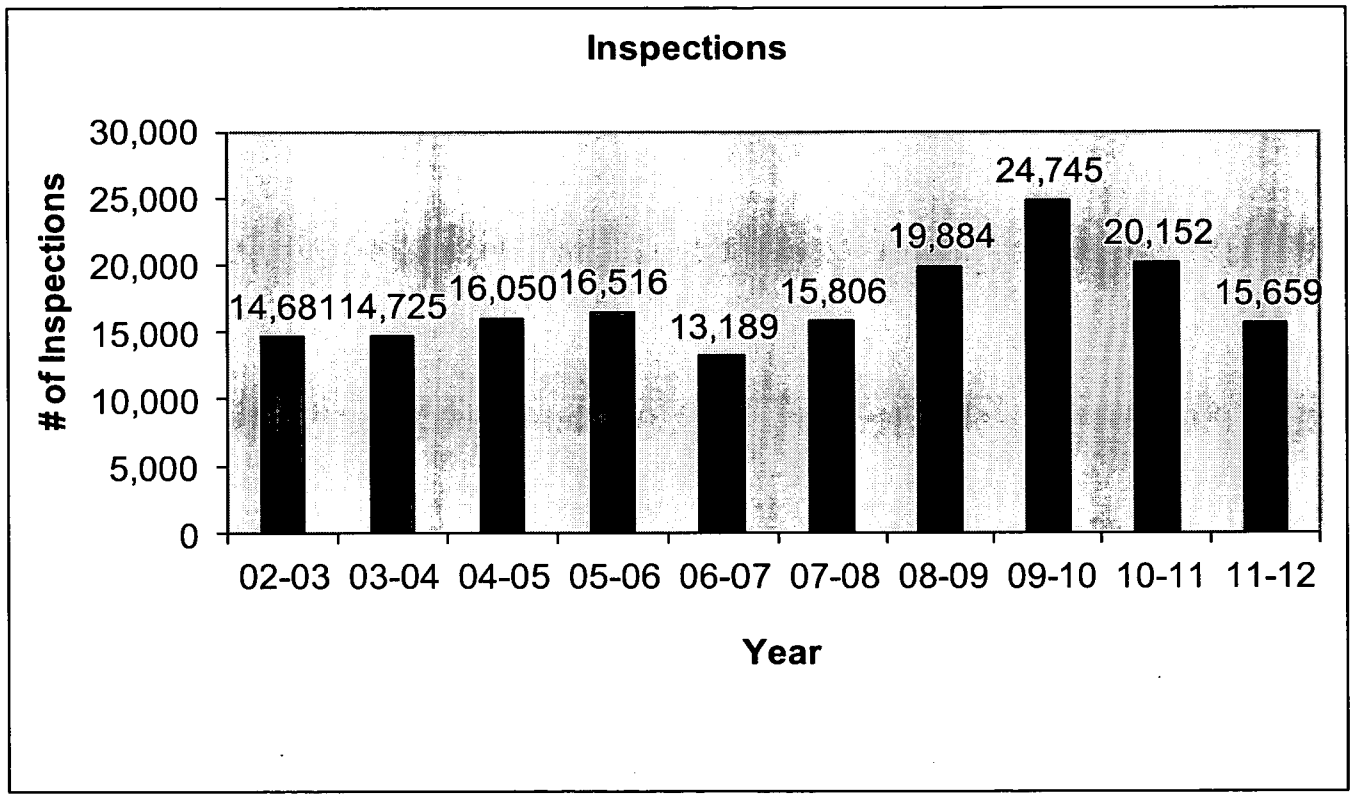
- Four vacant positions eliminated due to lack of sediment receipts in 1/2012
- Four appropriated sediment positions abolished by General Assembly in 7/2012

Sediment Program Positions
(34% reduction in last 3 years)

***Responsible for 8,000 open sediment projects**



Inspections by LQS



Inspection Resources

- Of current 40.12 FTEs in the Sediment Program, only 14 inspector FTEs spread across the seven regional offices are available for inspecting over 8,000 open projects at any given time
  - Over 570 open projects per inspector FTE
  - Workload includes complaint response, paperwork, data entry, onsite meetings, compliance assistance, court hearings

Inspection Frequency

- At current staffing levels, each active erosion and sedimentation control project is inspected, on average, once every 14 months
  - Three years ago, the inspection frequency was once every 5 months
  - In 1996, the Sediment Commission determined each sediment project should be inspected at least once per month

Budget Issues

- Sediment plan review receipts have been insufficient to fund positions for the past 4 years, resulting in the elimination of 16 fee based positions, including layoff of 12 regional office based employees
  - Three plan reviewers
  - Nine inspectors
- Fee collections near the end of FY 2011-2012 have exceeded salary expenditures for first time in over 4 years
- Currently, six regional office plan review/inspector sediment fee based positions are being held vacant due to the lack of receipts to fund the positions

Budget Issues

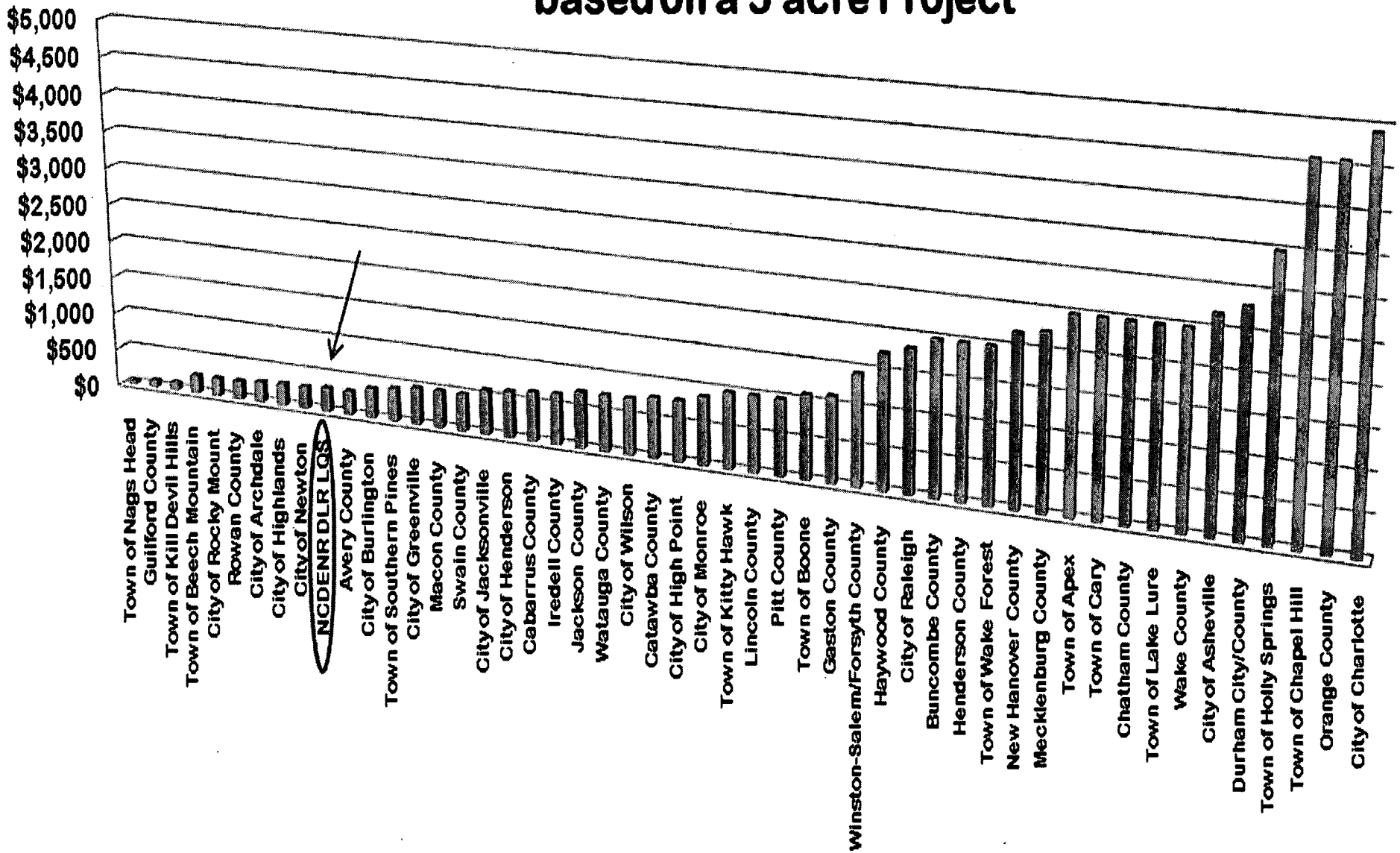
- The review fee for erosion and sedimentation control plans is set in the SPCA at $65/acre
- By comparison, the fees charged by delegated local programs to cover their costs have a median of $174/acre and an average of $274/acre

Budget Issues

- DENR and the Governor's Office have proposed a fee increase to $170/acre in recent years without success

Comparison of Fees

Erosion and Sediment Control Plan Review/Permit Fees based on a 5 acre Project



Budget Issues

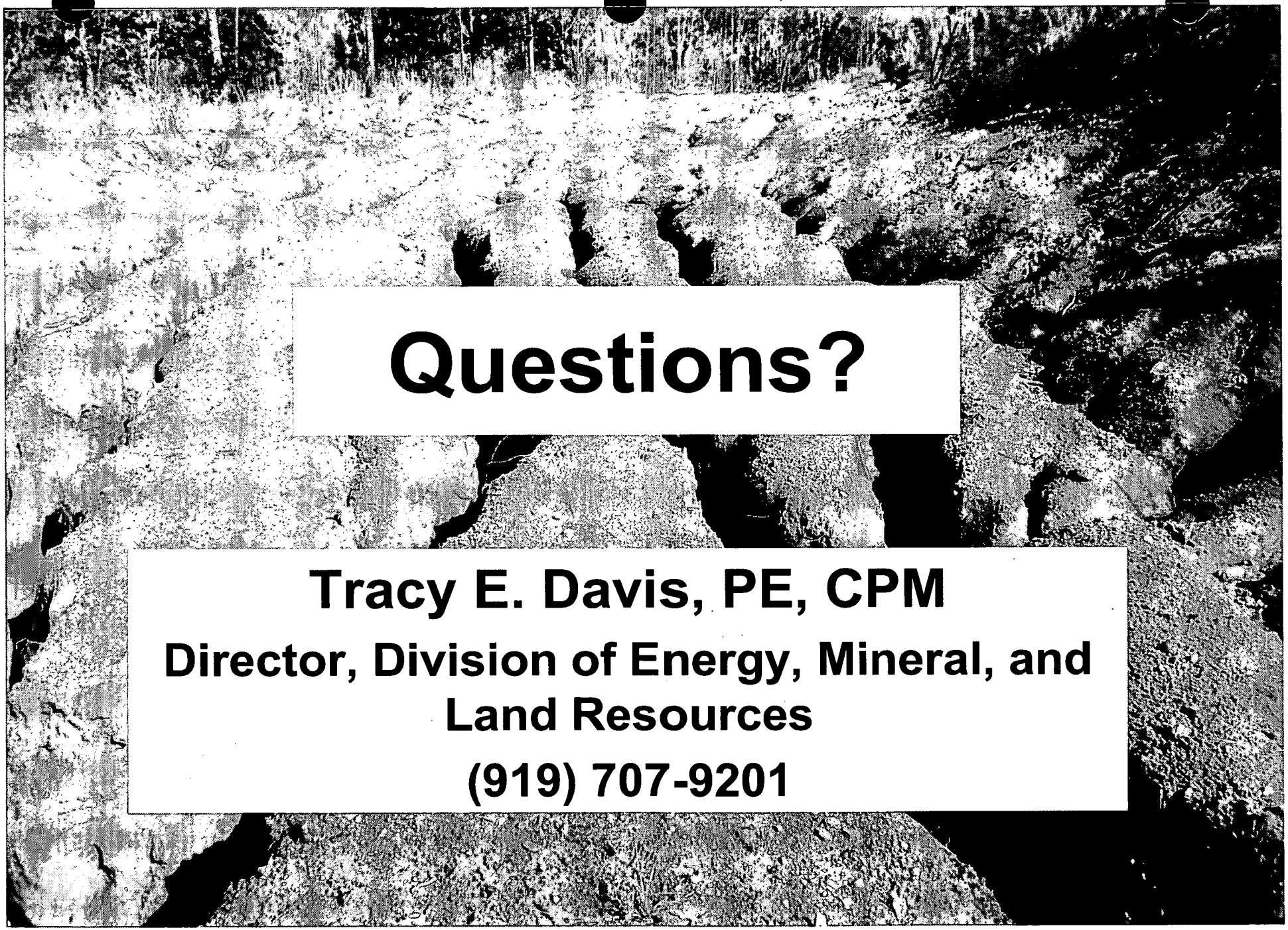
- In 2002, DENR investigated the cost of transferring the Sediment Program to local governments
  - Cost of 46 existing local programs: $5,687,000
  - Estimated # of additional local programs: 209
  - Total statewide cost for all local programs: $28,248,000
  - State Sediment Program appropriations for FY 2011-2012: $1,738,854
- DENR can implement the Sediment Program cheaper than local governments

Budget Issues

- Most large local governments that can afford a local program already have one
- Smaller local governments would need start up funding in order to establish a local program
- Appropriations for DENR to provide such grants to new local programs were eliminated several years ago

Recommendations

- Fee increase from $65/acre to $170/acre to provide DENR resources to properly implement the Sedimentation Pollution Control Act
- Financial Assurance for construction sites that plan to disturb over 20 acres (nine delegated local programs already do this)
- Clarify civil penalty appeal process for delegated local programs


Questions?
Tracy E. Davis, PE, CPM
Director, Division of Energy, Mineral, and Land Resources
(919) 707-9201

Update on Degradable Plastic Study

Scott Mouw

Division of Environmental Assistance
and Outreach

NC DENR

Scope and Status of Study

- As instructed by Senate Bill 229, DENR will:
  - "study and evaluate degradable plastics products and their potential to contaminate recycled plastic feedstocks"
  - "develop and recommend standards for degradable plastic products, including labeling requirements and education and outreach programs, to prevent contamination of recycled plastic feedstocks"
- Activities to date:
  - Initiated research on use of degradable plastics
  - Initiated outreach to NC users of recycled plastic feedstocks
  - Identified major issues to address in the study

Basic Kinds of Plastic

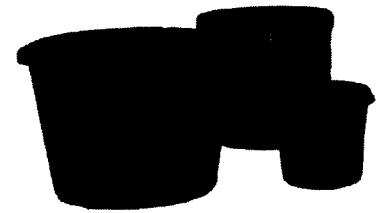
- Consumer plastics
  - Plastic bottles
    - Dominated by PET (#1) and (#2)
  - Other plastic containers
  - Plastic bags and film
- Durable goods plastics
  - Electronics, appliances, carpet
- Other plastics – e.g., agricultural plastics, totes, barrels, etc.

Focus on PET (#1) and HDPE (#2) bottles

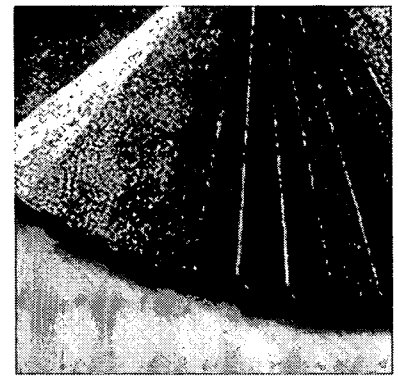
- North Carolina home to some of the nation's most important processors and users of plastic bottle resin.
- Concerns about how degradables will affect these companies and local recycling programs.
- Plastic bottle recycling in NC supported by disposal ban in G.S. 130A-309.10(f)(11)

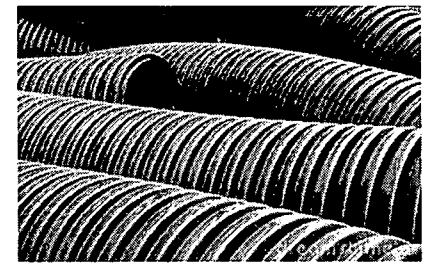


Products made from #1 and #2 Recycled Plastic Feedstocks



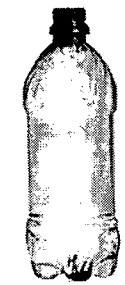
- New bottles
- Clothing and Textiles
- Carpet
- Automotive parts
- Building and gardening products
- Industrial strapping
- Consumer packaging

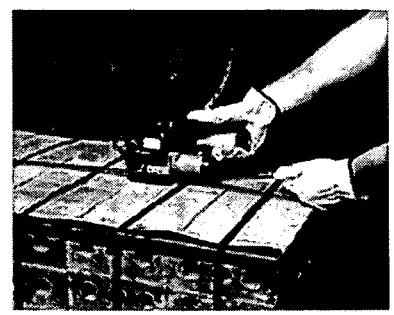


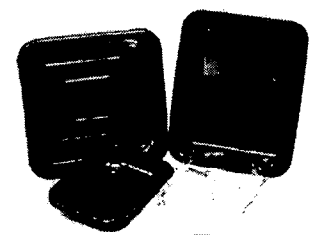












Rising Use/Marketing of Degradable Plastics

- Recent development of new types of degradable plastics, intended to break down in landfills or when exposed to natural elements.
- Degradables being used in a variety of products:
  - Bottles (mostly small-scale bottled water uses)
  - Other containers
  - Films/bags
  - Foodservice plastics –focus on "compostable" as well as "degradable"

Types of Degradable Plastics

- Plastic products with additives that promote or facilitate breaking down of the product.
  - E.g., a PET bottle with additives that break apart the PET into smaller pieces over time.
- Plastics that themselves break down over time.
  - E.g., bio, starch-based food plastic ware that will decompose in the right conditions

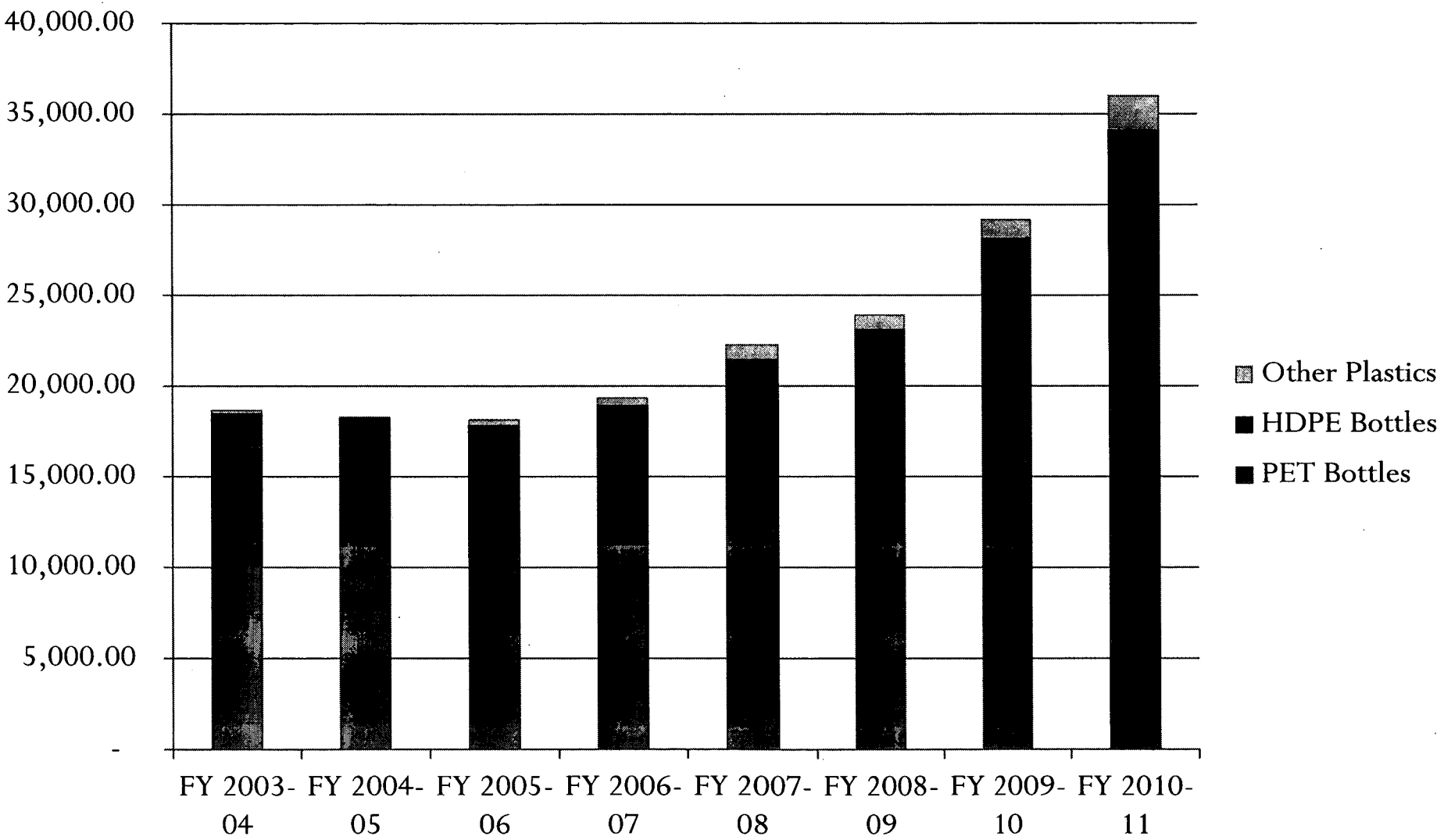
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- **Different Product**: Coke's PLANT bottle and work by others (P&G, Heinz, Pepsi) to convert plant-based material to make ethylene gas and then PET.
  - Recycles conventionally along with other PET
~~~~~~

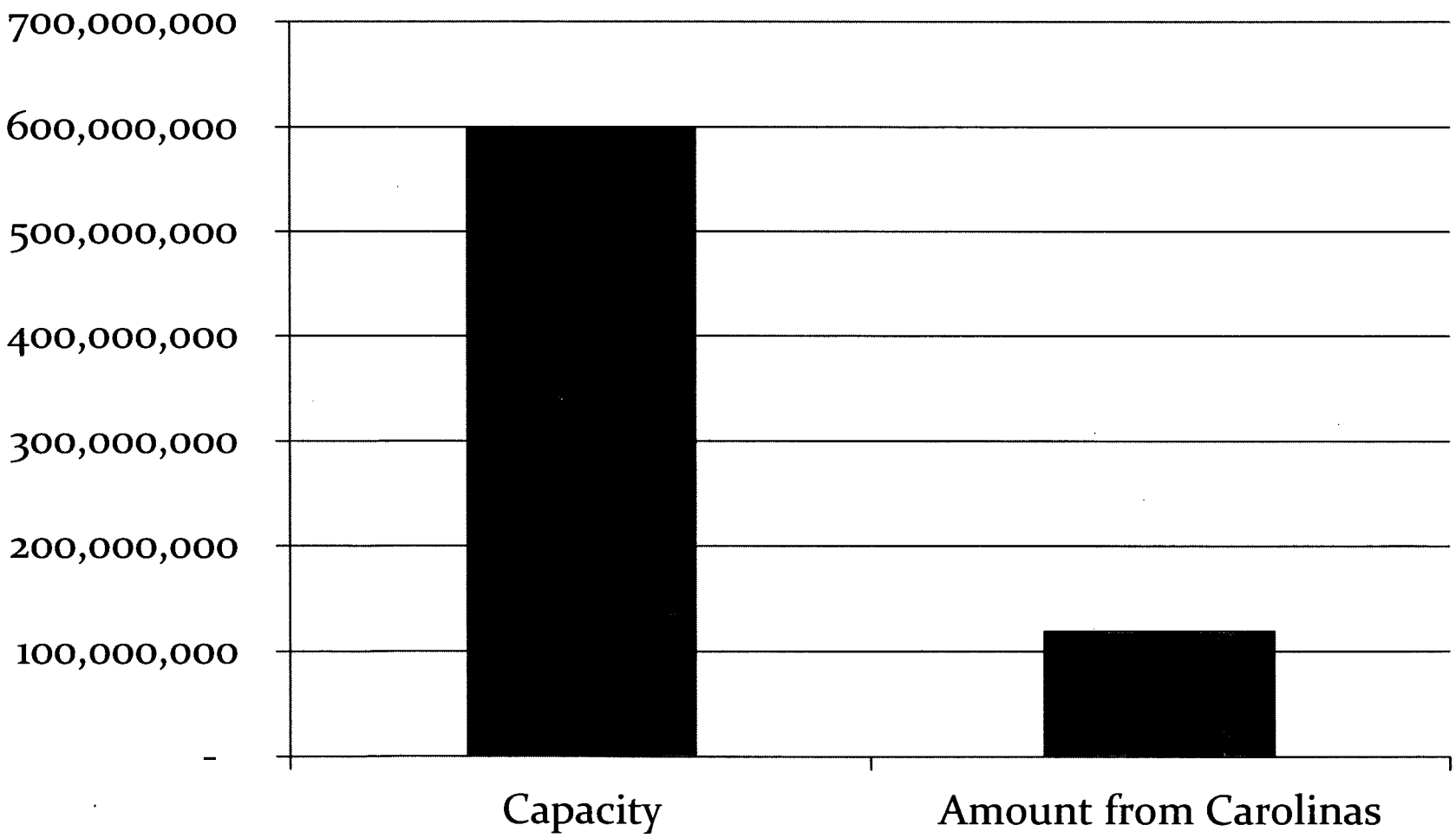
Issues Study Will Seek to Address

- More details on use of degradables – kinds of products that may be appearing or coming into NC
- Effects of degradable plastics on:
  - North Carolina's plastic bottle recycling industry
  - North Carolina's overall efforts to recycle plastics
  - Landfills
  - Litter
- Possible use or application of industry and federal standards and guidelines – e.g., FTC, ASTM – to North Carolina's situation.
- Public understanding - need for clear and simple information for consumers about what they should do with a plastic product after use.

Recovery of Plastic Bottles in NC by Local Government Programs



Carolinas Plastic Bottle Recycling Capacity Vs Local Supply (in lbs.)



CONTACT INFORMATION

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NC DENR
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919-707-8114

ENVISION PLASTICS

The Technology Leader in Recycled Polyolefin Resins

EcoPrime™

The only FDA approved, food grade HDPE PCR in North America

PRISMA™

High speed, high output, custom color sorted HDPE PCR. Don't just recycle the plastic, recycle the color.

About Envision Plastics

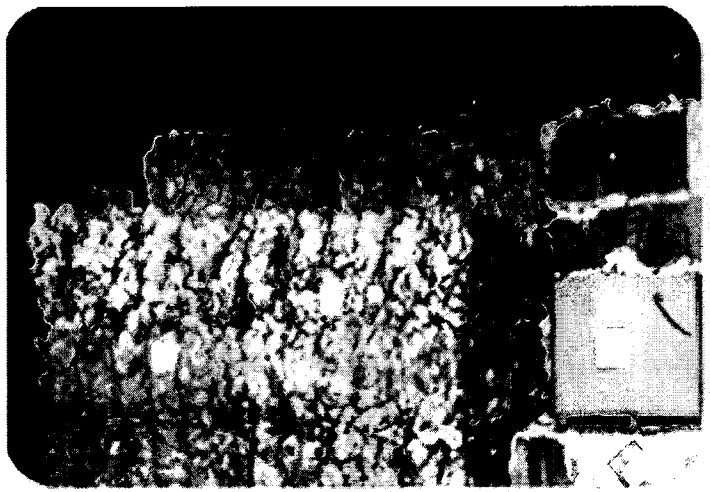
History

- Started in Reidsville, Rockingham County in June 2001
- Bought FCR's Plastics Recycling business from Casella Waste, and Union Carbide's Plastic Recycling business in Bound Brook, NJ
  - Combined these two businesses in Reidsville
    - Upgraded and expanded the Reidsville FCR plant and integrated the Union Carbide equipment
- Today Envision recycles 85,000,000 pounds of HDPE bottles per year in Reidsville that would otherwise be landfilled
- Recycling is a job creator. We currently employ 84 persons in Reidsville, an increase of 20 positions from a year and a half ago

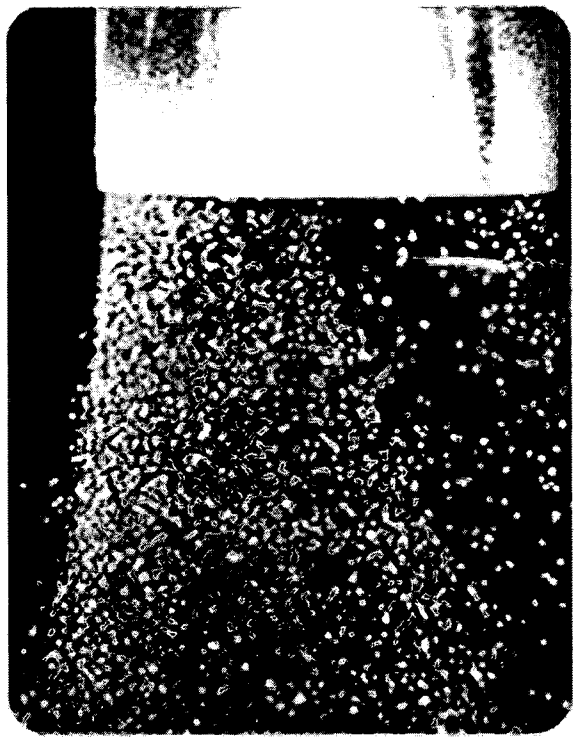
#2 HDPE Plastics Recycling

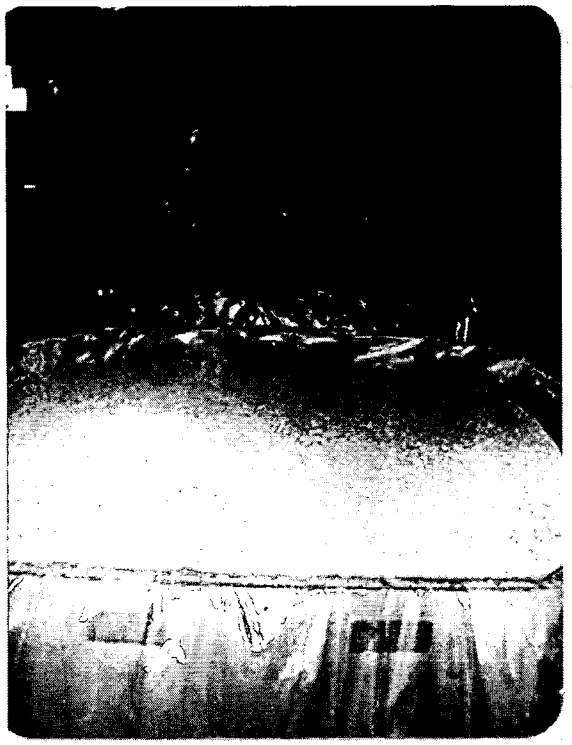
ENVISION PLASTICS

Turning Trash Back into Valuable Raw Material



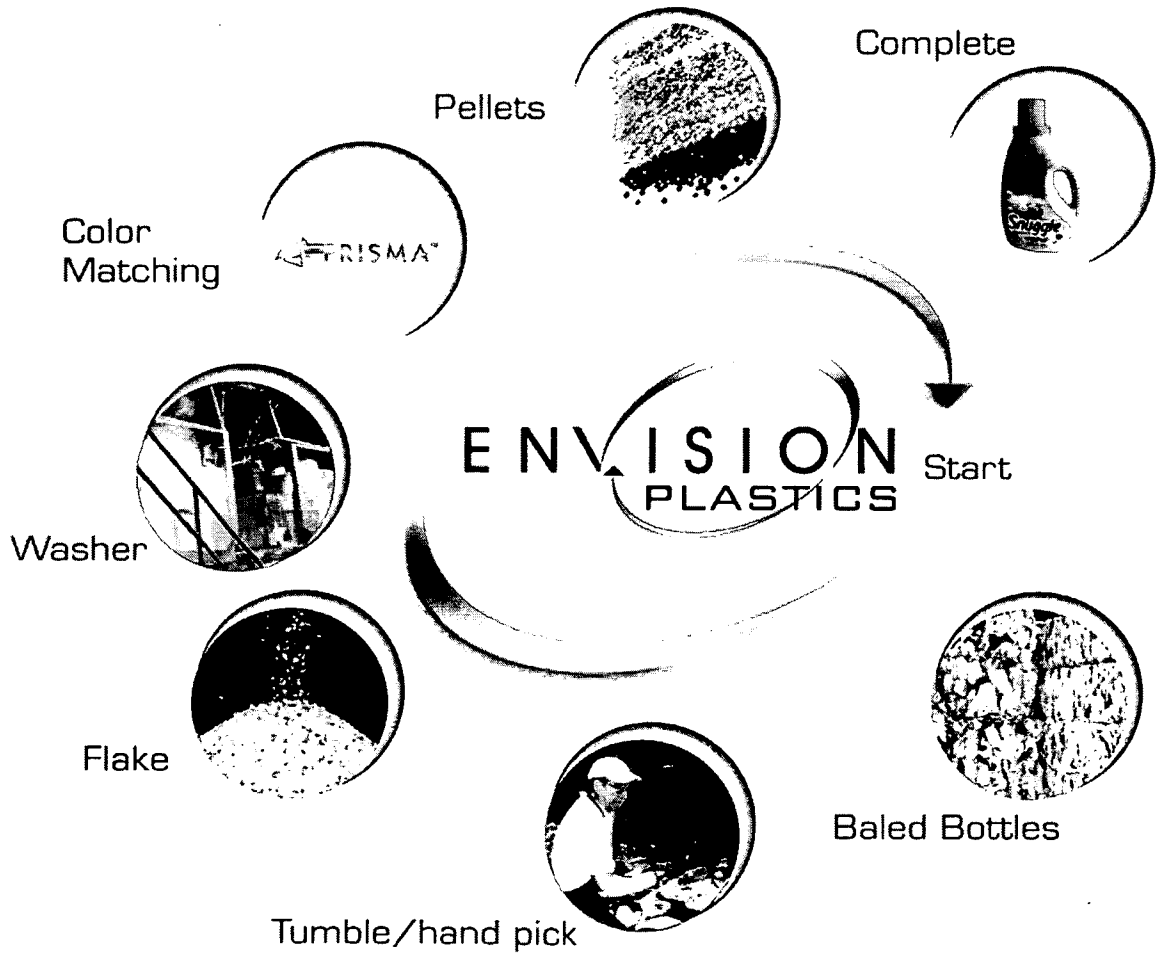






- > Buying baled scrap from communities and waste haulers
- > Providing compensation for collection and separation costs

Plastics Recycling Process Cycle

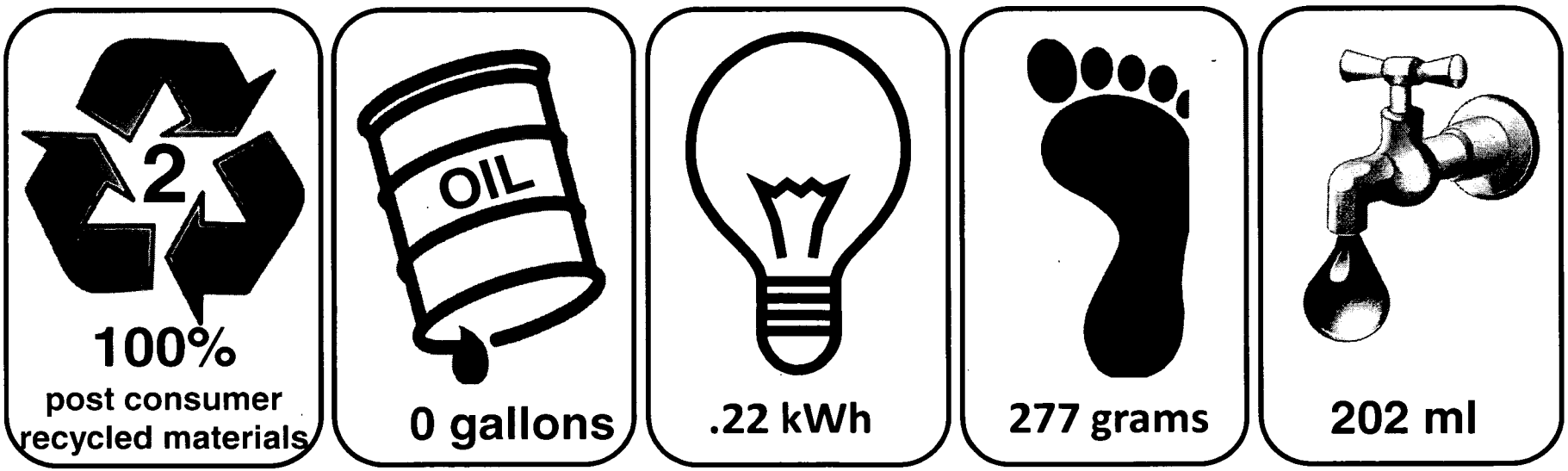


Environmental Impact

ENVISION PLASTICS

Resources Consumed to Produce One Pound of Recycled Resin

> The production of recycled plastic resin uses far less resources than producing new, virgin plastic resin



> Production of recycled resin uses 90% less energy and emits 78% less greenhouse gases than virgin

> Moreover, recycling plastics creates 6 times more jobs than landfilling recyclables and 36 times more jobs than incinerating them

Customers and Companies that Use our Products

ENVISION PLASTICS

P&G

ESTÉE LAUDER

method

green

SONOCO

AVEDA

L'ORÉAL

seventh GENERATION.

Kimberly-Clark

CLOROX

Johnson & Johnson

DANONE

WHOLE FOODS MARKET

Sun Products Corporation

BERRY PLASTICS CORPORATION LEADERSHIP BY DESIGN

Unilever

MYERS INDUSTRIES, INC.

klöckner pentaplast

NURSERY SUPPLIES

amcor

RDS

BEMIS

SILGAN PLASTICS CORPORATION

ALPLA

GF

Prestone

CCL Industries Inc.

Exopack Performance Films

GRAHAM PACKAGING COMPANY

ALPHA

ALBÉA

PakTech We are the Handle People

TRICORBRAUN the power of options

Poly-Tainer

CONWED GLOBAL NETTING SOLUTIONS

EcoPrime™

ENVISION PLASTICS

PRISMA™

Recycled Resins are Used in Demanding Applications

- Two of our most technically advanced products require high quality scrap materials
- PRISMA™ custom color sorted HDPE recycled resin
  - Recycling color not just the plastic
- EcoPrime™ – the only FDA approved HDPE PCR for use in food contact applications
  - Absolute purity of product is required for a food grade recycled resin

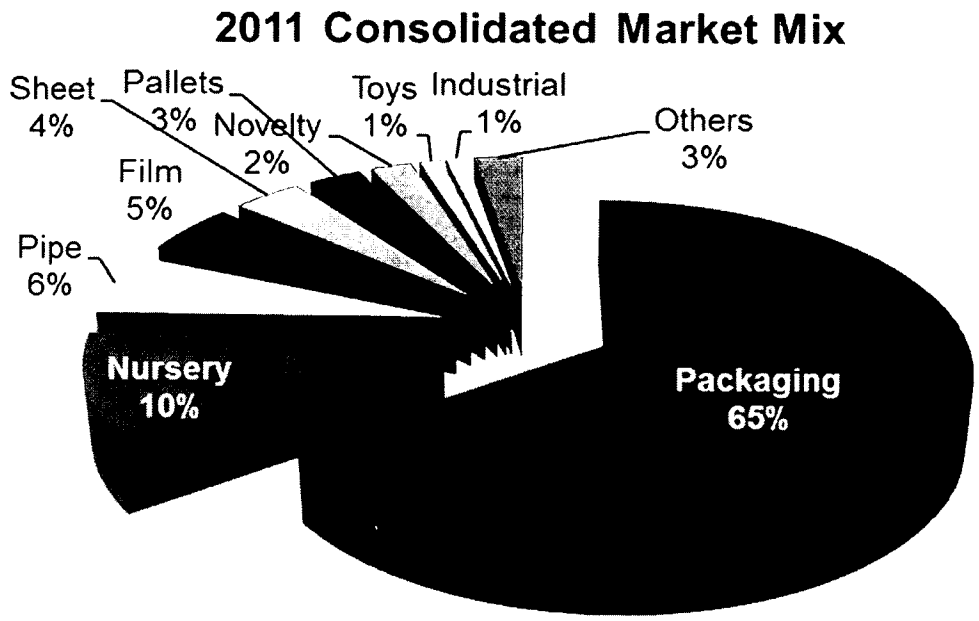


EcoPrime food grade recycled resin is used in many food contact applications

Recycled Resins are Used in Demanding Applications

Product Quality is Essential to Demand for Recycled Materials

- 70% of our recycled resin goes into value added products, not downgraded or "downcycled" products
- Our customers are looking for recycled materials that have physical properties that are equal to or nearly equal to that of virgin materials
- These physical properties are what drives the performance of our customers' products



Recycled Resins are Used in Demanding Applications

ENVISION PLASTICS

Product Quality is Essential to Demand for Recycled Materials

> As a result, for every pound of scrap plastic that we purchase, we currently yield only 80% of that in saleable material

> The 20% yield loss is made up of contaminants that are either incompatible with HDPE plastic or degrade its physical properties and, therefore, its performance in molded products
  - Other plastics: Polypropylene, PET, PVC
  - Additives to plastics that act as fillers or degrade the plastics performance
  - Aluminum and steel cans
  - Glass, grit, dirt



Products using Envision's PRISMA recycled HDPE resin

Degradable Plastics and Additives that Enable Plastics to Degrade

ENVISION PLASTICS

Compatibility with Recycling Processes is Not the Issue

> Degradable plastics are clearly a new contaminant to enter the waste stream
  - ***Anything that will reduce physical properties of the recycled resin is a contaminant***
  - As recycled resin physical properties are eroded by the introduction of degradable resins, demand will also erode
  - Undermining all of our efforts to build a recycling infrastructure, keep plastics out of landfills and, guess what? …create jobs in North Carolina

> *Envision Plastics opposes the introduction of degradable plastics and additives that enable plastics to degrade in the waste stream*



Method Ocean Plastic Bottle Project





Follow us on Facebook @
Save the Plastics



Read our blog @
http://envisionplastics.wordpress.com

ENVISION PLASTICS

www.envisionplastics.com

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Reidsville, NC 27320
(336) 342-4749
email: sales @envisionplastics.com

West Coast Plant
14312 Central Avenue
Chino, CA 91710-5752
(909) 590-7334
email: sales @envisionplastics.com



Follow us at SavethePlastics

Degradable Additives: A Threat to Plastics Recycling

10/11/2012

NC DNR Presentation

Chris Bradley

Clear Path Recycling

- Clear Path Recycling (CPR) was formed in 2009 as a joint venture between Shaw Industries and DAK Americas.
- CPR is an LLC operating independently to provide post-consumer PET recycled feedstocks (rPET).
- CPR began production in August 2010 and has been operating continuously since this time.
- Since CPR began operations in mid-2010, more than 2.5 billion bottles have been reclaimed (that could have gone to landfills).

CPR's Impacts

- Direct capital investment in CPR exceeds $35M.
- Over 120 direct manufacturing positions
- CPR utilizes more than 45 truckloads of raw materials each week.
- CPR Logistics involves an additional 5 support positions via a local freight mover.
- By reclaiming the PET and byproducts from the baled bottles, over 80% of the landfill impact is eliminated.
- CPR purchases a significant amount of the bottles it reclaims from North Carolina
- In 2011, more than 20% of the bottles came from NC.

CPR Markets Served

- **Polyester:**
  - Fiber manufacture
    - Clear
    - Green
  - Strapping
  - Sheet and film
  - Recycled content resins
- **Byproducts**
  - Non-PET bales
  - Olefins recycled flake (caps, etc.)
  - Metal recycled streams (wire, Aluminum, etc.)

Degradable Additives:

- **Oxo-degradable additives:**
  - According to the oxo-biodegradable plastics association: "degradation is possible by adding a chemical substance that decreases the material's molecular weight over a given time period".
- **Photo-degradable additives:**
  - these are intended to enhance the breakdown of the polymer molecule into smaller pieces of plastic.
- **Bio-degradable additives:**
  - these additives are intended to allow enzymes or other microscopic environmental conditions to break down the polymer molecules into smaller pieces of plastic.

Impacts:

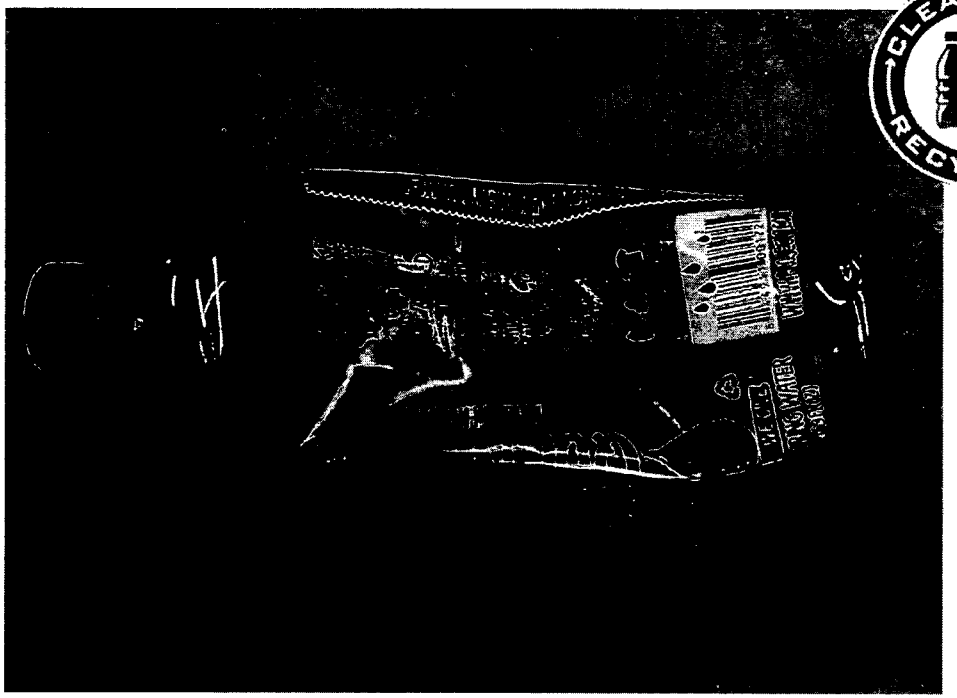
- Degradable additives aim to allow the plastic article to break down into smaller pieces to reduce the impact of plastics disposal.
- Degradable additives state that they require specific conditions to allow the degradation to take place – if the conditions are not present, the material will not degrade.
- As a recycling operation, our goal at CPR is to eliminate as many sources of degradation as possible as we recycle the plastic – the presence of degradable additives works against us.

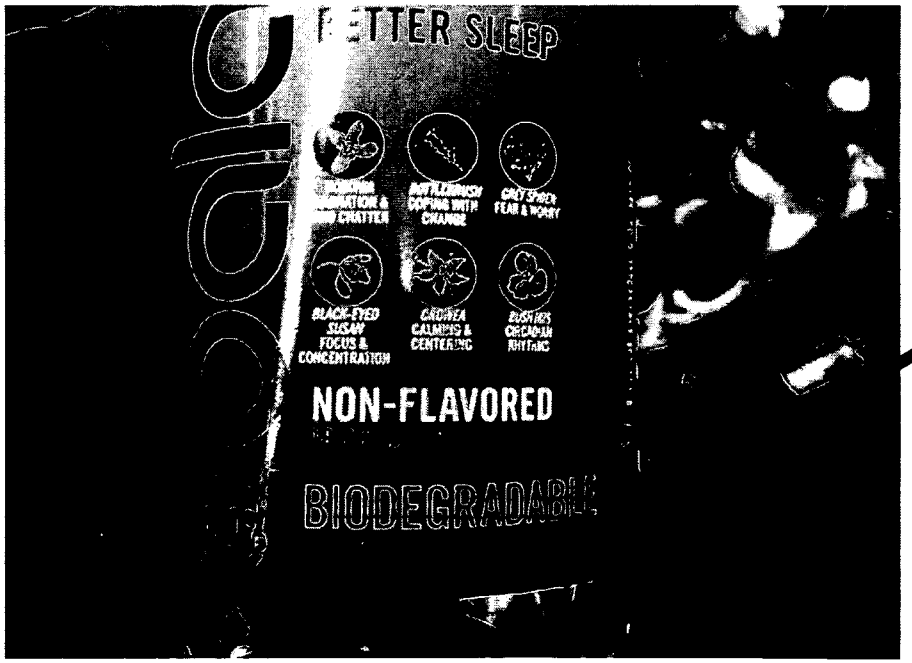
Recycling Impacts:

- Degradable additives, when present in the plastic stream, can and will be present in the plastic recycling feedstocks and products.
- Degradable additive manufacturers have not completed any studies that can demonstrate that the presence of these additive will not negatively impact the recyclers and/or the downstream uses of the products that contain the recycled plastics.
- Bottles containing these additives cannot be readily identified and removed from the recycling stream as a known contaminant.

What does a biodegradable additive look like?

It looks like a regular plastic bottle.





But is it really recyclable?

NO!

Threats to PET Recycling

- **rPET is used in many durable products:**
  - **Fiberfill** in furniture, car seats, etc.
    - Do we want the cushions, pillows or fabrics to disappear in our houses?
  - **Plastic strapping** is a common use
    - This strapping holds materials onto pallets and cannot fail without serious immediate consequences and safety implications.
  - **Carpets**
    - Carpet manufacturers provide definite warrantees for their products, some as long as 15-20 years.

What is the best alternative?

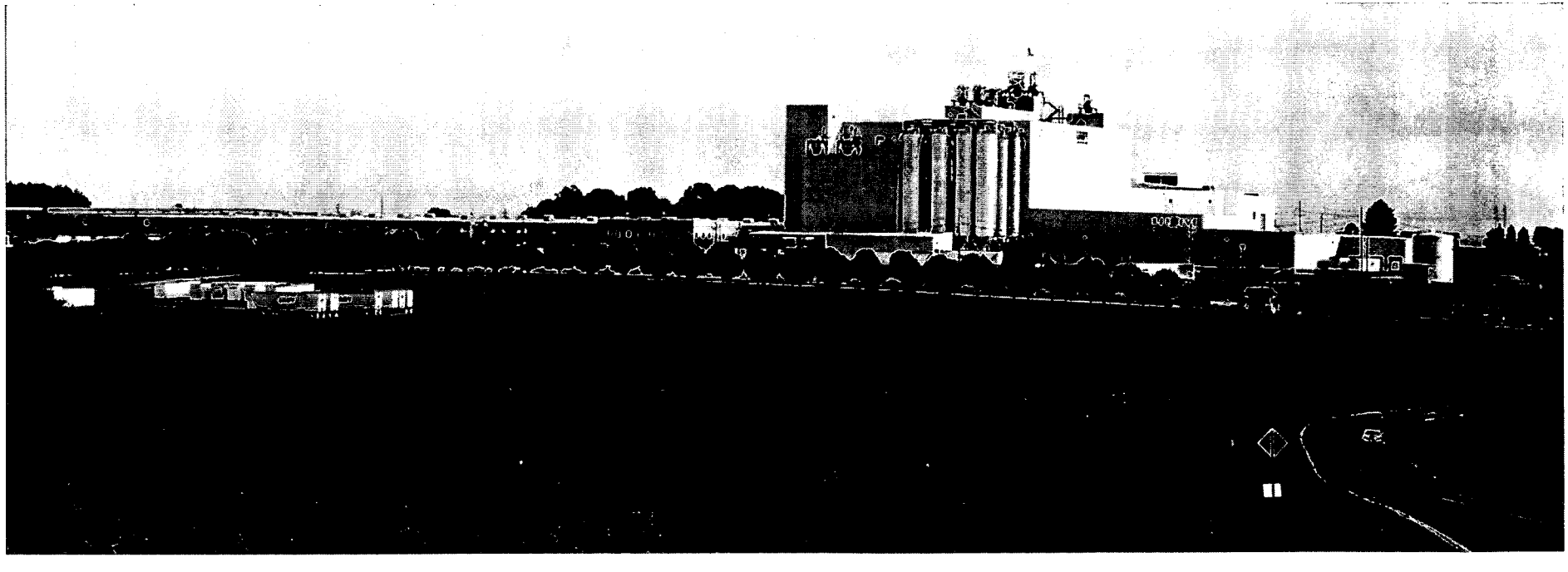
- **Recycling and recovery of the plastics**
  - Recycling conserves the energy put into the manufacture of the base resins
  - Recycling extends the life of the resins in the marketplace:
    - A plastic bottle may have an average shelf life of less than 6 months
    - Recycling that plastic bottle allows for the plastic to remain in use for years
  - Recycling uses 20% less energy than the manufacturing of new plastic
- **Degradable additives <u>will not</u>:**
  - Conserve the energy imparted into resin
  - Allow for continued use of resin through recycling

Summary

- The action being taken by North Carolina to prevent the growth of degradable additives in plastics is the right action to take.
  - North Carolina will continue to encourage the elimination of plastics in waste streams both within and outside of the state.
  - North Carolina will help to protect and preserve the viability of the plastics recycling industries and the economic and environmental benefits they bring.

UNIFI®

THE MAKERS OF REPREVE



REPREVE IS A TRADEMARK OF UNIFI, INC. AND IS REGISTERED WITH
U.S. PATENT AND TRADEMARK OFFICE AND WITH OTHERS.
U TRUST AND FIBERPRINT ARE TRADEMARKS OF UNIFI, INC.

Who We Are...

Synthetic Yarn Producer

Producer and processor of polyester and nylon textured yarns



Founded in 1971

New York Stock Exchange: UFI

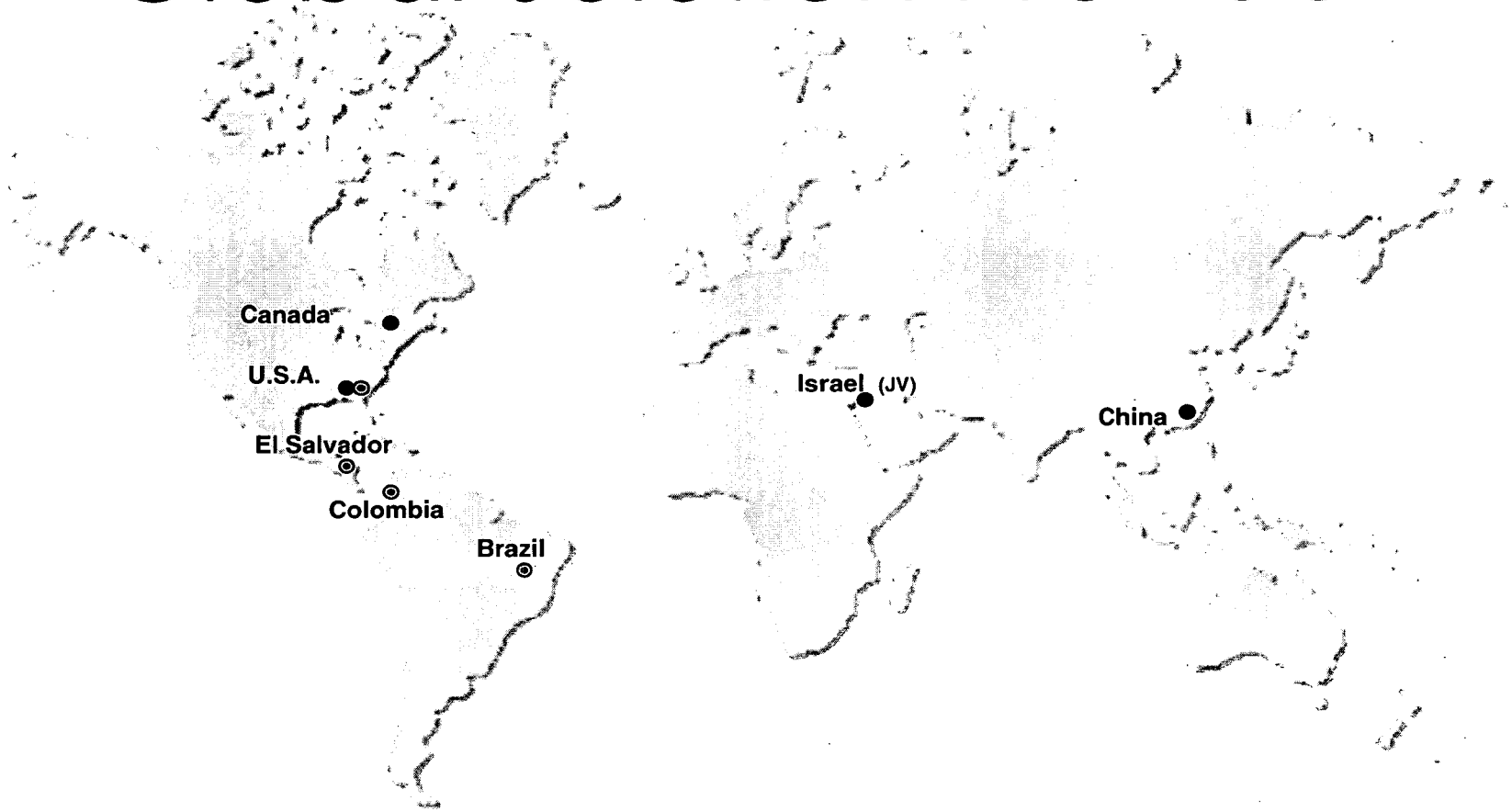
Sales Revenue ~$705 million (FY2012)

Over 2600 employees globally.



Unifi is well known around the world for its manufacturing expertise and product innovations.

Global Solution Provider



NC Presence – 1900 employees

- Corporate HQ – Greensboro
- Manufacturing – Madison, Reidsville, Yadkinville

- Manufacturing & Sales: USA, El Salvador, Colombia, Brazil, China
- Sales & Marketing Offices Canada, China
- Joint Venture: Israel
- Headquarters: USA

REPREVE®

RECYCLING CENTER

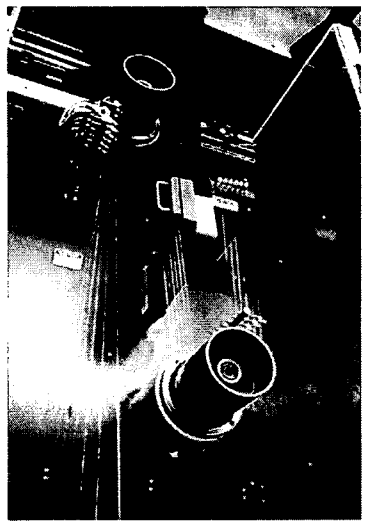
Commitment to Innovation



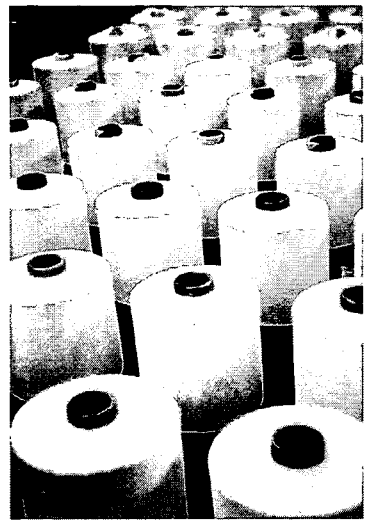
Our Manufacturing Processes



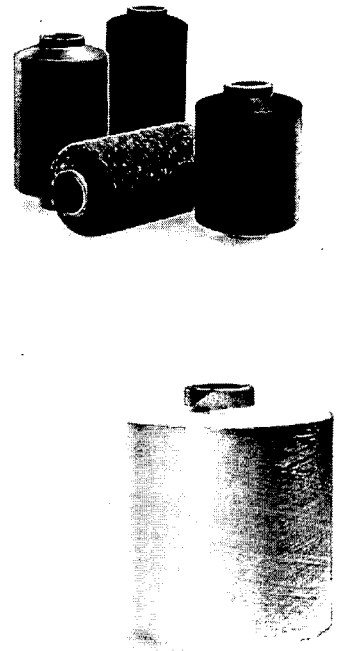
REPREVE Recycling Center;
Bottle flake to REPREVE Chip



POY Manufacturing



Yarn Texturing



Value-Added Processes –
Dyeing, Covering, Twisting, Beaming,
Solution and Package Dyed.

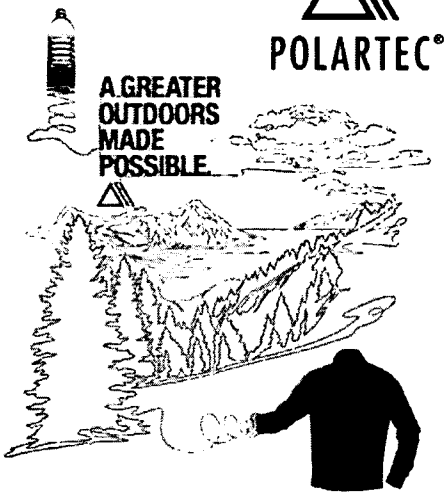
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IT'S WHAT'S IN IT™

THE NORTH FACE



POLARTEC®



REPREVE® | POLARTEC®

POLARTEC® REPREVE®100 RECYCLED FIBER BY UNIFI RECYCLED eco-engineering™

NORRØNA



REPREVE®

IT'S WHAT'S IN IT™

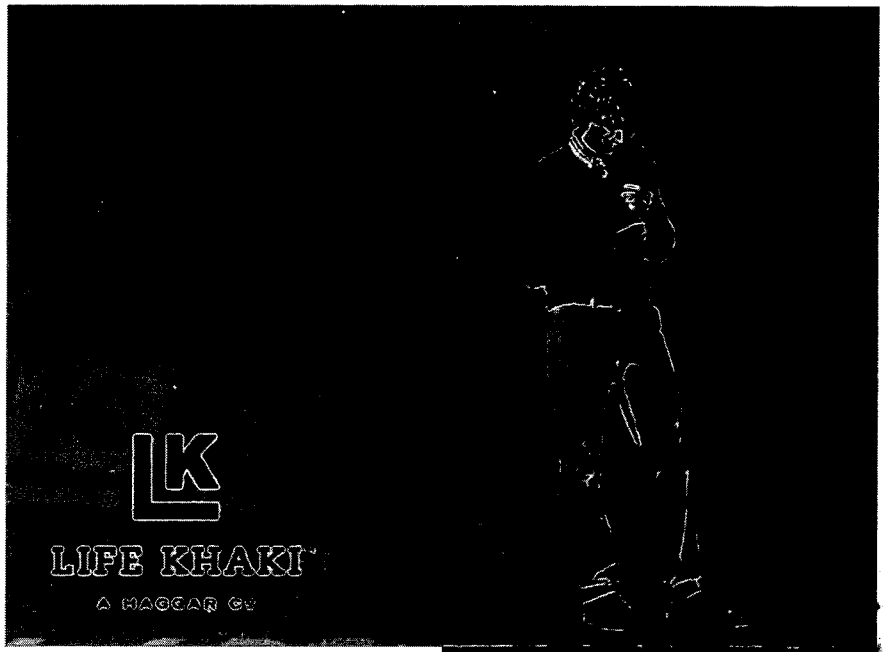
patagonia



REPREVE is in over 40 Patagonia styles for men, women, and children.

REPREVE®

IT'S WHAT'S IN IT™









Available in National Department Stores, including Belk, Macy's and JCP

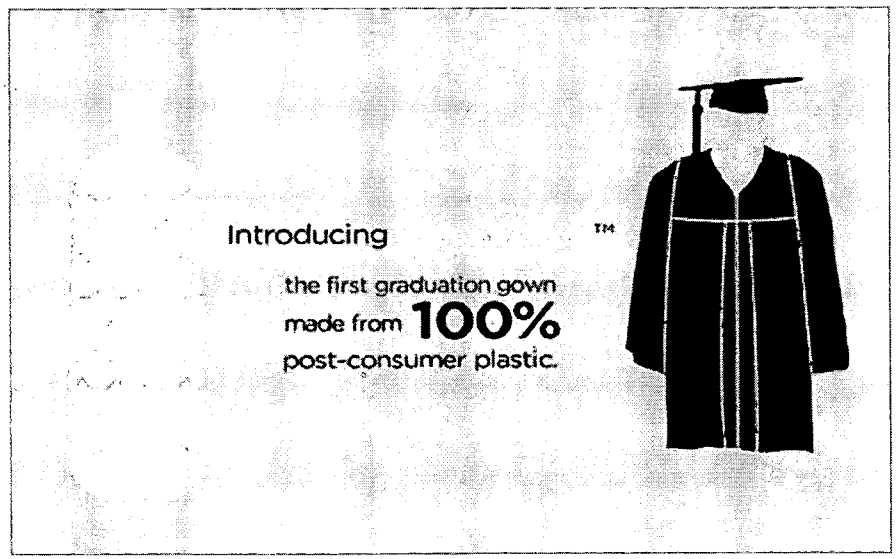
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Herff Jones' Renew=29 Bottles

OAK HALL CAP & GOWN
Oak Hall • C.E. Ward • Bentley & Simon
E.R. Moore • Cotrell & Leonard



Oak Hall GreenWeaver = 27 Bottles

REPREVE based cap & gowns were worn at over 480 schools.

REPREVE®

IT'S WHAT'S IN IT™

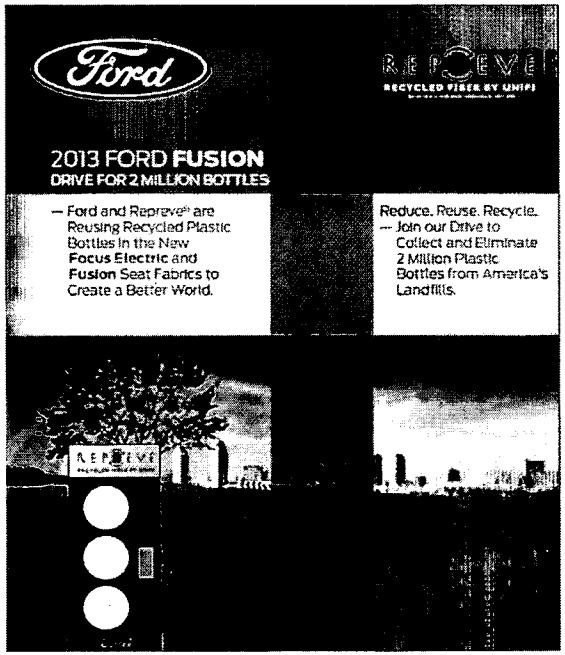


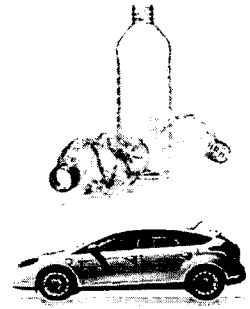


Over 4.5 Million REPREVE Based Jersey's during the 2012 NFL Season

REPREVE®

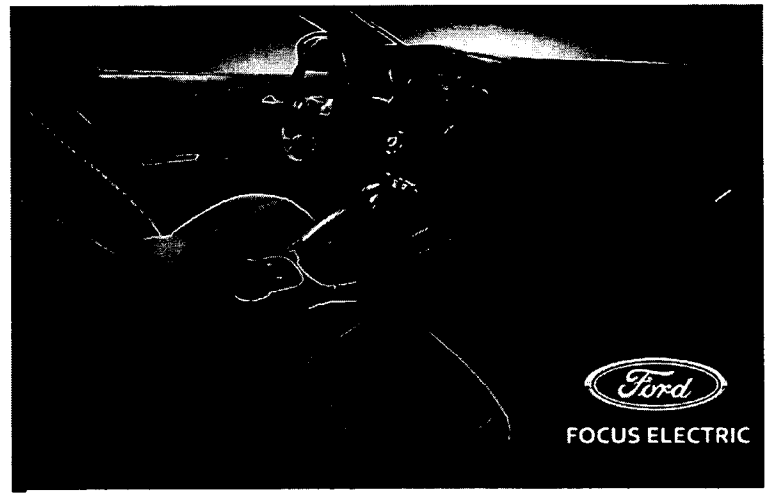
IT'S WHAT'S IN IT™

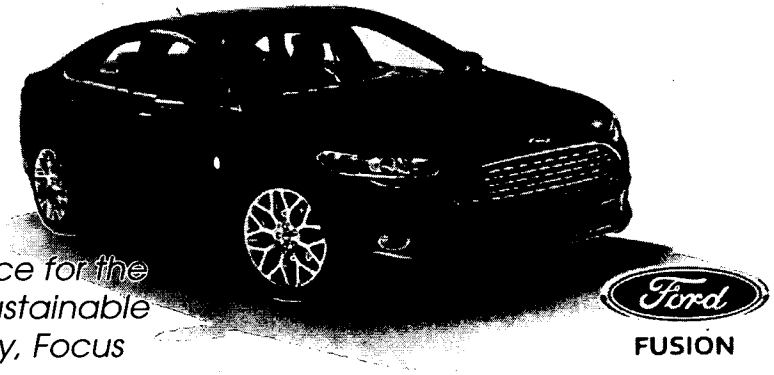


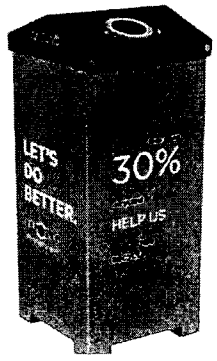


THIS BOTTLE COULD END UP IN A FORD FOCUS ELECTRIC.

{ *Please recycle it wisely.* }







"REPREVE based seat fabrics are a great choice for the Ford Focus Electric as it provides the type of sustainable material that consumers want,"-Chad D'Arcy, Focus Electric Marketing Manager at Ford

Over 2 Million Bottles Saved

SAGE
Automotive Interiors

REPREVE®

IT'S WHAT'S IN IT™

HON®





Specify REPREVE in a wide range office furnishings;
from wall coverings to seating fabrics from HON, AllSteel, and Steelcase.

REPREVE®

IT'S WHAT'S IN IT™



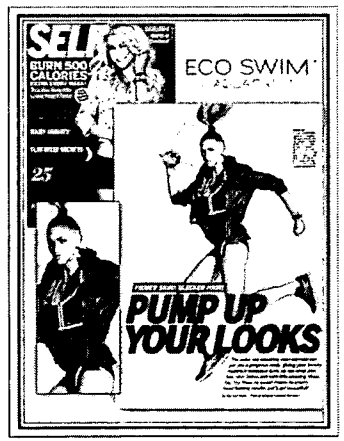














REPREVE. IT'S WHAT'S IN IT.
USED BY THE WORLD'S MOST RESPECTED BRANDS.

patagonia
Ford
XG eco
haggar
belk
THE NORTH FACE
MOHAWK
Blue Avocado
Eddie Bauer
KOHL'S
SAVANE
macy's
NORRØNA
Steelcase
ECO SWIM BY AQUAGREEN
MARKS& SPENCER
POLARTEC
vitamin A.
IZOD
JCPenney
HON
REI
Sears
ETHAN ALLEN
Julie
HERFF JONES.
H&M
THE HOME DEPOT
Allsteel
QUIKSILVER
OAK HALL CAP & GOWN
Walmart



Why REPREVE?

Brand Integrity, Quality & Transparency

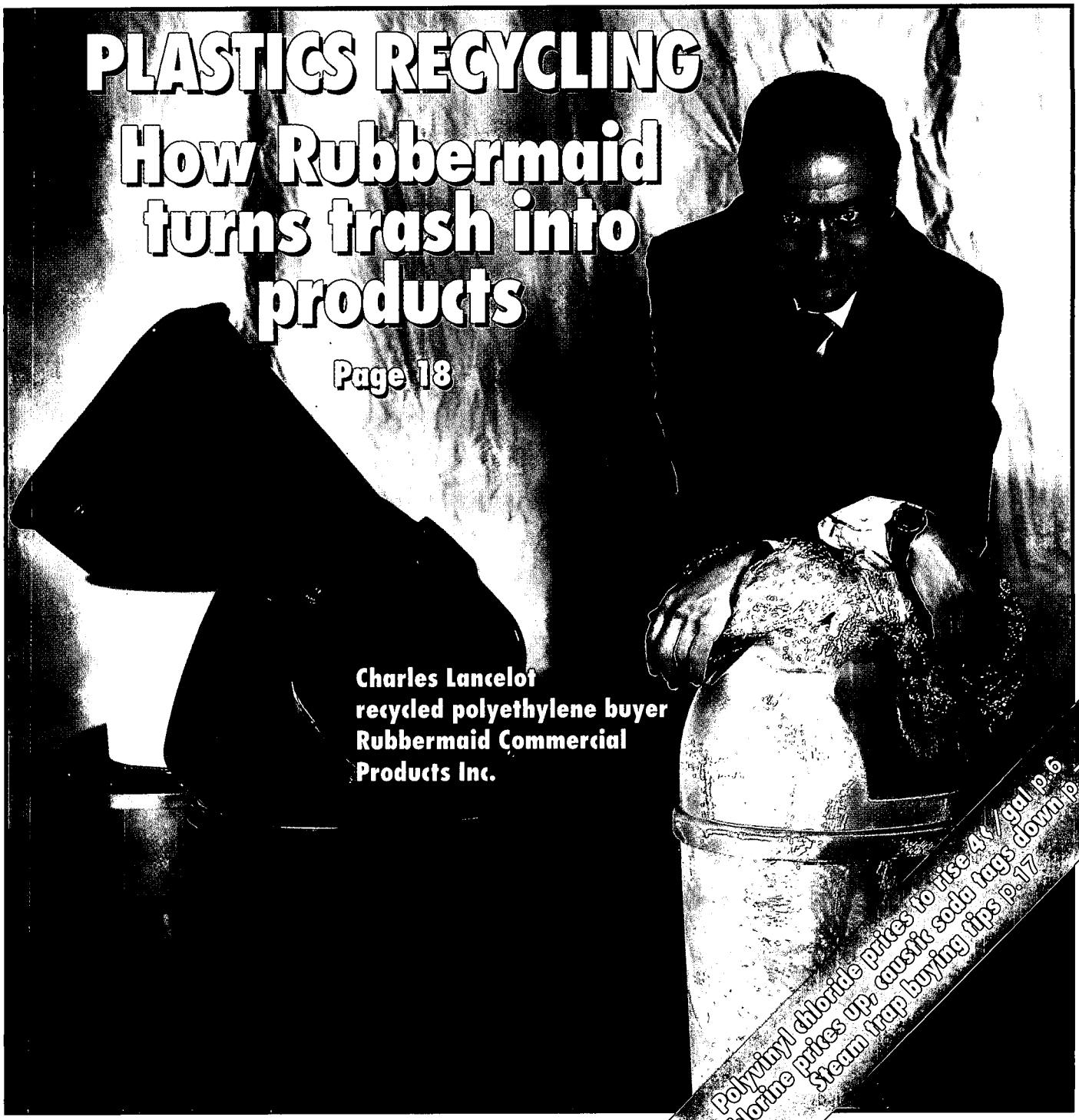
- Brand Story
- Transparency
- Authenticity
  - Certified for recycled content claims
- **Quality**
  - **1st quality recycled products that perform like non-recycled products**
- Solid Reputation
  - A Brand You Can Trust

A Cahners Publication May 1993

CPI Purchasing®

- ▶ **Polyethylene prices will stay low** p.24
- ▶ **Powder & bulk solids handling** p.29
- ▶ **Transaction price survey results** p.47

THE ONLY MAGAZINE FOR BUYERS IN THE CHEMICAL/PROCESS INDUSTRIES



PLASTICS RECYCLING
How Rubbermaid turns trash into products

Page 18

Charles Lancelot
recycled polyethylene buyer
Rubbermaid Commercial
Products Inc.

Polyvinyl chloride prices to rise 4¢/gal p.6
Chlorine prices up, caustic soda tags down p.7
Steam trap buying tips p.17

How buyers can help salvage recycling

Left with thin, if any, profit margins on some of their products, recyclers look for ways to increase market demand for recycled plastics. Rubbermaid helps the cause by "closing the loop" in LDPE stretch film

By John Conway / Senior Editor



Rubbermaid, a worldwide marketer and manufacturer of plastic and rubber products for household and commercial uses based in Wooster, Ohio, views the use of recycled plastics in its merchandise as more than just the environmentally correct thing to do.

"It goes beyond the altruism of recycling that everybody is into these days," says Joe Ramos, general manager of Rubbermaid Commercial Products Inc. in Winchester, Va. "It is fundamental to our business and will determine our ability to compete over the long term." Ramos says that in the not-too-distant future consumers will be demanding plastic products with recycled content, making it imperative for businesses to produce quality products with recycled resins.

While Rubbermaid's Housewares Products division is the largest potential consumer of post-consumer resins (PCR) in the company, it is the Commercial Products division that leads the "closed loop" recycling effort in low-density polyethylene (LDPE) and linear low-density polyethylene (LLDPE) stretch wrap. "It is closed loop in the sense that the market sector that used the stretch wrap gets it back in the form of a new product instead of putting it in a landfill," says Charles Lancelot, director of technology and business development for Rubbermaid Commercial Products.

***Charles Lancelot**, director of technology and business development at Rubbermaid Commercial Products, leans on one of the company's refuse containers made with recycled materials.*

Lancelot, who oversees supplier selection and sourcing of recycled materials, says that in 1993 the division will use about 6 million lb of recycled LDPE/LLDPE in more than 50 styles of refuse containers and other products, all of which will have 20% or more recycled content by the end of the year. "Rubbermaid Commercial Products is converting, on the average, a product a week to recycled content and is on target to use 9-10 million lb/yr of recycled LDPE by 1995," he says. He says the emphasis on recycled LDPE/LLDPE makes sense for Rubbermaid from a practical and an economical viewpoint.

"A variety of our refuse containers are molded from LDPE, and it is

for a common cause. In fact, due in part to Rubbermaid's projected growth in the stretch film area, Resource Plastics is undergoing a major expansion. "We started out as a small player, with about 15 million lb/yr capacity," says Wood. "But this expansion will give us 68 million lb/yr capacity if we were to do only rigid plastics, and 40 million lb/yr if we split between rigid and film, which is what we will be doing."

Recycling partnerships

In addition to this relationship with Rubbermaid, Resource Plastics also has a contract with Dow Canada to procure materials for the company and then sell recycled pellets to them. While this is somewhat of a unique relationship, it may be a harbinger of things to come. "Dow recognized that they are really not geared to the custom activities we're involved in," says Wood. "Dow is better in dealing with chemistry, which is heavily capital intensive; recycling is more labor intensive."

He says the relationship has worked extremely well, with Resource Plastics taking advantage of Dow's technical, marketing and distributing skills, and Dow reaping the benefits of Resource's improved products and service. "We get to use Dow's lab facilities, which is something we could never afford on our own," says Wood. "This is very important, because we are producing a material that is a substitute for virgin materials so we have to match technical skills. Recyclers have to gear themselves to be cost-effective, quality producers, and creating relationships like this is one way to go about it."

What's interesting about this relationship is that other virgin polyethylene producers, like Quantum, Phillips, Union Carbide and Hoechst Celanese, have chosen a different path than Dow Canada. Recognizing that, over time, recycled material will replace more and more virgin resins, each of these companies has its own recycling unit.

"Our principal motivation for getting into the recycled resin business is that we see ourselves as a broad-based polyolefin supplier to our customers," says Quantum Chemical's Perlson. "If our customer base wants to be able to purchase recycled polyolefin resins, then we want to be able to supply them."

Virgin polyethylene producers bring more than visibility to the recycling market; they also bring large-scale production units. In an industry where economies of scale are critical, this in and of itself gives larger companies an advantage. But recycling plastics is not the same as processing virgin materials, and this leaves plenty of opportunities for smaller, efficiently run recyclers to succeed.

"I think there is enough business out there for everyone who is cost competitive," says Graham Recycling's Prevot. Prevot says in today's environment it is important to run at full capacity, a luxury Graham Recycling has because of its relationship with Graham Packaging Co. Graham Recycling and Graham Packaging are operating units of The Graham Companies. Graham Recycling supplies the packaging arm with most of its recycled resins and sells very little on the open market.

George Glenn, president and chief executive officer at East Coast Recyclers Associates, Inc. in Millville, N.J., formerly a division of Wheaton Industries, says smaller companies have the versatility that larger companies do not. "We don't have the overhead, and we can make decisions quickly without waiting for approval from someone else," he says. He also says that smaller companies need to provide top quality materials each and every time. "One or two bad shipments can mean the fall of my entire business," he says.

Looking ahead

There is little doubt that consumers, manufacturers and legislators need to support recycling efforts if the industry is to prosper. Purchasing professionals also can play a role in solving the industry's current predicament. Buyers of recycled resins should look not only at the black and white of price, quality and availability, but also at the recycling industry as a whole. By understanding the ins and outs of what is, by all accounts, a relatively young industry, buyers are in a position to help plastics recycling emerge into the growth industry many have projected it to be.

Whenever solutions to current recycling problems are addressed, legislation rises to the top of the list. Says Sabourin, "The industry is in a position right now where it does need assistance if it is going to be sustained," he says. He says the APR supports legislation on the demand side—"initiatives to insist recycled materials be used."

Hal Yoh, president of Day Products in Bridgeport, N.J., says what makes it so difficult for recyclers today is that there is legislation based on the need to recycle. "It's required that materials be picked up, but there is nothing in place that says recycled materials have to be used," he says. "But legislation would have to be practical, not overbearing."

Many industry observers consider legislation the wild card in the future of recycling. For now, programs like Rubbermaid's stretch film recycling help create new markets for recycled materials. "Over time, we designed sorting and processing equipment to deal with stretch film," says Wood of Resource Plastics. "Essentially, in stretch film, you're talking about creating a whole new infrastructure—from collection and processing through reselling—and any time you want to do that, it's a tall order."

Lancelot says creating demand is what this particular recycling program is all about. "We need to swing the pendulum the other way," he says. "We have systems in place to collect and recycle, but we don't have the market demand. With this program, the lack of market demand is the gap that we are trying to close."

"Buy Recycled Campaign"

The National Recycling Coalition, in a joint effort with U.S. businesses, has started a "Buy Recycled Campaign" to encourage the purchase of recycled content products. Endorsed by the National Association of Purchasing Managers (NAPM), the campaign's purpose is to develop and expand markets for recycled materials, including plastics and paper.

Member companies in the Buy Recycled Business Alliance include Coca-Cola Co., Du Pont, James River Corp., Johnson & Johnson, Lever Bros., McDonald's, Rubbermaid and Wellman. In 1992, the Alliance, with approximately 30 members, purchased nearly $3 billion of recycled materials and recycled content products.

"The purchasing power of businesses could move recycling in this country," says Kathleen Meade, director of communications for the Coalition. For more information on the campaign, contact the National Recycling Coalition, Washington, D.C., at 202-625-6406.

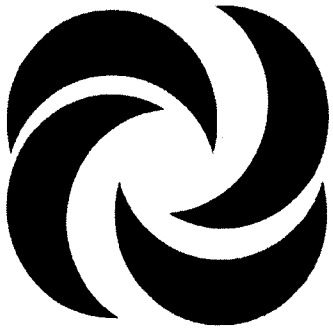
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Commercial Products

Rubbermaid Commercial Products Inc.
3124 Valley Avenue
Winchester, VA 22601

INERT BIODEGRADABLE PLASTICS IN THE RECYCLE STREAM



Plastics Environmental Council

XCALIBER ASSOCIATES, INC.

Charles J. Lancelot, Ph.D.
Principal Consultant

RALEIGH, NC

OCTOBER 11, 2012

CHARLES J. LANCELOT, PH.D., EXEC. DIRECTOR; PEC

Plastics Environmental Council

INERT BIODEGRADABLE PLASTICS IN THE RECYCLE STREAM

XCALIBER ASSOCIATES, INC.

The PEC – biodegradability of conventional plastics in landfills

- ***In landfills, not before they get there!***
- *Develop a biodegradability **standard specification** against which products can be certified as to their biodegradability **in landfills**.*
- *Leverage the plastics expertise of the PEC's membership and their networks to assist recyclers, reprocessors and endusers in the technology and business of cost-effective **plastics recycling**.*

XCALIBER ASSOCIATES, INC. – plastic materials expertise

- ***New and Reprocessed** plastic materials and technologies – identification and implementation.*
- *Plastic testing and failure analysis – assess **repro plastic quality.***
- ***Closed loop** plastics recycling – very successful at Rubbermaid. Delivered recycled polyethylene stretch wrap at 2 cents/lb under virgin PE.*



Plastics Environmental Council

INERT BIODEGRADABLE PLASTICS IN THE RECYCLE STREAM

XCALIBER ASSOCIATES, INC.

DEGRADABLE PLASTICS

TWO BROAD CLASSES:

- ***Bioplastics*** – *derived from renewable sources (a few exceptions)*
  - *Some are degradable (eg: PLA, (Mirel™, etc.). Will contaminate a recycle stream due to incompatibility, not to premature degradation.*
  - *Some are not degradable (eg: PE derived from sugar-fermented ethanol). Will not contaminate a recycle stream due to incompatibility.*
- ***Conventional plastics*** – *derived from petrochemical feedstocks*
  - ***Oxobiodegradable*** *- an additive programs the plastic to degrade after a period of time in air (oxygen), which may happen between normal use and final disposal –* ***that's what NC is concerned about****.*
  - ***Biodegradable*** *– an additive causes biodegradation under the influence of microorganisms* ***in landfills – not before they get there.***

IT APPEARS THAT BIODEGRADABLE AND OXOBIODEGRADABLE PLASTICS AND ARE BEING CONFUSED WITH ONE ANOTHER

Plastics Environmental Council

INERT BIODEGRADABLE PLASTICS IN THE RECYCLE STREAM

XCALIBER ASSOCIATES, INC.

BIODEGRADABLE CONVENTIONAL PLASTICS

(polyethylene (PE, #2;4); polypropylene (PP; #5), polystyrene (PS; #6), PET (#1)

- *Additives typically are proprietary organic materials that are compounded in steps into the conventional plastics such as those listed above.*
- *Final additive levels of 0.5-2.0% in the plastic are typical.*
- *Until the additive-treated conventional plastic reaches the landfill environment, the additive does nothing to the host conventional plastic. It does not make it sensitive to air (oxygen). In other words, the additive system is* ***inert outside of a landfill,*** *like an ordinary colorant or dye.*
- *Once in the presence of the landfill microorganisms, only then does the additive initiate and promote solely a bio<u></u>degradation process.*
- *This happens via a well-understood series of biochemical processes facilitated by the microrganisms' enzyme systems once they are acclimatized to the conventional plastic.*

Plastics Environmental Council

INERT BIODEGRADABLE PLASTICS IN THE RECYCLE STREAM

XCALIBER ASSOCIATES, INC.

BIODEGRADABLE CONVENTIONAL PLASTICS

(polyethylene (PE, #2;4); polypropylene (PP; #5), polystyrene (PS; #6), PET (#1)

- *The PEC has worked with **ASTM** throughout 2012 to create a new **standard specification for biodegradation** of additive-treated biodegradable conventional plastics in landfills.*
- *The standard is based on laboratory simulation technology developed by Prof. Morton Barlaz at NC State University, and on his lab/landfill modeling approach.*
- *The draft standard has gone through several rounds of balloting with extensive revisions and is now approved by the Biodegradable Plastics Institute (BPI).*
- *The current draft will be re-balloted at the upcoming general meeting of ASTM in November.*

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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October 11, 2012

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on April 26, 2012. All reports are available online on the Commission website:

(http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received). If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or **mariahm@ncleg.net** for assistance.

A. The following reports have been submitted and are being distributed in connection with today's agenda as follows.

1) Environmental Management Commission.

Quarterly report by the EMC as to its operations, activities, programs, and progress during the previous quarters. April 15, 2012, July 15, 2012, October 15, 2012. Statutory Authority: G.S. 143B-282(b). ***Agenda Item #4***

2) Department of Environment and Natural Resources.

Annual report on the progress of water supply planning. September 1, 2012. Statutory Authority: G.S. 143-355(n). ***Agenda Item #5***

3) Department of Agriculture and Consumer Services.

Report on the 2011 Agricultural Water Use Survey. July 1, 2012. Statutory Authority: G.S. 106-24(b). ***Agenda Item #6***

B. The following reports have been submitted and may be distributed in conjunction with a presentation at a future meeting of the Commission.

1) Department of Agriculture and Consumer Services.

a. Annual report on the activities of the North Carolina Agricultural Development and Farmland Preservation Trust Fund Committee. October 1, 2012. Statutory Authority: G.S. 106-744(i), as amended by S.L. 2009-484, Sec. 12.

b. Annual report on the Department of Agriculture and Consumer Service's management activities at DuPont State Recreational Forest during the preceding fiscal year and plans for management of DuPont State Recreational Forest for the upcoming fiscal year. October 1, 2012. Statutory Authority: G.S. 106-857 (i).

2) Department of Environment and Natural Resources.

a. Annual report on the cost of implementing the Mining Act of 1971. September 1, 2012. Statutory Authority: G.S. 74-54.1(c).

b. Annual report on three river basin advisory commissions (Catawba/Wateree River Basin Advisory Commission, the Roanoke River Basin Advisory Commission, and the Yadkin/Pee Dee River Basin Advisory Commission). October 1, 2012. Statutory Authority: G.S. 77-117 and G.S. 77-98.

c. Annual report on summary of changes to the State Parks System Plan during the 2009-2010 fiscal year (*plan not revised during 2011-2012 fiscal year*). Oct 1, 2012. Statutory Authority: G.S. 113-44.11.

d. Annual report on the Parks and Recreation Trust Fund, Fiscal Year 2011-2012. October 1, 2012. Statutory Authority: G.S. 113-44.15(c).

e. Annual report on the Conservation Easement Program. October 1, 2012. Statutory Authority: G.S. 113A-235(c).

f. Annual report on the implementation of stormwater rules and programs. October 1, 2012. Statutory Authority: G.S. 143-214.7(e).

g. Annual report on Basinwide Water Quality Management Plans. October 1, 2012. Statutory Authority: G.S. 143-215.8B(d).

h. Annual report on the compliance/enforcement of water quality laws for facilities that discharge into surface waters. October 1, 2012. Statutory Authority: G.S. 143-215.9A.

i. Annual report on permitting and inspecting animal waste management systems/Animal Waste Compliance Report. October 1, 2012. Statutory Authority: G.S. 143-215.10M.

j. Annual report on the Dry-Cleaning Solvent Cleanup Act of 1997. October 1, 2012. Statutory Authority: G.S. 143-215.104U.

k. Annual report on the progress in developing and implementing the Coastal Habitat Protection Plan. September 1, 2012. Statutory Authority: G.S. 143B-279.8(e).

l. Annual report by the Drought Management Advisory Council. October 1, 2012. Statutory Authority: G.S. 143-355.1(g).

m. Report of Superfund cost share fund expenditures for cleanup of sites on the National Priorities List. Within 30 days of expenditure (June 2012). Authority: S.L. 1999-237, Sec. 15.6.(b).

n. Report on the pilot program to retrofit certain school buses in nonattainment areas. September 15, 2012. Authority: S.L. 2007-465, Sec. 4(b).

o. Annual report on the implementation of permitting the construction of a terminal groin under the pilot program. September 1, 2012. Authority: S.L. 2011-387.

10-10-12

Thank you for taking my call today, especially before the election. Virginia Governor McDonnell is behind a campaign to lift the 30 year old moratorium on uranium mining in Virginia. The site to be mined is about 20 minutes North of Danville on the Bannister River, which flows into the Kerr Lake Reservoir where 7 North Carolina counties draw their drinking water from. The 4 site- specific studies done to date have advised that mining in a hurricane zone prone to periods of high rainfall in short periods of time, combined with a proximity to an earthquake fault line and located next to high density populations who rely on the water including all of NE North Carolina and the Hampton Roads communities surrounding and including Virginia Beach and our military installations, would not be advisable due to the probability of radioactive contamination entering the waterway, making the Roanoke river unfit for consumption or recreation for generations.

Timeline: The governor is going to bring a recommendation to lift the ban in Virginia when the General assembly convenes in January. He is pursuing an option to lift the ban in Pittsylvania county if the county supervisors vote to allow it, in order to draw republican votes into the majority. Many oppose lifting the ban, don't want it happening in their "backyard"

North Carolina has been officially silent on the matter, probably because of the election, however all the cities and county governments have passed resolutions against lifting the ban in Virginia and have communicated this to VA Governor McDonnell. Bev Perdue is absent "without leave" on the entire subject despite being urged by Representative Edith Warren and others in her party.

I have formed a coalition of the County government associations, the Roanoke river mayors association, the Roanoke valley chamber of commerce and the lake Gaston Chamber of commerce and the lake Gaston association and the Kerr lake association as well as property owners here at the lake to oppose this threat and bring north Catalina's voice to the debate in VA. Our entire economy is based on our water up here, our health is at stake and our property values and tax values are all at risk. Uranium mining is a dirty business, and there are no mines anywhere in the world located in a hurricane zone that can cause a breach of the containment cells holding the radioactive material causing contamination locally and downstream. Radioactive dust will travel as far as Rockingham county in NC and possibly to Greensboro.

I would like to sit with you and show you the data, and discuss a strategy, even if it is after the election, to educate our state officials on this threat and get a statement of opposition from NC formally to the Virginia Governor before the General Assembly reconvenes in January.
I will travel to wherever you are if time permits in the next two weeks, A policy against Uranium mining in this region is not a threat to the Republicans goal of energy independence, and I will show you why.

My contact information is below, and thank you again, so much, for your consideration..

Regards,

Mike Pucci
Chairman, NC Coalition Against Uranium mining.
--
Mike Pucci
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MINUTES
ENVIRONMENTAL REVIEW COMMISSION
November 15, 2012

The Environmental Review Commission (ERC or Commission) met on Thursday, November 15, 2012 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Gillespie presided.

The following members were present: Chair, Representative Mitch Gillespie Co-Chair, Representative Ruth Samuelson, Senator Fletcher Hartsell, Senator Brent Jackson, Representative William Brisson, Representative Carolyn Justice and Representative Chuck McGrady. Mr. Jeff Hudson, Commission Counsel, Ms. Jennifer Mundt, and Ms. Jennifer McGinnis, Commission Analyst, Ms. Mariah Matheson, Research Assistant, Mr. Peter Ledford, Attorney and Mr. Jeff Cherry, Bill Drafting Attorney; and Ms. Sarah Neunzig, Commission Clerk, Sargent-at-Arms. Attachment #1 and #2.

On October 29, 2012 and November 8, 2012, notices was sent to members and interested parties via e-mail. Copies of the notices are included in the attachments to these minutes as Attachment#3 and #4. Copies of the agenda for the meeting and visitor registration sheets are included in the attachments to these minutes as Attachment #5 and Attachment #6, respectively.

Call to order and introductory remarks

Representative Gillespie called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized Ms. Robin Smith from DENR and her planned retirement. She gave a few words and was recognized by the members and visitors.

Representative Gillespie then recognized his Co-Chair, Representative Samuelson, for introductory remarks. He then recognized Mr. Jeff Hudson, Commission Counsel, to provide an overview of the meeting agenda. Mr. Hudson reviewed the agenda: Development and prioritization of the State's impaired waters, Determinations for development of hydrologic models of ecological flow, Uranium mining in Virginia and its potential impacts on North Carolina, Update on the L&S Hydro v Piedmont Triad Regional Water Authority litigation, and the annual report on the Inactive Hazardous Sites Program.

Representative Gillespie then asked if there were any questions and seeing none he proceeded.

Presentation on development on prioritization of the State's list of impaired waters

Representative Gillespie recognized Mr. Chuck Wakild, Director of the Division of Water Quality, Department of Environment and Natural Resources (DENR). He gave a basic explanation through the use of his PowerPoint presentation of the "303(d) List" Process. A copy of the presentation is included in the attachments to these minutes as Attachment #7. Mr. Wakild asked if members had questions.

Representative Samuelson asked about municipal water quality standards and their relation to the state's standards. Mr. Wakild responded that the results reported to the EPA are based on the state standards, regardless of any additional or different municipal standards.

Representative Samuelson asked a follow-up question if there are any municipalities or counties that have more strict water quality standards than the state standards. Mr. Wakild responded that to his knowledge there are none stricter than the state's regulations. The qualifications in obtaining a permit are based on state standards, not municipal or county.

Representative Justice mentioned the 35 sampling sites along the Cape Fear River that are maintained through University of North Carolina at Wilmington (UNCW) and wanted to know if the data from those sites are included in his data. Mr. Wakild responded that these sites' information is included in this evaluation process.

Representative Justice followed up by explaining that some of these sites were started by a combination of local government support and private industry funding. The data found by these private industries might help us identify potential future industry along our rivers without harm to our water quality.

Representative Gillespie asked the result of the vote on the changes to the 303(d) list process from EMC. Mr. Wakild stated he believed it was a unanimous vote, but he will follow up with confirmation.

Representative Samuelson asked whom are the interested parties and how does the agency know if they are reviewing and commenting on the processes. Mr. Wakild stated that the most interested parties are people with permits, with a general concern about water quality, environmentalists and municipalities. The most interested parties have been utilities and local governments. These parties are kept abreast of their information via list serves and public notices on their website.

Representative Brisson asked how the state maintains the data from the large number of sites across the state. Mr. Wakild explained there is an ambient network across the state, where several hundred sites are visited by a DWQ person once a month. Other sites are visited once a year and some every five years. The frequency of visits is dependent upon the parameters which the Division is looking into or researching. He also explained that some private industries are taking their wastewater discharge and sending their samples to a private lab or do it in house at their own cost. They will then send this data to the agency for additional data collection. Other entities that do their own research also contribute to the state's data such as universities, other agencies, and the US Geological Survey. When the data is presented to the public it is shown in five year slices including the data from each of these sources across the state.

Representative Brisson followed-up by asking if all bodies of water are governed by the federal guidelines and if the state exceeds these guidelines. Mr. Wakild explained the federal Clean Water Act was established and allowed each state to create its own guidelines. North Carolina did that and our standards were approved by the EPA.

Senator Hartsell asked what verification DENR has used to state "NO" as the response to the question if any state land is involved in the Yadkin River. He asked Mr. Wakild to provide the Commission some verification how DENR has proved that this is not state-owned land.

Senator Jackson asked how to compare the state's guidelines with the neighboring states to North Carolina. Mr. Wakild responded that in the major areas they are similar and easily comparable. He will provide a copy of that information to all Commission members.

Presentation on ecological flow determinations for development of hydrologic models

Representative Gillespie recognized Mr. Thomas Reeder, Director of the Division of Water Resources, DENR to speak on ecological flows and their multiple uses throughout the state. The PowerPoint presentation is included as Attachments #8 and #9 respectively.

Representative Gillespie asked Mr. Reeder to discuss the Science Advisory Board meetings and is there time and opportunity for public. Mr. Reeder stated that they are publicly streamed on website and are kept for the public.

Representative Gillespie asked when grants are given for water supply and if points are given to these facilities. Mr. Reeder responded that yes, priority points are given.

Senator Hartsell asked what the percentage of use is in a typical municipal system. Mr. Reeder responded that there are some systems in NC that draw water and then go to a septic system, which is 100% water loss. The average typical municipal system with sewer system returns around 60% of the water into the sewer system. This percentage will vary from city to city; the agency is routinely communicating and collecting data regarding water loss. If we find a certain city is losing more than normal, the agency will assist with that municipality.

Representative Justice asked what the priority points do and their purpose. Mr. Reeder responded that there is an application for the Drinking Water Assistance Program, and there are routinely more requests than money available. So priority points are assigned to aid in the ranking system to determine which get assistance and have a higher need than others.

Representative McGrady asked if part of the problem of water loss in the mountain area is due to the topography. Mr. Reeder agreed and said topography contributed to water loss. He also stated there are multiple small towns in the mountains that have old infrastructure which contributes to water loss due to their water leaks. Yes, it is contributing to their water loss. Lots of old infrastructure and water leaks without funds to fix and causing large amounts of water loss. The pressure changes and hills contribute to loss too.

Uranium mining in Virginia and its potential impact on North Carolina

Representative Gillespie recognized Mr. Thomas Reeder, Director of the Division of Water Resources, DENR. Mr. Reeder addressed the location of the mining in Virginia, the current mining ban in Virginia, and North Carolina's actions to date, Attachment #10.

Representative Gillespie asked if this information has been included in the transition documents to the new governor and General Assembly members. Ms. Robin Smith commented and said she cannot remember if this was included, if she finds that it was not, she will be sure to send a separate document to highlight the importance of this issue.

Representative Samuelson asked if Mr. Reeder can send his report to the incoming congressional delegation so they can meet with the delegation from Virginia. She then posed a question to Chair Gillespie if the Commission can help in recommending something to the 2013 General Assembly members and the governor.

Representative Gillespie directed staff to prepare a letter to send to the State's Congressional delegation and a joint resolution to consider for recommendation to the 2013 Session of the General Assembly to oppose lifting the current ban on uranium mining.

Report on the L&S Hydro v Piedmont Triad Regional Water Authority

Representative Gillespie introduced Mr. Richard Whisnant, Associate Professor of Public Law and Government from the School of Government at the University of North Carolina at Chapel Hill. His remarks are included in the minutes as Attachment #11.

Representative Samuelson asked about permitting for large water users and if he can clarify how this works. Mr. Whisnant explained that some permit the withdrawer of water and some permit the user of the water. Every state looks at it differently and some do it both ways. The user that pulls the water from the stream, whether it a municipality or not, is responsible for the water use, the example given was the City of Charlotte.

Representative McGrady questioned the legal theory of eminent domain for water rights. Mr. Whisnant gave his opinion that the Court of Appeals looked at the laws from the 1970s and saw that they treat the parties of eminent domain differently in relation to property rights. He feels they want to spread the cost over everybody upstream for the one that is injured downstream.

Annual Report on the Inactive Hazardous Sites Program

Representative Gillespie introduced Mr. Dexter Matthews, Director of the Division of Water Management in DENR. Mr. Matthews gave his overview of the program and some recommendations and highlighting a site outside Wake Forest that is a good example of what they are dealing with across the state. His presentation is included in the minutes as Attachment #12, #13 and #14.

Ms. Jennifer McGinnis asked if Mr. Matthews would provide the staff with his recommendations.

Representative Justice questioned the increase in money to extend the water lines and if it would benefit others in the community or is the benefit confined to the one house that was improved. Mr. Matthews responded that water lines can be extended and neighbors can benefit from extension of lines.

Representative Samuelson asked about the changes and amounts of the Bernard Allen Fund. If the legislature changed the amounts and it decreases the number, what impact would that have on the success of the Fund and if there should be a concern about abuse of the program, which would then cause them to legislate limits? Mr. Matthews suggests that there should be a level that is allowed per household. The change would allow his agency to spend more on isolated instances where more remote wells are located. He assured the Commission that the funds are all being used every year and there are many sites, and that some high risk sites that are not being visited due to funding limitations.

Representative Samuelson, follow-up question concerning recent legislation which stated a risk based cleaned up should be implemented, did this legislation help. Mr. Matthews responded that it has not helped this program directly.

Representative Samuelson, follow-up, regarding a constituent complaint about continual paperwork after they received a 'no further action' notice. Mr. Matthews will look into it specifically, the only way it would continue is if there are land use restrictions in place on the property.

Disposition of Reports, Attachment #15

Commission discussion and announcements

Representative Gillespie thanked the members and staff, and announced the next meeting to be held in December, the specific date to be sent to the Commission members when final. Recommendations from the ERC on how the General Assembly will move forward during the next session. The Chair requested members are to bring their recommendations or deletions to the December meeting for their input.

Adjournment

Representative Gillespie adjourned the meeting at 12:25PM.

Chair Representative Mitch Gillespie

Co-Chair Senator David Rouzer

Co-Chair Representative Ruth Samuelson

Attest:

Cindy Hobbs, Committee Clerk

ATTENDANCE

Environmental Review Commission

DATES	11/15/17														
Sen. David Rouzer (Chair)															
Rep. Mitch Gillespie (Co-Chair)	✓														
Rep. Ruth Samuelson (Co-Chair)	✓														
Sen. Stan Bingham															
Sen. Dan Clodfelter															
Sen. Fletcher Hartsell	✓														
Sen. Brent Jackson	✓														
Sen. Bill Rabon															
Sen. Michael Walters															
Rep. William Brisson	✓														
Rep. Joe Hackney															
Rep. Carolyn Justice	✓														
Rep. Pat McElraft															
Rep. Chuck McGrady	✓														
Rep. Roger West															
Staff:															
Jeff Hudson	✓														
Jennifer McGinnis	✓														
Jennifer Mundt	✓														
Mariah Matheson	✓														

#2

Committee Sergeants at Arms

NAME OF COMMITTEE ENVIRONMENTAL REVIEW COMMISSION

DATE: NOV. 15, 2012 Room: 544

House Sgt-At Arms:

1. Name: FRED HINES
2. Name: CARL MORELLO
3. Name: _____
4. Name: _____
5. Name: _____

Senate Sgt-At Arms:

1. Name: Steve Wilson
2. Name: Charles Marsalis
3. Name: _____
4. Name: _____
5. Name: _____

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
SENATOR STAN BINGHAM
SENATOR DANIEL G. CLODFELTER
SENATOR FLETCHER L. HARTSELL, Jr.
SENATOR BRENT JACKSON
SENATOR BILL RABON
SENATOR MICHAEL P. WALTERS

REPRESENTATIVE WILLIAM D. BRISSON
REPRESENTATIVE JOE HACKNEY
REPRESENTATIVE CAROLYN H. JUSTICE
REPRESENTATIVE PAT MCELRAFT
REPRESENTATIVE CHUCK MCGRADY
REPRESENTATIVE ROGER WEST

JEFF W. HUDSON
COMMISSION COUNSEL
545 LEGISLATIVE OFFICE BUILDING
300 NORTH SALISBURY STREET
RALEIGH, NORTH CAROLINA 27603
(919) 733-2578

JENNIFER L. McGINNIS
COMMISSION COUNSEL

JEFF CHERRY
COMMISSION COUNSEL

JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

October 26, 2012

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Cindy Hobbs, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at 9:30 a.m. on Thursday, November 15, 2012, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. Potential agenda items for the meeting will be included in a subsequent notice.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Cindy Hobbs, Commission Clerk, at (919) 733-5862.

#4

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

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COMMISSION COUNSEL

JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

November 8, 2012

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Cindy Hobbs, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at 9:30 a.m. on Thursday, November 15, 2012, in Room 544 of the Legislative Office Building, Raleigh, North Carolina. The agenda for the meeting is expected to include a presentation on ecological flow determinations for development of hydrologic models, a presentation on development and prioritization of the State's list of impaired waters pursuant to Section 303(d) of the federal Clean Water Act, a presentation on the L&S Hydro v Piedmont Triad Regional Water Authority litigation, and the annual report on the Inactive Hazardous Sites Program. Please note this agenda is tentative and subject to change.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Cindy Hobbs, Commission Clerk, at (919) 733-5862.

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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COMMISSION COUNSEL

JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

9:30 a.m. Thursday, November 15, 2012
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Mitch Gillespie, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Presentation on development and prioritization of the State's list of impaired waters, pursuant to Section 303(d) of the federal Clean Water Act *(30 minutes)*
   Chuck Wakild, Director
   Division of Water Quality, Department of Environment and Natural Resources (DENR)

5. Presentation on ecological flow determinations for development of hydrologic models *(1 hour)*
   Thomas A. Reeder, Director
   Division of Water Resources, DENR

6. Presentation on potential mining for uranium in Virginia and possible impacts and issues for North Carolina *(30 minutes)*
   Thomas A. Reeder, Director
   Division of Water Resources, DENR

7. Presentation on L&S Hydro v Piedmont Triad Regional Water Authority litigation *(45 minutes)*
   Richard B. Whisnant, Associate Professor of Public Law and Government
   School of Government, University of North Carolina at Chapel Hill

8. Annual report on the Inactive Hazardous Sites Program (G.S. 130A-310.10) *(1 hour)*
   Dexter Matthews, Director
   DWM, DENR

9. Commission discussion and announcements

10. Adjourn

FUTURE MEETINGS:

The Environmental Review Commission will meet as follows in the Legislative Office Building (LOB), Raleigh, North Carolina. **This schedule is tentative and subject to adjustment.** For planning purposes, however, please reserve these dates.

TBD

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

VISITOR REGISTRATION SHEET

ERC — 11-15-12

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Don Rayno	NCDENR-DWR
Nadia Luhr	NC Conservation Network
Gordon McBride	DE Commission Natural
R Rogers	NCCW WTP
Chuck Wakild	NCDENR/DWQ
Richard Whisnant	UNC SOG
Doug Crosby	NCSTA
Allen Hardison	CRSWMA
John Poland	NCDOT
Chris Dillon	NCMA
Joy Hicks	NCDA&CS

VISITOR REGISTRATION SHEET

ERC — 11-15-12

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Bill Cary	DENR
[signature]	[illegible]
MayMade Abiu	SELC
Kari Barsness	DENR
Ted Bush	DENR/DWQ
Whitney Christensen	NCRLA
George Smith	
Trina Ozer	DENR
Ashley [illegible]	[illegible]
Tom [illegible]	EDF
Therese Vick	BREDL

VISITOR REGISTRATION SHEET

ERC — 11-15-12

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Jim Johnson	BSA
DAVID BARNES	PS
Susanna Davis	Williams Mullen
Gene Aldesso	Roanoke River Basin Association
Ryke Longest	Duke School of Law / ELPC
Rob Hanna	TLA
Andy Chase	KMA
Lori Ann Harris	LAHA
David McNaughton	NCAR
JGOODMAN	NC CHAMBER

VISITOR REGISTRATION SHEET

ERC — 11-15-12

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Paul Sherman	NCFB
Vernon Cox	NCDAFCS
Amy McConkey	NC Beverage Assoc.
Doug Howey	NCPCMI
Erin Wynia	NCLM
Alex Bodzer	Carolina State Strategies
Heather Barnett	Ward & Smith

VISITOR REGISTRATION SHEET

ENVIRONMENTAL REVIEW COMMISSION - NOV. 15, 2012

Name of Committee **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Mike Pucci	127 Redbud Ct, Littleton NC 27850 NC Coalition Against Uranium Mining
Doug Lassiter	NCSTA
John Shaw	CAP. GRP. Sierra Club
Jay Sauber	NC DWQ
Weldon Jones	Jordan, Price
Jimmy Broughton	Womble Carlyle
Sarah Wolfe	MWC LLC
Rw/Caylor	Kaylor Law Firm
Jessie Birckhead	The Nature Conservancy
Brooks Rainey Pearson	SELC
Daniel Baum	Troutman Sanders

"303(d) List" Process

1

CHUCK WAKILD, DIRECTOR
DENR DIVISION OF WATER QUALITY

1997 – Revision to NC General Statutes

- **143B-282(c)**: The Environmental Management Commission shall implement the provisions of subsections (d) and (e) of 33 U.S.C. § 1313 by identifying and prioritizing impaired waters and by developing appropriate total maximum daily loads of pollutants for those impaired waters. The Commission shall incorporate those total maximum daily loads approved by the United States Environmental Protection Agency into its continuing basinwide water quality planning process.

Clean Water Act Section 303(d)

1972 Federal Water Pollution Control Act

- Each State shall identify waters that do not meet any **water quality standard** applicable to such waters
- This is the ***"303(d) List"***
- EPA shall approve or disapprove list

40 CFR 130.7

- State shall submit list to EPA by April 1 of every even-numbered year

Water Quality Standards

- Clean Water Act: States establish standards for in-stream water quality
  - Requires EPA approval
- NC G.S. 143-214.1 requires EMC to adopt standards
- Standards include
  - Uses to be made of waterbodies
    - Water supply, aquatic life, recreation
  - Criteria to protect those uses
    - Numeric, e.g., 5 mg/L dissolved oxygen
    - Narrative, e.g., waters shall be suitable for aquatic life propagation

303(d) List Process

- Compile data from rivers, lakes, estuaries
- Confirm data quality
- Compare data to **standards**
- Compile list of waters that do not meet standards
- Provide for public review and comment
- Respond to comments
- Submit list to EPA for approval

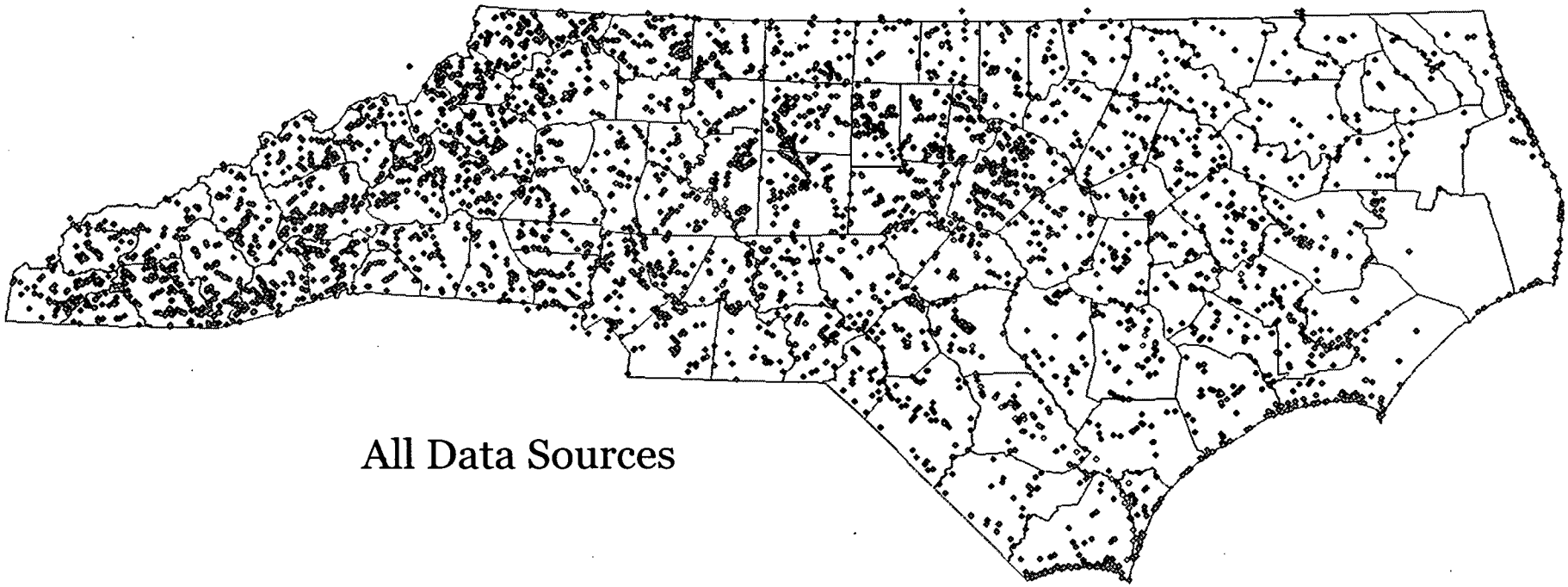
- Repeat (continuous 2-year process)

Data Considered

- Five-year time period
- Approximately one million observations
- Sources include
  - DWQ
  - Wastewater coalitions (municipalities & industries)
  - Other state agencies
  - Federal agencies
  - Universities
  - Local governments
  - Utilities

Data Collection Sites

7



All Data Sources

What happens after listing?

- List is used for
  - Basin plans
  - Targeting DWQ & others' technical & financial assistance
  - Informing permitting
  - Developing Total Maximum Daily Loads (TMDLs) as required under CWA Section 303(d)

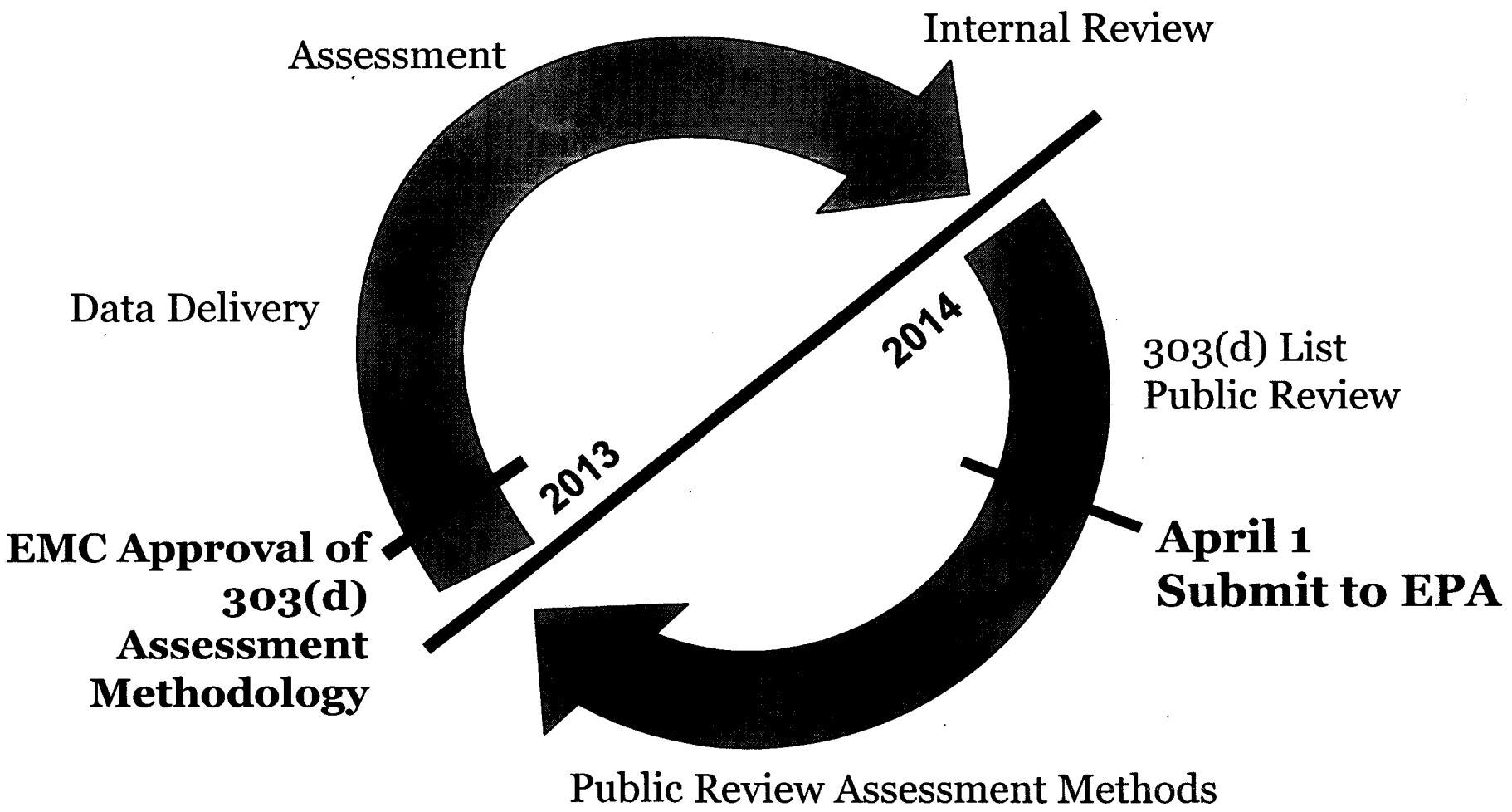
- **Goal**
  - **Improve water quality, attain standards**

New EMC Process

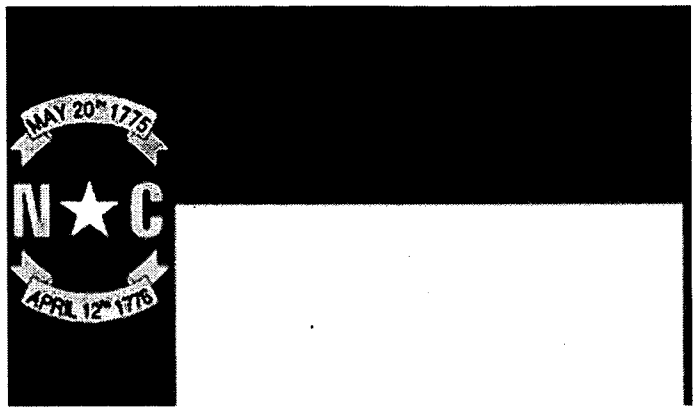
- Adopted November 8, 2012

- 303(d) Assessment Methodology
  1. Public review and comment
  2. Water Quality Committee approval
  3. EMC approval

2014 303(d) Assessment Cycle



#8



Ecological Flows and Their Potential Effects in NC

Environmental Review Commission
November 15, 2012

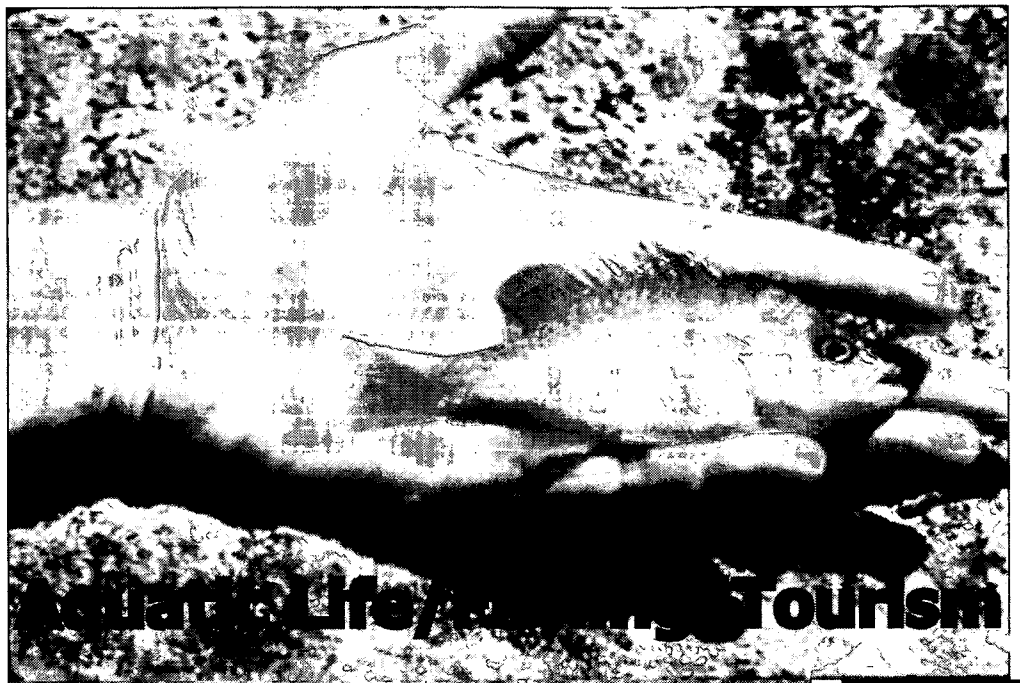
Overview

- What are ecological flows?
- Potential effects on:
  - Existing & Future Water Withdrawals
- Positive Impacts of Ecological Flows
- Water Security in NC

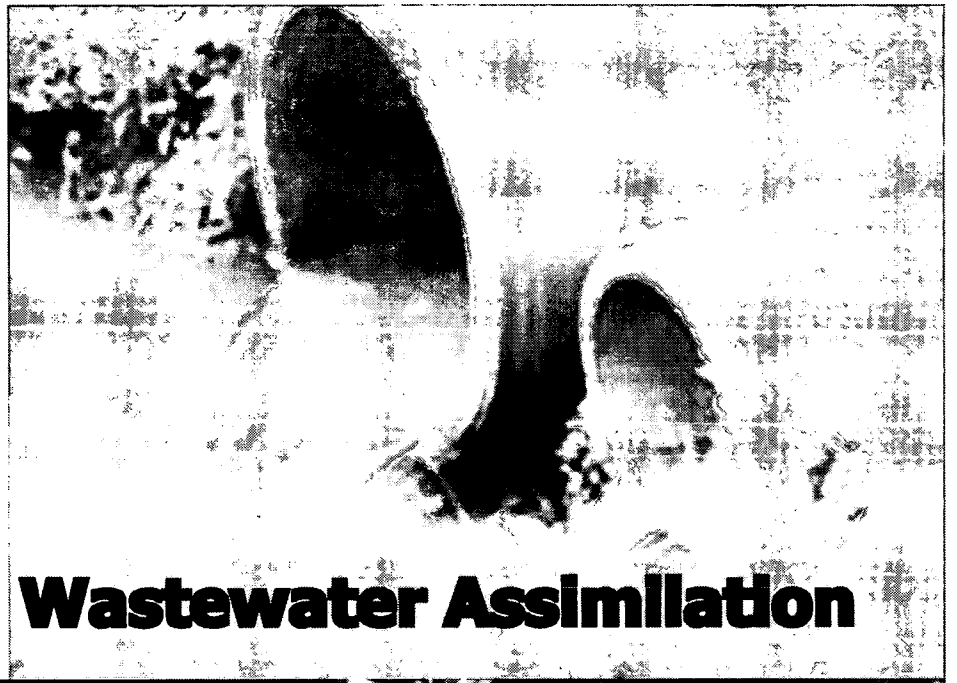
What are Ecological Flows?

- Flow needed to remain in the water body to maintain instream uses.
- Site Specific – habitat type, species of interest, drainage area
- Varies with Time – monthly, seasonal , or yearly variation

Instream Flows Provide for a Diversity of Uses



Aquatic Life/ Tourism



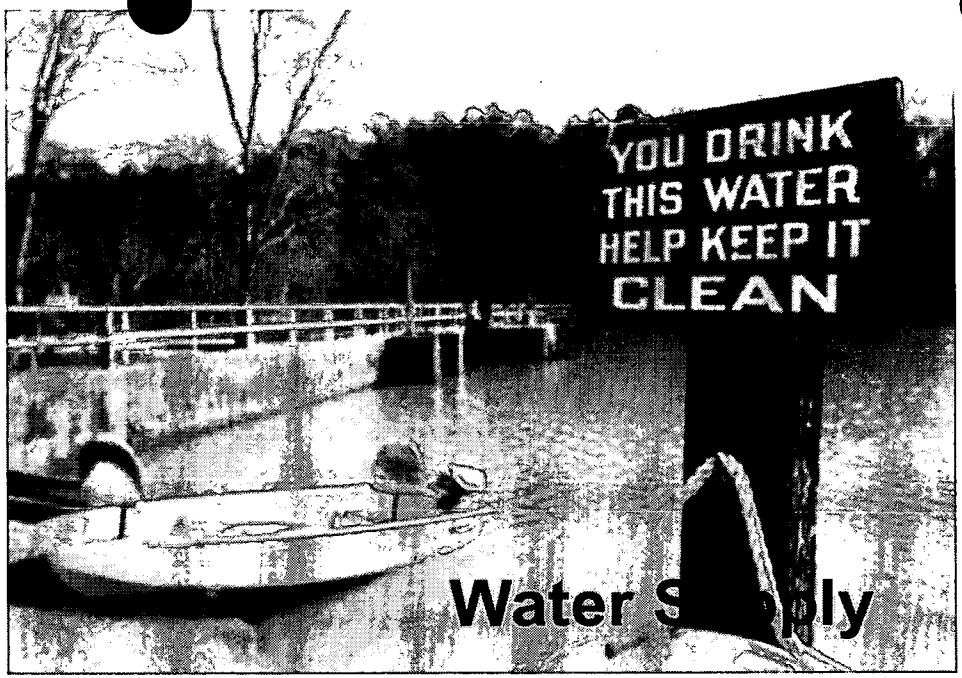
Wastewater Assimilation



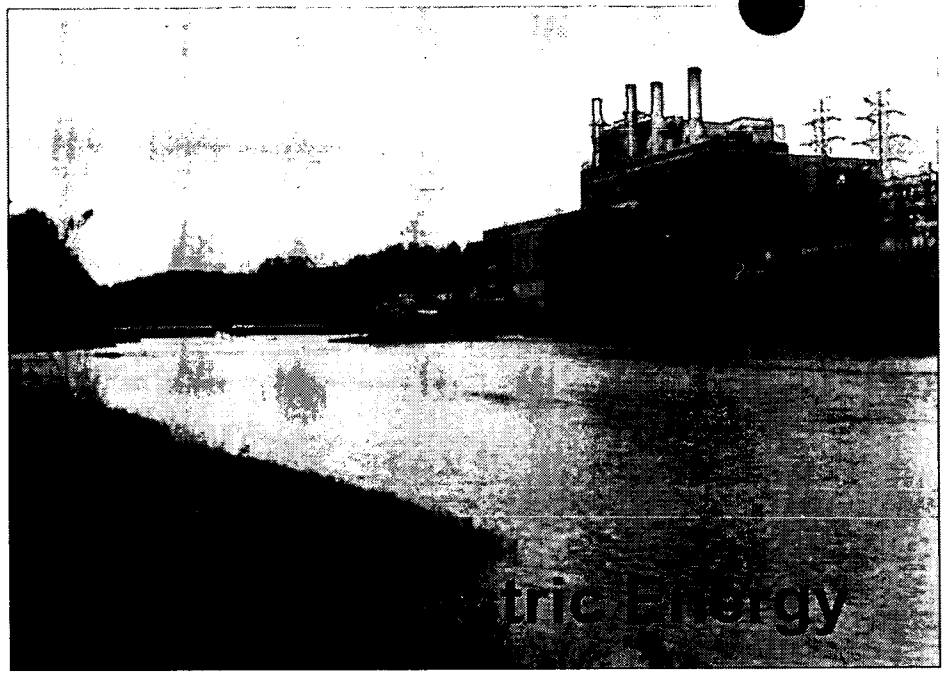
Wetlands

Estuaries/ Salinity



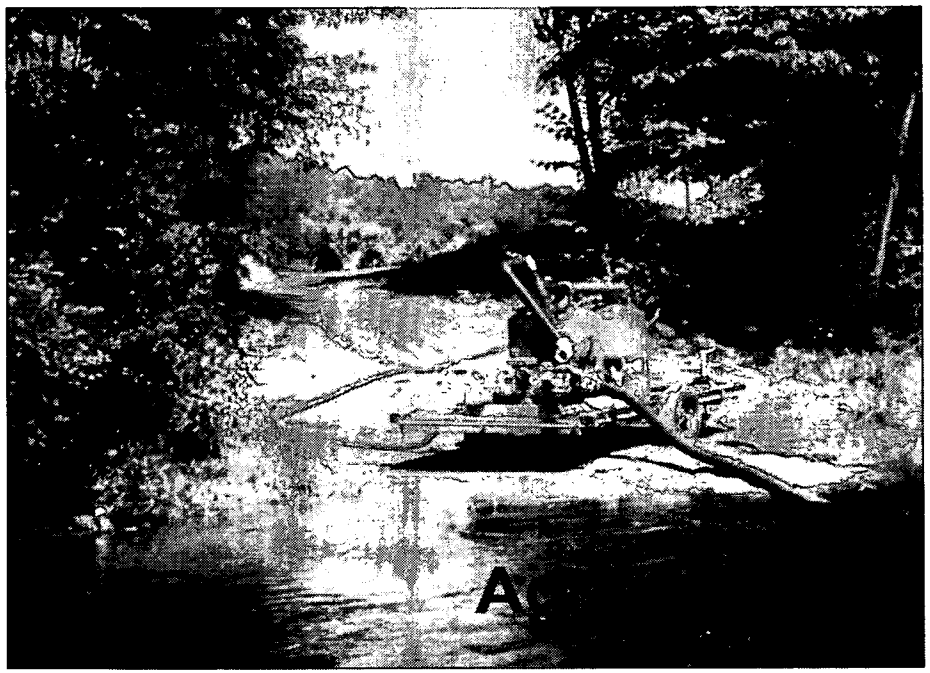


Water S ply



tric Energy

Offstream Uses are Critical for Society



A



Hydropower

Ecological Flow Regime

- **Retains natural stream flow variability:**
  - **magnitude**
  - **timing**
  - **frequency**
  - **duration**
  - **rate of change**
- **Variability differs depending upon location & type of water body**
  - **This makes statewide determination of ecological flows very challenging.**

Ecological Flows vs. Minimum Flows

- **Minimum flows – a minimal threshold to maintain aquatic life for short periods of time**
- **The lower the minimum flow – the more it is suited only to allow survival for brief periods**
- **Ecosystems suffer when the minimum flow becomes THE flow for extended periods.**



What is NC Doing?

- SL 2010-143 mandated that DENR:
  - Identify the flow necessary to maintain ecological integrity (ecological flow).
  - Create a Science Advisory Board to assist in characterizing and determining ecological flows.
  - Incorporate ecological flows into hydrologic river basin models.
  - Determine if ecological flows will be adversely affected by existing or future water withdrawals.

Ecological Flows Are A Planning Tool

- Not policy
- DWR task is to identify through hydrologic modeling where eco flows could be affected
- Policy will determine response to these effects

Other States' Programs

- Minimum Flow Threshold: 7Q10
  - Alabama / Louisiana / Mississippi
- Minimum Flow Threshold: % of Annual Flow
  - Arkansas / Georgia

- Flow Regime w/ Allowable % Reduction
  - Some Florida Water Management Districts

Ecological Flows in SC

- Component of SC water withdrawal permitting program
- Based on "mean annual daily flow (MADF)"
- SC law establishes "minimum instream flows"
  - Jan–April: Minimum instream flow = 40% of MADF
  - May/June/Dec: Minimum flow = 30% of MADF
  - July-Nov: Minimum instream flow = 20% of MADF

Ecological Flows in VA

- Comprehensive, scientific approach similar to NC
- Exploring relationship between flow metrics and biometrics of fish and benthic species
- 23,000 statistical relationship
- May structure permit conditions to limit impacts to instream uses

Existing Water Withdrawals with the Greatest Potential to be Impacted by the Implementation of Ecological Flow Policy

Categories of Existing Withdrawals

- Utilities
  - Hydropower Generation
  - Thermal Power Generation
- Public Water Supply
- Industry
- Agriculture
- Mining

Assumptions

- Policy will be developed to maintain eco flows to the greatest extent possible.
- Withdrawals associated with projects with an established flow standard will not be affected:
  - FERC Licenses
  - Flow requirements for dams and reservoirs
  - Projects associated with an instream flow study

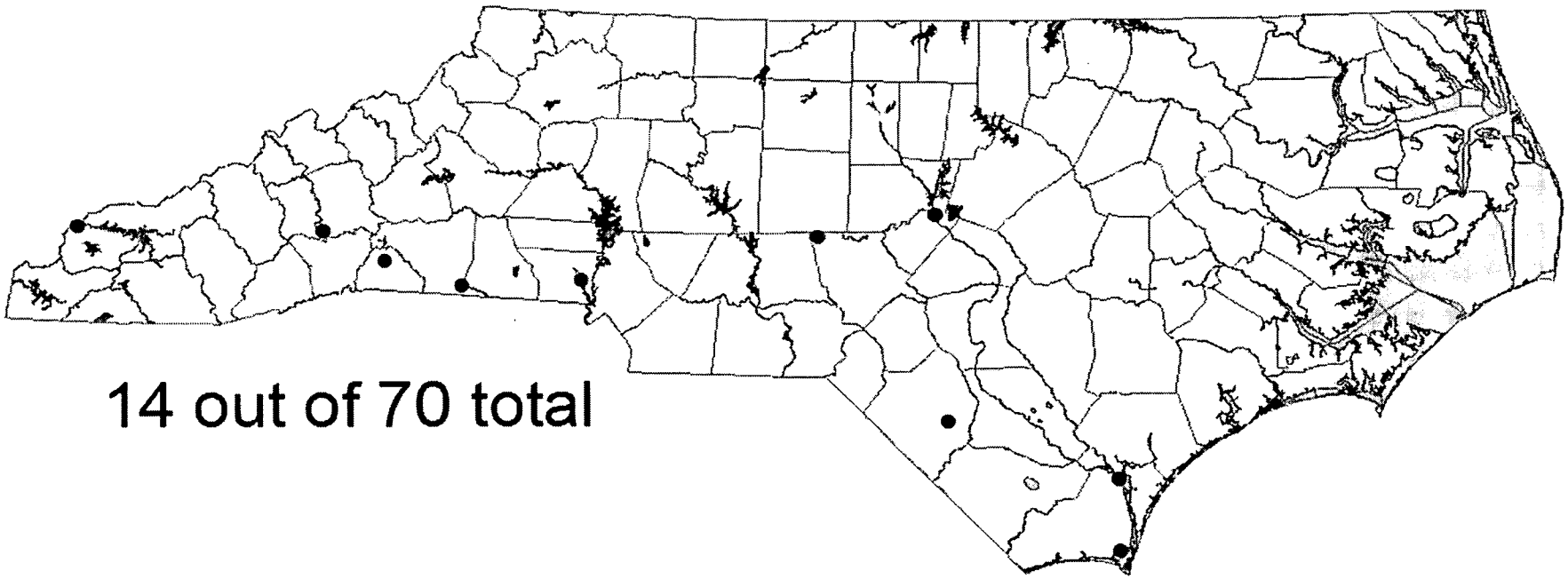
Assumptions

- Withdrawals from isolated, un-connected, ponds and lakes will not be affected.
- Groundwater withdrawals will not be affected.

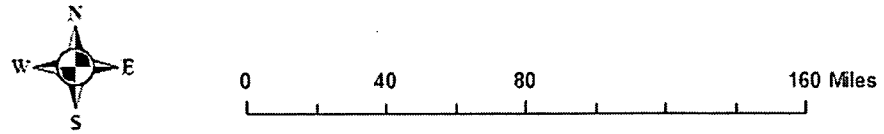
Assumptions

- Large "run of the river" withdrawals have the potential to be most significantly affected:
  - Dependent upon size and location of withdrawal
- Run of river withdrawals also the most susceptible to drought.

Run-of-River Water Withdrawal Locations
Energy



14 out of 70 total



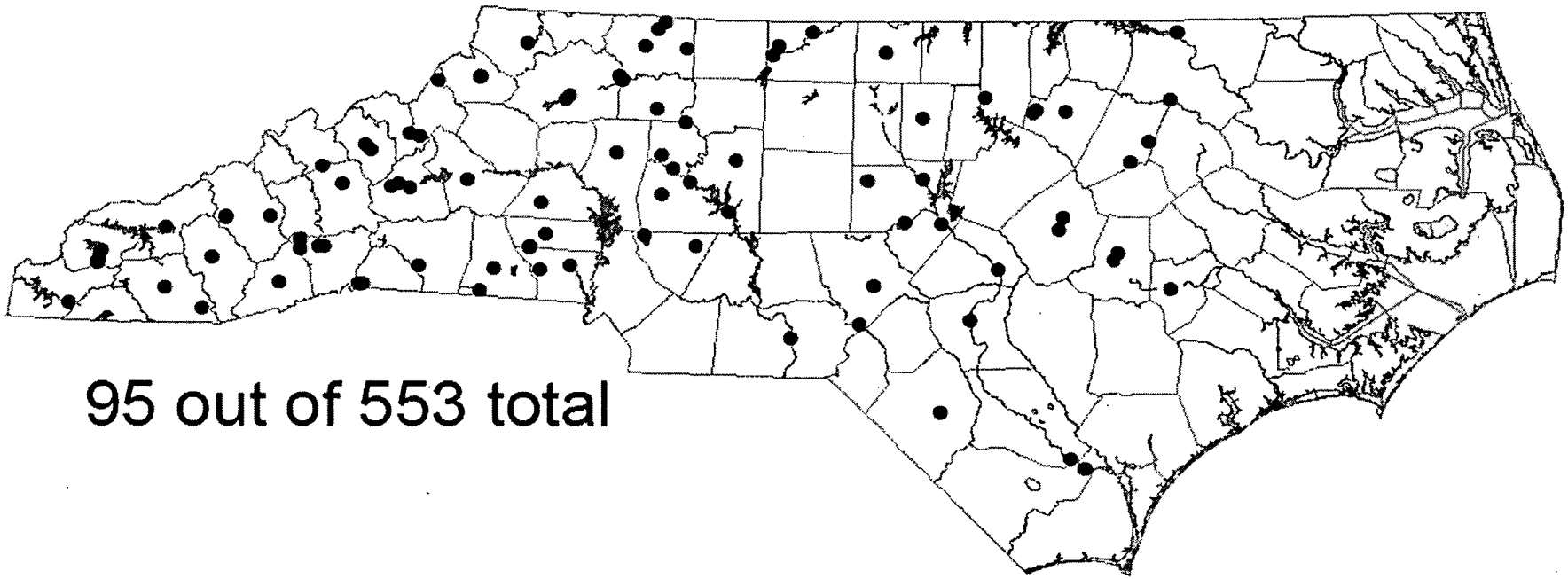
Energy Facility Notes

- 14 facilities are primarily steam generation plants
- Very little consumptive use
- Up to 98.5% of withdrawn water returned to water body

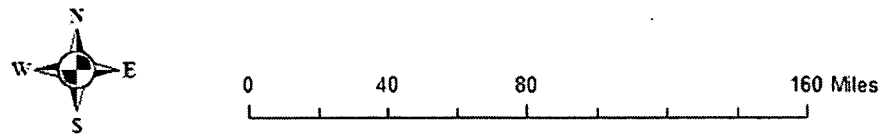
Run-of-River Energy Facilities

owner	name	county
Progress Energy Carolinas, Inc.	Brunswick Steam Electric Plant	Brunswick
Progress Energy Carolinas, Inc.	Asheville Steam Electric Plant	Buncombe
Progress Energy Carolinas, Inc.	Cape Fear Steam Electric Plant	Chatham
Progress Energy Carolinas, Inc.	Cape Fear Steam Electric Plant	Chatham
Progress Energy Carolinas, Inc.	Cape Fear Steam Electric Plant	Chatham
Progress Energy Carolinas, Inc.	Cape Fear Steam Electric Plant	Chatham
Progress Energy Carolinas, Inc.	Sutton Steam Electric Plant	New Hanover
Progress Energy Carolinas, Inc.	Sutton Steam Electric Plant	New Hanover
Progress Energy Carolinas, Inc.	Weatherspoon Stream Electric Power Plant	Robeson
Duke Power a Duke Energy Company	Cliffside Steam Station	Cleveland
Duke Power a Duke Energy Company	Dan River Steam Station	Rockingham
Stowe-Pharr Mills, Inc.	Phar Yarns Hydroelectric Plant	Gaston
Alcoa Power Generating Inc. - Tapoco Div	Cheoah Powerhouse	Graham
Northbrook Carolina Hydro Llc	Turner Shoals Hydroelectric Plant	Polk

Run-of-River Water Withdrawal Locations
Public Water Supply



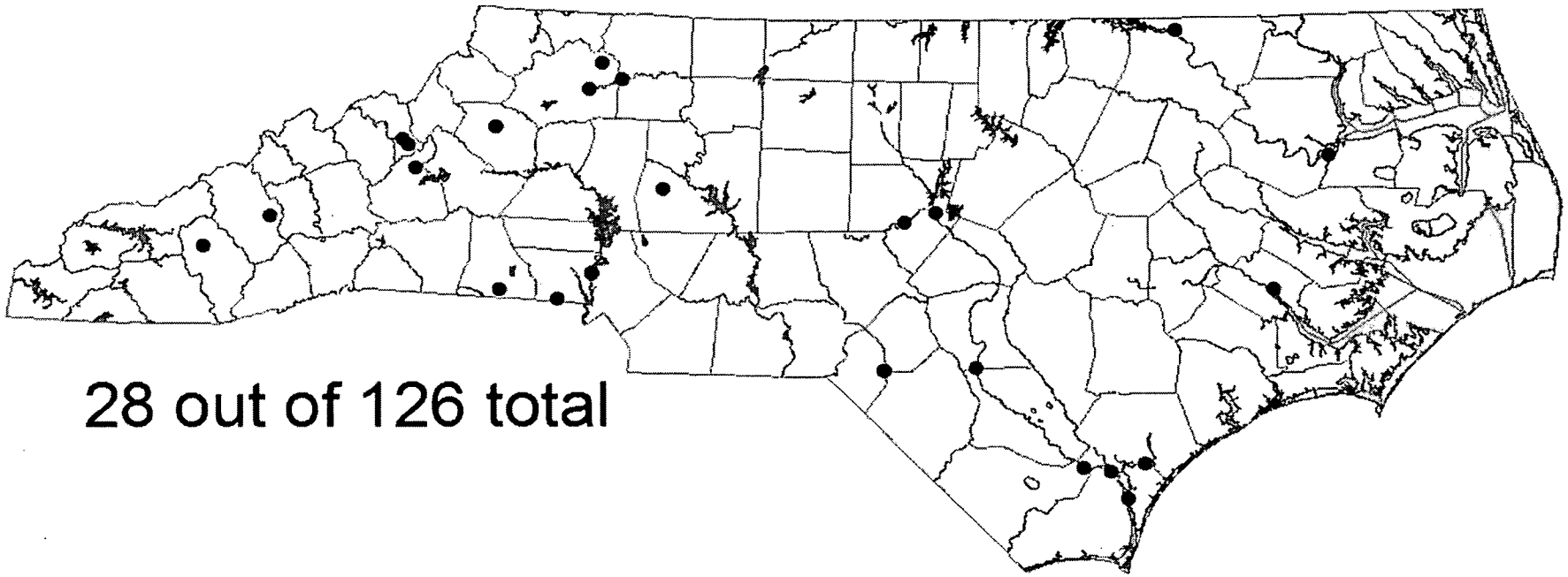
95 out of 553 total



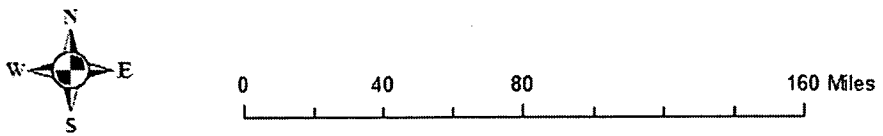
Run-of-River PWS Facilities

SYSTEM NAME	COUNTY	SYSTEM NAME	COUNTY	SYSTEM NAME	COUNTY	SYSTEM NAME	COUNTY
JEFFERSON, TOWN OF	Ashe	LOUISBURG, TOWN OF	Franklin	SMITHFIELD, TOWN OF	Johnston	KANNAPOLIS, CITY OF	Rowan
BEECH MOUNTAIN, TOWN OF	Avery	BESSEMER CITY, TOWN OF	Franklin	PILGRIM'S PRIDE WATER SYSTEM	Lee	SALISBURY-ROWAN	Rowan
SPRUCE PINE, TOWN OF	Avery	CHERRYVILLE, CITY OF	Gaston	SANFORD, CITY OF	Lee	BROAD RIVER WATER AUTHORITY	Rutherford
BRUNSWICK COUNTY WATER SYSTEM	Brunswick	CHERRYVILLE, CITY OF	Gaston	LINCOLNTON, CITY OF	Lincoln	DOBSON, TOWN OF	Surry
ASHEVILLE CITY OF	Buncombe	DALLAS, TOWN OF	Gaston	FRANKLIN, TOWN OF	Macon	ELKIN, TOWN OF	Surry
WEAVERVILLE, TOWN OF	Buncombe	ROBBINSVILLE, TOWN OF	Gaston	HIGHLANDS, TOWN OF	Macon	ELKIN, TOWN OF	Surry
WOODFIN SANITARY WATER AND SEWER	Buncombe	ROBBINSVILLE, TOWN OF	Graham	MARION, CITY OF	McDowell	MOUNT AIRY, CITY OF	Surry
MORGANTON CITY OF	Burke	ROBBINSVILLE, TOWN OF	Graham	MARION, CITY OF	McDowell	MOUNT AIRY, CITY OF	Surry
MOUNT PLEASANT, TOWN OF (WSACC)	Cabarrus	ROBBINSVILLE, TOWN OF	Graham	MARION, CITY OF	McDowell	PILOT MOUNTAIN, TOWN OF	Surry
NEWTON, CITY OF	Catawba	SOUTH GRANVILLE WTR&SEWER AUTHORITY	Graham	SPRUCE PINE, TOWN OF	Mitchell	BRYSON CITY, TOWN OF	Swain
PITTSBORO, TOWN OF	Chatham	ENFIELD WATER SYSTEM	Granville	CARTHAGE, TOWN OF	Moore	BREVARD, CITY OF	Transylvania
SILER CITY, CITY OF	Chatham	ROANOKE RAPIDS SANITARY DIST	Halifax	SOUTHERN PINES, TOWN OF	Moore	APPALACHIAN STATE UNIV WTP	Watauga
MURPHY, TOWN OF	Cherokee	WELDON WATER SYSTEM	Halifax	ROCKY MOUNT, CITY OF	Nash	APPALACHIAN STATE UNIV WTP	Watauga
SHELBY, CITY OF	Cleveland	DUNN, CITY OF	Halifax	HILLSBOROUGH, TOWN OF	Orange	GOLDSBORO, CITY OF	Wayne
SHELBY, CITY OF	Cleveland	CANTON, TOWN OF	Harnett	TRYON, TOWN OF	Polk	GOLDSBORO, CITY OF	Wayne
INTERNATIONAL PAPER COMPANY	Columbus	MAGGIE VALLEY SANITARY DIST	Haywood	TRYON, TOWN OF	Polk	NEUSE REGIONAL WTR & SWR AUTH	Wayne
FAYETTEVILLE PUBLIC WORKS COMM	Cumberland	MAGGIE VALLEY SANITARY DIST	Haywood	TRYON, TOWN OF	Polk	NORTH WILKESBORO, TOWN OF	Wilkes
DENTON, TOWN OF	Davidson	HENDERSONVILLE, CITY OF	Haywood	RICHMOND COUNTY WATER SYSTEM	Richmond	WILKESBORO, TOWN OF	Wilkes
LEXINGTON, TOWN OF	Davidson	HENDERSONVILLE, CITY OF	Henderson	LUMBERTON, CITY OF	Robeson	WILSON, CITY OF	Wilson
DAVIE COUNTY WATER SYSTEM	Davie	HENDERSONVILLE, CITY OF	Henderson	EDEN, TOWN OF	Rockingham	YADKINVILLE, TOWN OF	Yadkin
DAVIE COUNTY WATER SYSTEM	Davie	STATESVILLE, CITY OF	Henderson	MADISON, TOWN OF	Rockingham	BURNSVILLE, TOWN OF	Yancey
MOCKSVILLE, TOWN OF	Davie	TUCKASEIGEE WATER & SEWER AUTH	Iredell	MAYODAN, TOWN OF	Rockingham	BURNSVILLE, TOWN OF	Yancey
FRANKLINTON, TOWN OF	Franklin	WESTERN CAROLINA UNIV WTP	Jackson	KANNAPOLIS, CITY OF	Rowan	YANCEYVILLE, TOWN OF	Yancey
FRANKLINTON, TOWN OF	Franklin	JOHNSTON CO WATER SYSTEM	Johnston				

Run-of-River Water Withdrawal Locations
Industrial



28 out of 126 total



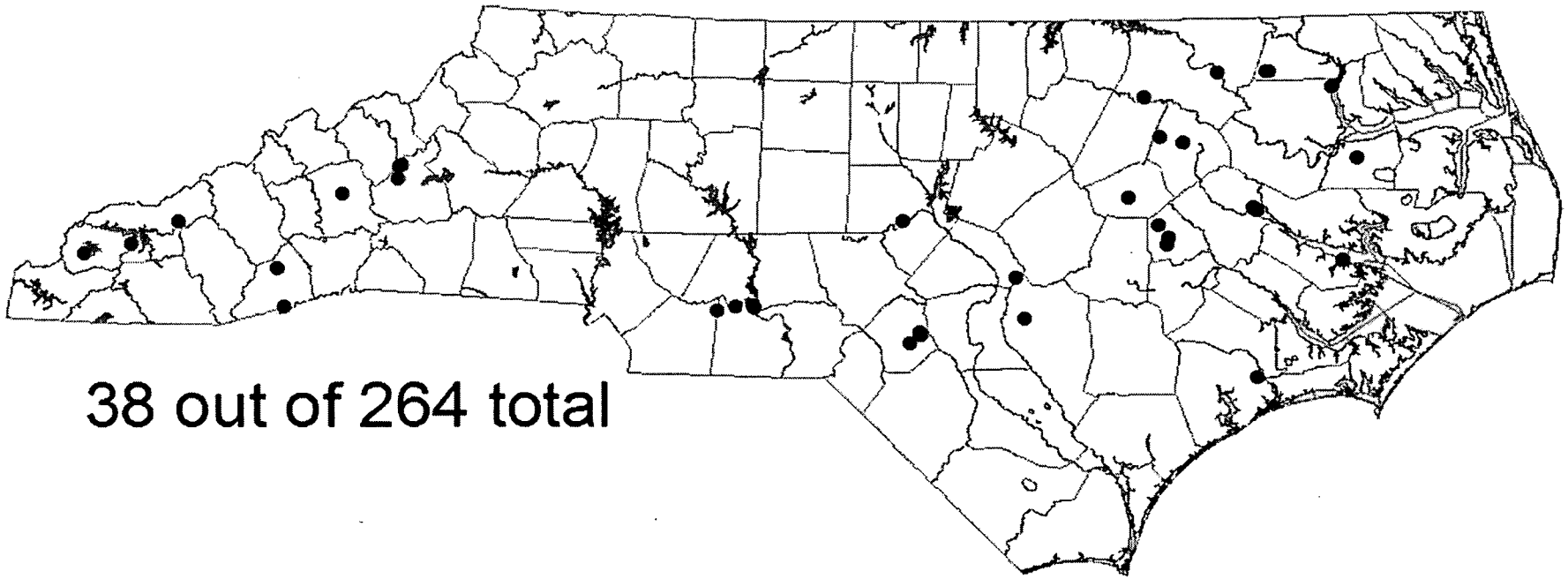
Notes on Industrial Facilities

- Most industries purchase water from community water systems.

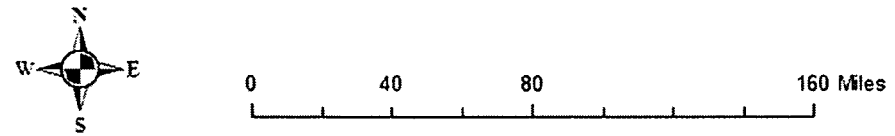
Run-of-River Industrial Facilities

owner	name	county
Louisiana Pacific Corporation	Louisiana Pacific Corporation	Wilkes
American & Efird, Inc.	Plant 15	Gaston
Kapstone Kraft Paper Corp.	Roanoke Rapids Mill	Halifax
Coats American	Sevier Finishing Plant	McDowell
Dupont	Dupont Company - Fayetteville	Bladen
International Paper	Riegelwood Mill	Columbus
International Paper	The Feldspar Corporation	Mitchell
International Paper	K-T Feldspar	Mitchell
Westpoint Stevens	West Point Home Filter/Waste Treatment	Scotland
Westpoint Stevens	West Point Home Filter/Waste Treatment	Scotland
Westpoint Stevens	West Point Home Filter/Waste Treatment	Scotland
Elementis Chromium L.P.	Elementis Chromium Castle Hayne Plant	New Hanover
Pilgrim's Pride Water System	Gold Kist	Lee
Blue Ridge Paper Products, Inc.	Canton Mill	Haywood
Clariant Corporation	Mt. Holly Plant	Mecklenburg
CNA Holdings, Inc.	CNA Holdings, Inc.-TICONA	Cleveland
Performance Fibers Inc.	Performance Fibers - Salisbury Facility	Rowan
Uniboard USA LLC	Moncure Division	Chatham
Dak Monomers, LLC	DAK Americas - Cape Fear Site	Brunswick
Jackson Paper Manufacturing Company	Jackson Paper Manufacturing Company	Jackson
True Textiles, Inc.	True Elkin, Inc.	Surry
True Textiles, Inc.	True Elkin, Inc.	Surry
Valley Proteins, Inc.	Carolina By- Products, Gastonia Division	Gaston
NPS Corporation	Blue Ridge Tissue Corporation	Caldwell
NPS Corporation	Blue Ridge Tissue Corporation	Caldwell
Gavilon Fertilizer	Gavilon Fertilizer - Wilmington	New Hanover
Weyerhaeuser	Weyerhaeuser Co.	Washington
Domtar Paper Company LLC	Weyerhaeuser Co.	Washington

Run-of-River Water Withdrawal Locations
Agriculture



38 out of 264 total



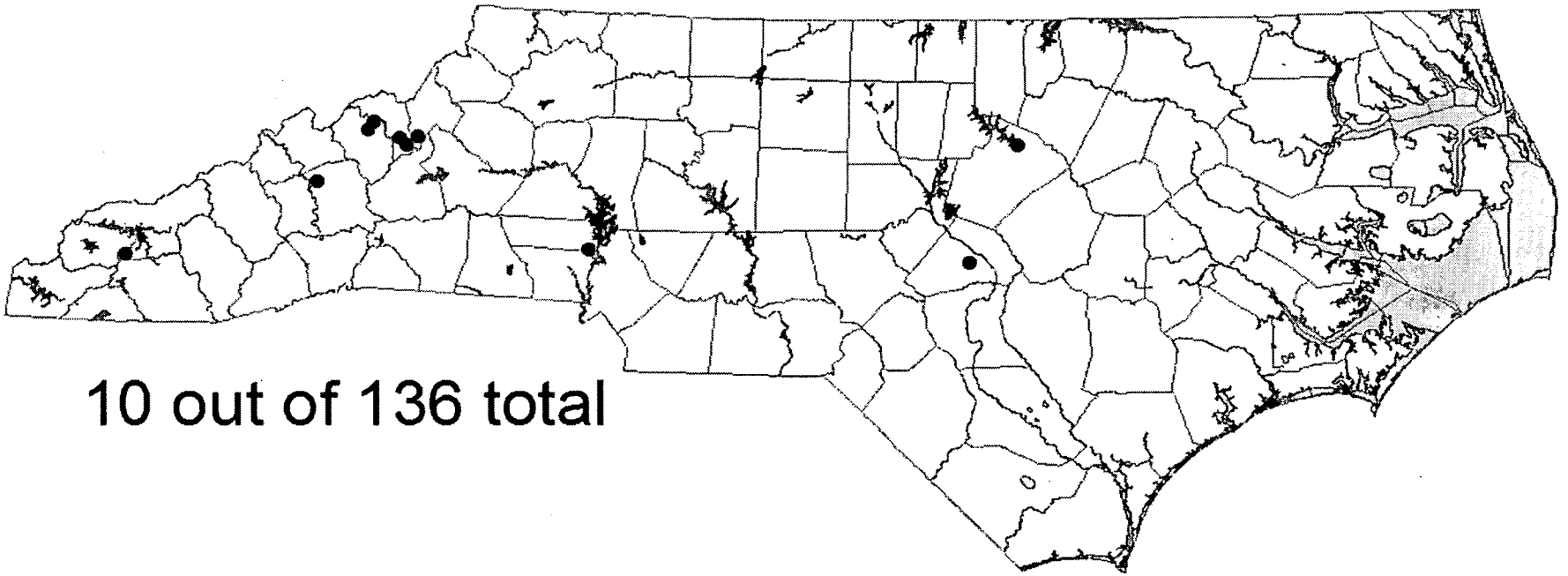
Agriculture Facilities based on Ag Survey

- Data based upon most recent Agriculture Survey
- 1,308 unique operations withdrawing > 10,000 gpd
- 504 withdraw ground water
- 537 withdraw water from lakes and ponds
- 267 withdraw water from rivers & streams
  - 88 are flow through
- 179 operations out of 1,308 remaining
  - These have the greatest potential to be affected.

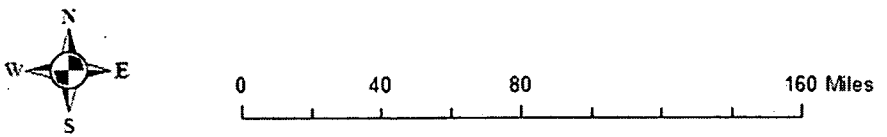
Notes on Agriculture

- Often relatively small withdrawals
- Withdrawals are often seasonal, not year-round
- Aquaculture operations are often "pass through"
  - Returns withdrawn water to water body
- Withdrawals are often in rural locations
- Withdrawals most needed during periods of below normal precipitation

Run-of-River Water Withdrawal Locations
Mining



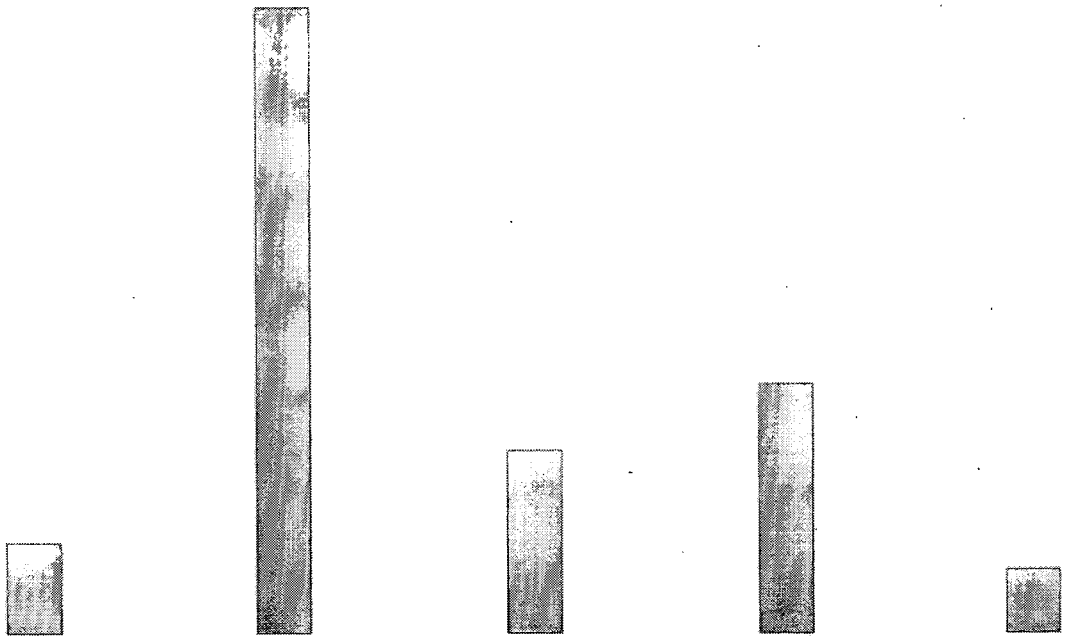
10 out of 136 total



Notes on Mining

- Many mining operations eventually return withdrawn water to the water body.

Run of River Systems



Potential Effects on Future Water Withdrawals

- Difficult to predict
- Dependent upon location and size of withdrawal
  - Possible minimal effects in less populated river basins
- Planning tool for small/medium withdrawals
  - SEPA/NEPA analysis
- Major withdrawals may still use site-specific analysis

Positive Effects from the Maintenance of Ecological Flows

Positive Impacts of Eco Flows

- The maintenance of ecological flows will have significant positive impacts on:
  - The protection of NC's natural heritage
  - Aquatic ecology
  - Recreational uses of NC's water bodies
  - Recreational fishing
  - Tourism
  - Threatened and endangered aquatic species
  - Wastewater assimilation

Positive Impacts of Eco Flows

- The maintenance of ecological flows will have significant positive impacts on:
  - Aquaculture
  - Diadromous fish species
  - Fish hatcheries and breeding areas
  - Commercial fishing
  - Wetlands
  - Water Quality

Water Security

Robust, resilient water supplies adequate to support future population and economic growth

+

Instream flows capable of supporting NC's diverse natural heritage

Building Resilient Water Supplies

- Maximize use of existing water supplies
- Identify vulnerable water systems
- Reduce system vulnerability

Building Resilient Water Supplies

- Maximize existing water sources
  - Statewide water efficiency policy (SL 2011-374)
    - Water Efficiency BMP Manual
  - Water audits for underperforming systems
  - Use of reclaimed water
  - Interconnections
    - Over 300 interconnections in NC

Systems w/ History of > 30% Unaccounted Water

Alamance	Connestee Falls*	LaGrange	Roseboro
Bakersville	Dan River Water*	Lewiston-Wood.	Smithfield
Banner Elk	Fairfield Sapp.*	Marion	Sugar Mountain*
Carolina Beach	Highlands	Murphy	Waynesville
Chimney Rock	Johnston County	Rich Square	

* Denotes private water system

Identification of Vulnerable Systems

- Systems revealed by hydrologic modeling to have inadequate future water supplies
- Systems in need of IBT to meet future water needs
- Run of the river (ROR) water systems
  - ROR systems w/ no storage
  - ROR systems w/ no interconnections
  - ROR systems w/ limited access to water

Vulnerable Water Systems

- Systems denoted by existing hydrologic modeling to have inadequate future water supplies to date:
  - Raleigh
  - South Granville Water & Sewer Authority

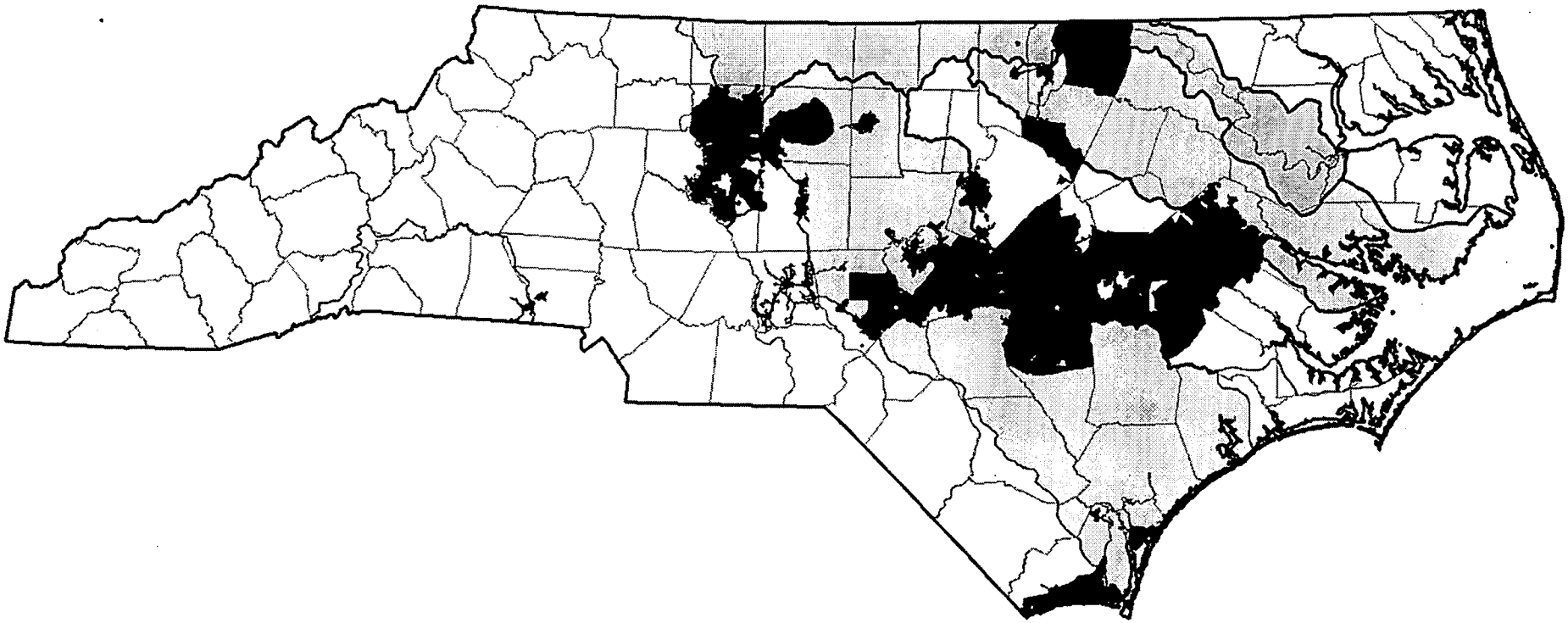
Systems in Cape Fear, Neuse, Tar-Pam, Roanoke, and Broad River Basins that need IBTs to meet Projected 2060 Water Demands*

System	IBT Need	System	IBT Need
Greensboro	4.07 mgd	Davidson	1.24 mgd
Brunswick Co**	4.65 mgd	Greenville Utilities	13.85 mgd
Raleigh (Zebulon)	3.44 mgd	Sanford	?

* Projected need greater than 1 million gallon per day (mgd)

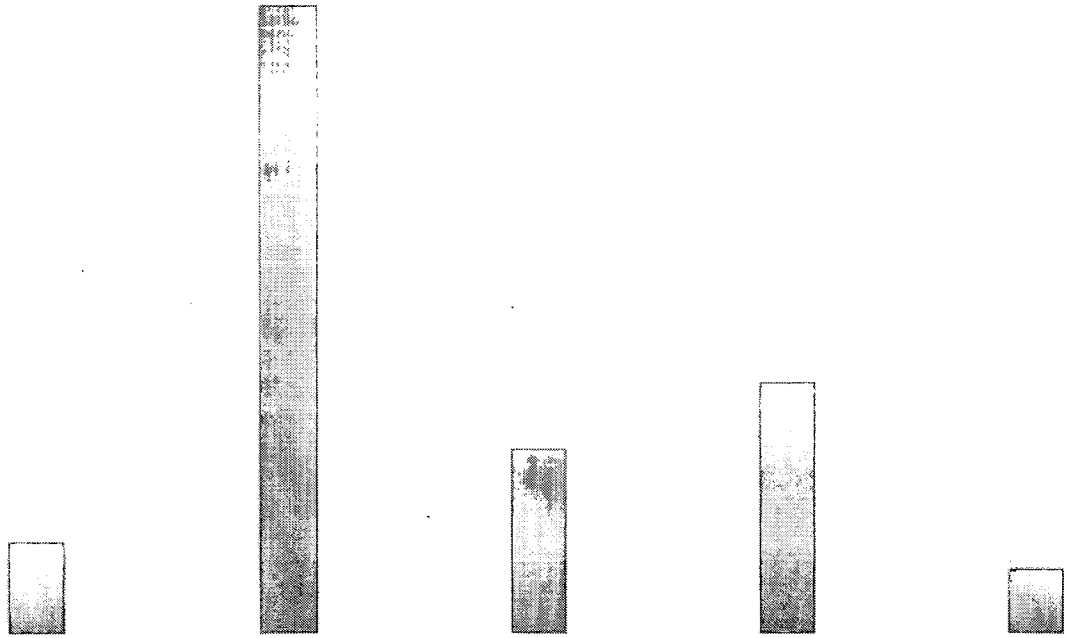
** Systems already working on IBT Certificate

Service Areas* in Cape Fear, Neuse, Tar-Pam, Roanoke, and Broad River Basins that need IBTs to meet Projected 2060 Water Demands



* Areas denoted in red are those service areas in need of an IBT

Run of River Systems



Options for Vulnerable Systems

- Aquifer Storage and Recovery (ASR)*
- Desalinization*
- Quarries with high flow skimming*
- Reallocation of existing reservoir storage*
- Use of abandoned reservoirs*
- New surface water intake
- Non-mainstem (offline) reservoir*
- Mainstem reservoir

* Limited impacts on ecological flows

Options for Vulnerable Systems

- Ag Water Resources Assistance Program (Ag WRAP)
- Use of abandoned reservoir
  - Moore County
- Quarries with high flow skimming
  - Durham / Johnston County
- Aquifer storage and recovery
  - Greenville / Cape Fear Public Utilities
- Non-mainstem (offline) reservoir
  - Southern Pines
- Reallocation of existing reservoir storage
  - Kerr Lake / Raleigh – Falls Lake / Jordan Lake

Reallocation Process for Corps Reservoirs

- Corps leadership has adopted streamlined study process
- "3 + 3 + 3" process
  - Completed in less than 3 years
  - For less than $3,000,000
- Expedite reallocation in Corps reservoirs for water supply
  - Falls Lake
  - Kerr Lake
  - Kerr Scott Reservoir
- Utilization of DWR hydrologic modeling results & data

Maintenance of Instream Flows

- Development of Ecological Flow Methodology
  - Science Advisory Board
- Incorporation of Ecological Flows in Models
- Development of Ecological Flow Policy

Contact Information

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DWR
Division of Water Resources

Uranium Mining in the Roanoke River Basin

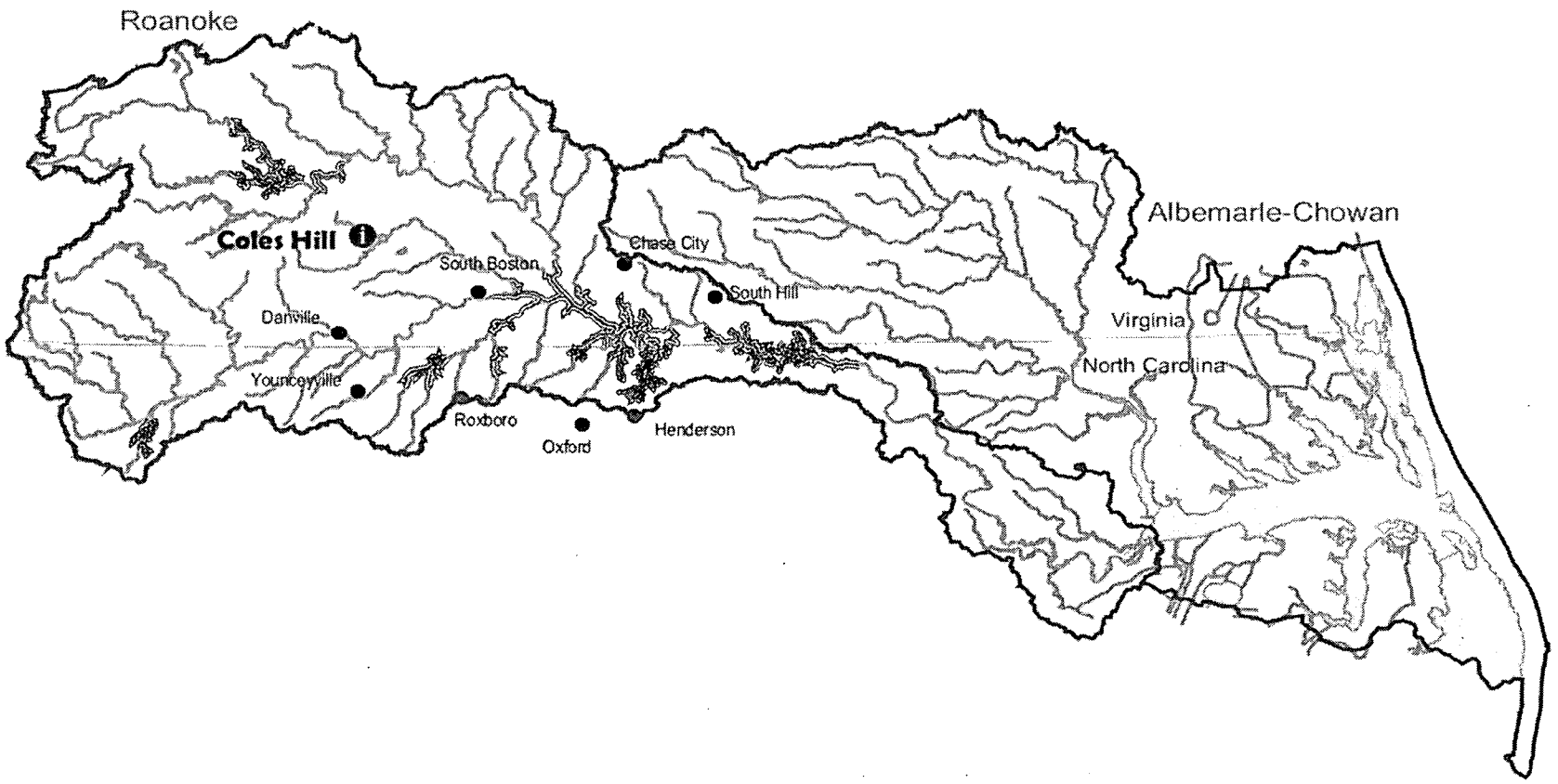
Environmental Review Commission

November 15, 2012

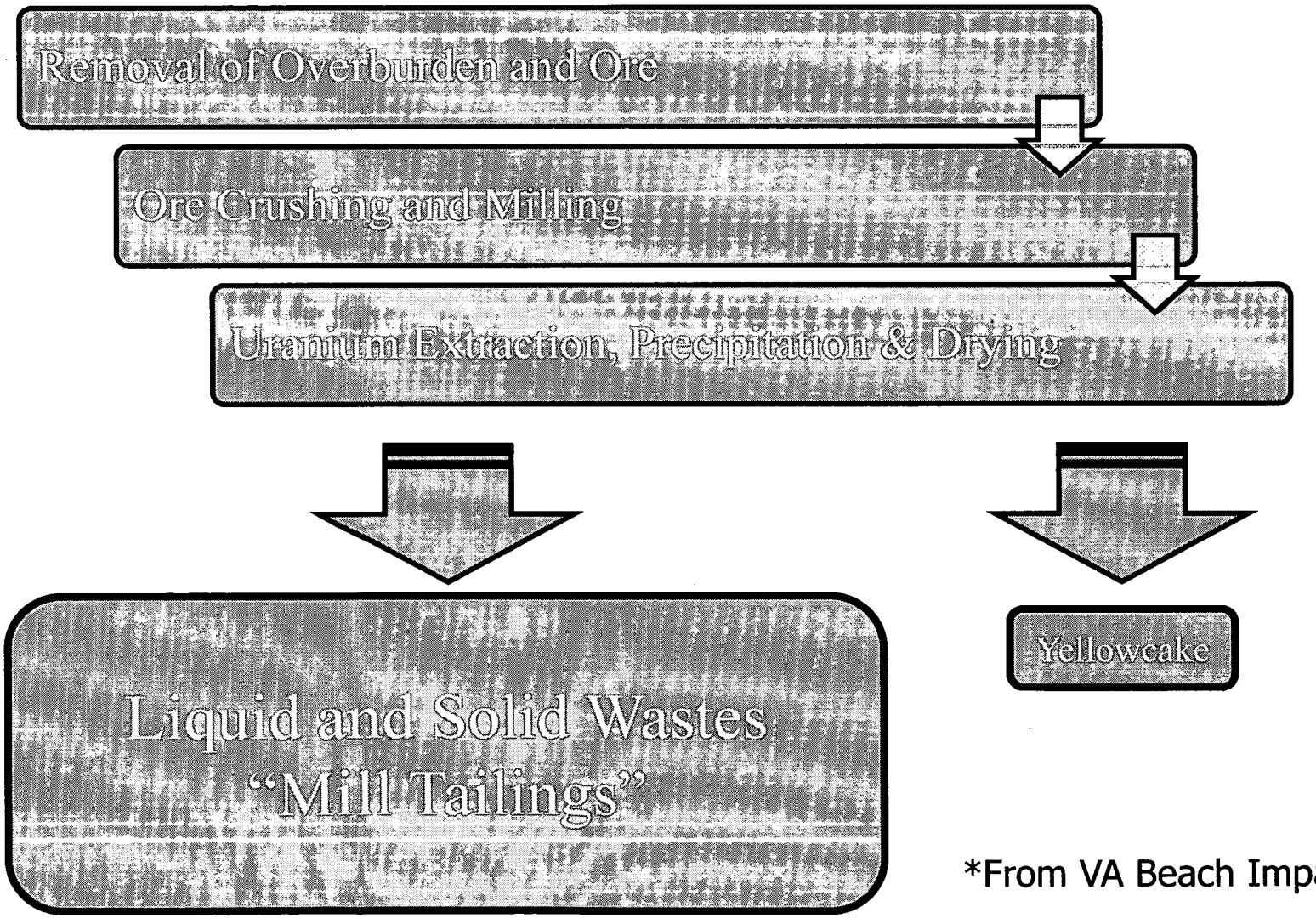
Overview

- Uranium mining in Virginia
- Potential hazards/impacts to NC
- Status of mining ban in Virginia
- NC actions to date

Roanoke River Basin (NC & VA)



Uranium Mining & Milling*



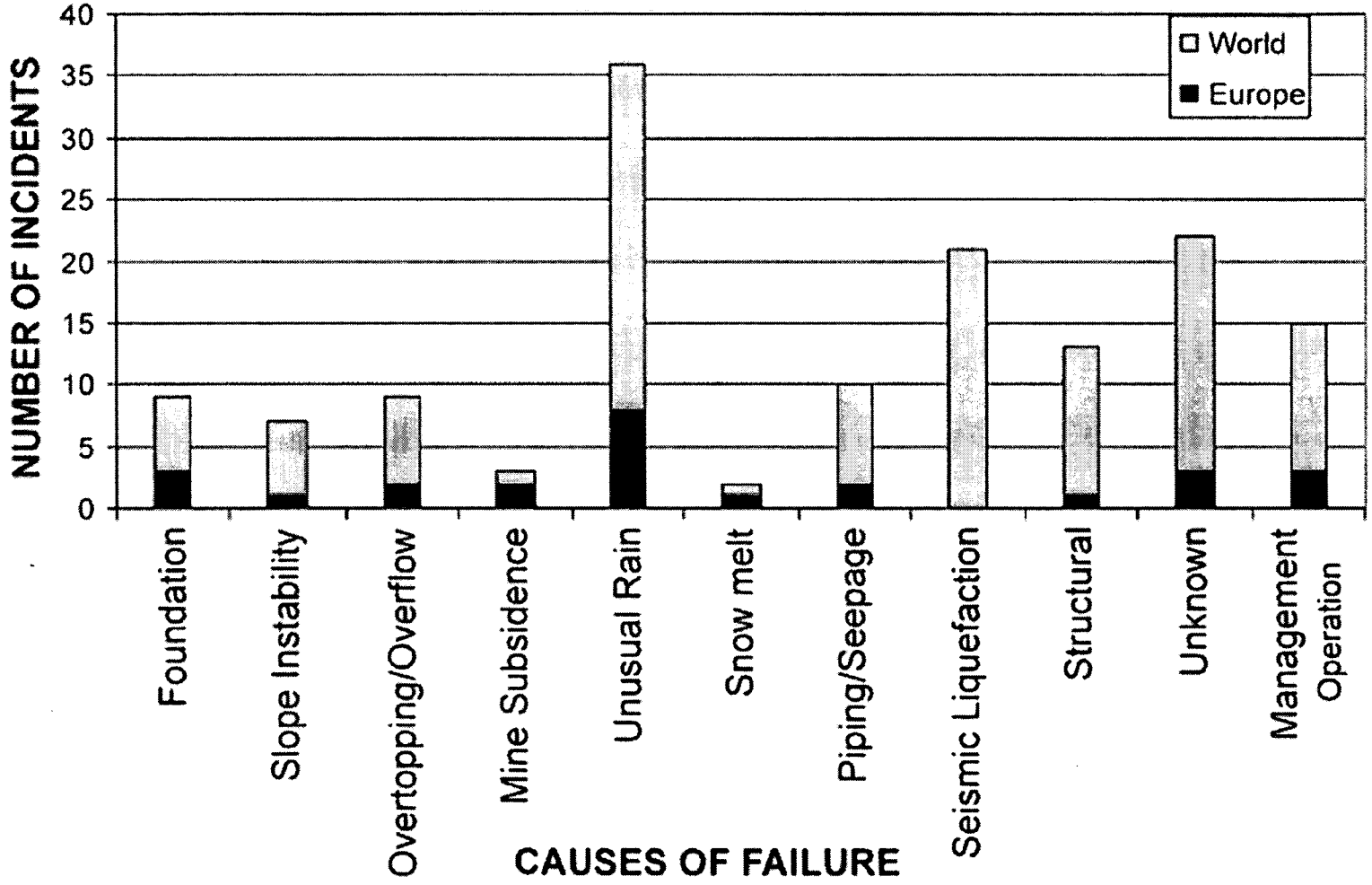
*From VA Beach Impact Study

Uranium Tailings*

- Proposed mining may produce approx. 11 million cubic yards of radioactive tailings in above ground storage
- Stored in impoundments; up to 40 acres maximum
- Tailings remain radioactive for thousands of years
- Ur. mining/storage never done east of Miss. River in US
  - Only done in arid regions in US
- Containment failure would negatively impact NC

*From VA Beach Impact Study

Causes of Tailing Cell Failures*



*From VA Beach Impact Study

Potential Impacts to NC from Tailings Containment Failure*

- Radioactive tailings washed downstream
- Radiation levels more than 10-20 times the Safe Drinking Water Act levels in Kerr Lake
- Possibly 2 years to flush contamination
- Particulate contaminants trapped in sediment and re-suspended during periods of high flow

*From VA Beach Impact Study

Potential Impacts to NC

- Public water supply for 118,760 NC citizens
- 2 Industrial facilities
- Up to 64 agricultural operations in Bertie, Granville, Halifax, Vance, & Warren County
- Recreation & tourism at Kerr Lake & Lake Gaston
  - Expenditures > $15,000,000 per year
- Ecological Impacts
  - World class striped bass fishery
  - Sturgeon recovery

Status in Virginia

- Uranium mining ban still in place today
- Study ordered by VA Governor being finalized
- VA General Assembly may consider lifting of ban in 2013 Legislative Session

What has NC done so far?

- Handled through Roanoke Bi-State Commission
- NC Legislative representatives
  - Sen. D. Berger, Rep. Warren, Rep. Crawford
- Full Commission (NC & VA reps) adopted resolution opposed to mining in August 2012
  - Resolution sent to NC & VA Governors
  - Resolution sent to NC & VA Legislatures

NC Govt. Entities Opposed to Mining

Creedmoor	**Roanoke Mayors Ass.**	**Upper Coastal Plain COG**
Oxford	Franklinton	Warren County
Halifax County	Macon	
Kerr-Tar COG	Williamston	

Contact Information

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DWR
Division of Water Resources

L & S Water Power, Inc. v Piedmont Triad Regional Water Authority and the Devolution of North Carolina Water Law

By Richard Whisnant, Gladys Coates Distinguished Professor of Public Law and Government, UNC School of Government

For the N.C. General Assembly's Environmental Review Commission

November 15, 2012

The facts in brief

Piedmont Triad Regional Water Authority (PTRWA) is a public water authority formed to operate the Randleman Reservoir and new water treatment plant, to ensure a safe drinking water supply for upwards of half a million residents of Randolph County, Greensboro, High Point, Jamestown, Archdale and Randleman. In many ways PTRWA is a paradigm for intergovernmental cooperation to improve water storage in this state.

For the water allocation study done on behalf of the Environmental Review Commission from 2007-2011, the Randleman Reservoir was of great interest as the most recently constructed new major water supply reservoir in NC. It took about twenty years to get Randleman Reservoir permitted and built. Among other permit hurdles, it required a federal Clean Water Act § 404 permit from the US Army Corps of Engineers, a § 401 water quality certification from the State, and an interbasin transfer certificate from the EMC—all contested and controversial, on top of the major intergovernmental challenges of building a new water treatment plant for six different local governments. As almost any new water supply reservoir in North Carolina will, Randleman Reservoir required eminent domain proceedings to assemble the land. The State permits set a required minimum release from the dam in addition to allowing up to 30.5 mgd to be transferred out of the Deep River subbasin.

The public entities who invested $150 million or so towards the Randleman Reservoir and treatment plant probably figured that their 20 years of state and federal permitting efforts, local condemnation proceedings and political fights were more than enough conflict over this water supply project. If they thought that, they were wrong. A group of downstream hydroelectric dam owners and operators sued PTRWA in 2008, not long after the lake was filled. They claimed the Randleman Reservoir reduced the river flows available to them to generate electricity, and thus worked a "taking" of their riparian property rights.

The procedural posture of the case

In October 2009, a superior court judge found PTRWA had indeed taken defendants' riparian rights, and ordered PTRWA to pay just compensation for the taking. The trial court concluded that plaintiffs were entitled to be compensated for the loss of stream flow and that plaintiffs' riparian rights could be

valued by the loss of electricity capable of being produced as a result of reduction of stream flow. In 2011, the N.C. Court of Appeals affirmed the trial court's decision, unanimously. The N.C. Supreme Court took the case on discretionary review, and held oral argument on October 16 of this year, one month ago. No decision has yet been published by the Supreme Court.

Disclaimers

First, I am not directly involved or deeply familiar with the case or the parties. I am sure there are many nuances that only the parties and their attorneys understand. I will give you my view on the *potential* importance of the case.

Second, the Supreme Court could go in any direction, at any time, with the decision in this case. The Court could, for example, duck the main water law issues altogether. Or, on the other hand, the Court could render a brilliant written opinion that moots much of the need for further legislative action to clarify riparian rights in N.C. Neither of these extremes is likely, however. As of today, only the justices and their clerks know what their decision and reasoning are likely to be.

Potentially significant water law issues

But I think it's worth understanding the potentially significant water law issues that might be addressed in the Court's decision.

First, and foremost, the core issues that might be reached concern the nature of riparian rights and how they stack up against nonriparian uses, such as public water supply. "Riparian" means alongside surface water; a riparian owner is one who owns land that borders a stream or lake. "Riparian rights" are the rights that come with ownership of such land.

On the one hand, NC law, like that of other eastern, riparian states, clearly states that riparian rights do not include the right to a certain quantity of water. They are not even "property rights," strictly speaking, in the way we generally understand property rights. On the other hand, NC law, also like the common law of other eastern states, has said for quite a long time that the taking of water out of a stream (or the ground) and piping it for drinking and industrial purposes to users who are not riparians is not a riparian right. So when public water systems have had water use conflicts with riparian users throughout NC history, the public water systems have generally lost.

- But not necessarily; a lot turns on the Court's answer to a surprisingly tricky question: What is the nature and extent of a riparian property right?

The idea of riparian rights goes back at least to the Roman empire. The very word "riparian" comes from a Latin word, "ripa," which means the bank of a river. There are several riparian rights as developed at common law: the right to access the water; the right to wharf out to navigable water; the right to accretions or alluvium; the right to use the water. You get these rights when you own land that adjoins surface water. That much is clear. When you start trying to define the limits on the riparian right to use the water, things get legally murky. The murkiness is hinted at by another Latin word, "rivalis,": in the Roman empire, a rivalis, from which we get the English word "rival," was either someone else who shared the same mistress, or someone else who shared the same stream.

Most states that now give riparian rights a prominent role (states in the Eastern U.S.) have concluded that the only way to give more certainty in disputes between rival riparian owners and between private riparians versus public water supplies is to legislate that clarity. The common law, the law that judges have made over the centuries, is just too fragmented, uncertain, unpredictable and in some cases, like that of groundwater, based on an outmoded understanding of the science of water...not a good foundation for confidently investing large sums of capital.

In colonial and early American days, a riparian was entitled to receive "the natural flow of the river, undiminished in quality or quantity." In other words, a rival riparian had the right to use water, but not so much that it reduced the amount going downstream or increased the amount ponded back upstream. This might have made some policy sense in a world focused on the quiet enjoyment of one's property, unaffected by anything one's neighbors did, without much concern for economic growth. It works beautifully in a pastoral world that doesn't change much. The water must stay as it always has, in the same channel, in the same amounts and with the same quality.

This idea, the "natural flow doctrine," did not survive long in the new American states. How could it, since water power was literally the engine of progress in the early industrial revolution...and to have water power, you had to build a dam, which by definition alters the natural flow of the river? So an American rule was invented by the courts, the rule that riparians could make "reasonable use" of the water, even though that reasonable use changed the natural flow of the river. In America, including North Carolina, riparian rights came to mean the right to make reasonable use of the water, but explicitly did not mean the right to any particular quantity of water. Lawyers call it a "usufruct", a right to make use of something, but without definite limits attached as you'd have with a piece of real estate. This may help explain how property rights in water are different from property rights as commonly understood. It will also, I hope, help us understand the potential importance of the L&S Hydro case.

- ["Property rights" in water versus in land]

As commonly understood, "property rights" are the rights of the owner of real estate—and in particular, the rights of the owner of a fee simple absolute in real property. Property ownership is often explained as a bundle of rights: The right to make use of that property, the right to exclude others, the right to sell the property, etc. But this bundle is totally different when it comes to water. Water moves, and water can often be reused. This means that water, in free flowing streams like the Deep River, lacks the two characteristics that economists take to be the essence of private property goods: the ability to exclude others from it fairly cheaply, and "rivalrous consumption": if I use the water, then you can't use it. Riparian rights are thus more complicated than rights in land. For example, you can't sell them. Property rights in water are more like property rights in wild animals and fish than like property rights in land or personal possessions. You don't own the wildlife on your real estate. But you have the right to hunt whatever crosses your land, so long as you follow the regulations, which were put in place when it became clear that open access to wildlife would quickly mean it was all killed off. Once you capture it, then it's yours, and it becomes more like traditional property.

In the days of the natural flow doctrine, a riparian really did have something like a traditionally understood property right, because no one upstream or downstream could materially change the quantity or quality of water available for use by the riparian. But application of this rule would have stopped the early industrial revolution in its tracks; it would have been nearly impossible to build dams and thus to have mills. No mill dams, no power, no economic development. So American courts adjusted the law as best they could. In the eastern US, they focused on "reasonable use" as a way of allowing some alteration in natural flow in order to encourage economic development. They thereby made the riparian right much more uncertain, much less like other property rights. But part of that uncertainty is inherent in water, just by its nature. It moves. In the western US, in contrast, they altered the natural flow doctrine to focus instead on the priority of use—"first in time, first in right." This led to an idea of water rights called "prior appropriation" in which you could, in fact, have a right to a defined quantity of water that you could sell to someone else. Which is why, for better or worse, we can have the likes of Los Angeles in the middle of a desert.

There is more to this complicated picture. Who is entitled to be treated as a riparian, and does it matter how they use the water? And how is the law of the beneficial use of water, which is what I've been talking about, different from the law of liability for damages from flowing water—drainage problems, flooding, what we today call "stormwater"?

I am not bringing all this up to try to confuse you or to make your eyes glaze over. I am bringing all this up because these are the core conflicts that lie at the heart of the doctrine of "riparian rights," and it is entirely possible that the L&S Hydro case will attempt to firm up N.C.'s answers to one or more of these hard questions.

So back to this question of who and what uses are entitled to riparian rights. After all, the PTRWA is a riparian owner, just as the plaintiff dam owners are—both sides of this case do own land next to the Deep River. However, N.C. law (and that of other eastern states) is pretty clear on the fact that withdrawing water from a stream (or the ground) and piping it to non-riparians for their use, even for the simple domestic uses of drinking, washing and flushing toilets, is *not* a riparian right. Whereas a dam owner's use of the water in a river channel *is* a riparian right, even though the water is used to generate electricity that is then piped away from the stream and used by non-riparian owners. It's reasonably clear, in other words, that under our common law, the location where water is used does matter to the extent of one's rights and the extent to which one can legally interfere with another user's riparian rights. Now, like everything in the common law of water, cases come along that confuse this otherwise clear distinction. In NC, for example, when a railroad pumped water out of a stream into a holding tank beside the river, then used that tank to fill steam locomotives so they could run quite far away from the river, our courts held such a use *was* a riparian use, despite the complaints of downstream riparian owners. For that matter, agricultural uses do have riparian rights, even though they are largely incorporating the water into a product (plants or animals) and then shipping that product away from the river.

But leaving the nuances aside, at common law, public water systems on which millions of citizens rely for everyday water use and millions of dollars of capital investment rely on for production have *less* right

to the water than those who use it in or next to the stream. Whether this makes sense for us as a state going forward is something for you as legislators to ponder. The Water Allocation Report recommended that you explicitly say, as the Regulated Riparian Model Code says, that the location of use does *not* affect the reasonability of the use. The North Carolina Supreme Court could reach such a result, but it's unlikely. The Court will likely feel bound by the past precedents that put piped water on a lower legal priority than use in or alongside the river, no matter what an economic calculation of costs and benefits might suggest.

Another distinction that's important, but that has led to murkiness in water law, and I believe murkiness in the L&S Hydro case so far, is the difference between the law of beneficial use of water in streams and lakes versus the law of liability for damages from water flowing across the land. Water flowing across the land is what we now call "stormwater" and at common law it was often called "diffused surface water." The courts have struggled to come up with rules for liability for stormwater ever since we started building railroads and paving streets. Officially, since an NC Supreme Court case called *Pendergrast v Aiken* in 1977, our rule of liability for stormwater has also been "reasonable use." The Pendergrast Court attempted to summarize what is meant by "reasonable use" by describing some of the cases involving riparian rights in flowing water. This discussion was what lawyers call "dicta," in other words, it wasn't necessary to the resolution of the case. Nonetheless, courts today will read *Pendergrast* and later cases and attempt to make the rules for beneficial use of water in streams somehow match the rules for liability from stormwater. What "reasonable use" means for two private property owners who are fighting over drainage problems is that a court will look at each party's actions to see whether someone acted negligently or otherwise unreasonably in handling the drainage problem. However, if one of the parties is a public entity, with eminent domain powers, our courts have held that the public entity is not entitled to the defense that they did everything "reasonably." In other words, if you condemn property to build a road, you can't just dump the resulting stormwater off onto a private property owner's yard and injure that private property and then claim that was the reasonable thing to do. This concept, that entities with eminent domain power work under different water law rules than private entities, was imported into the appeals court decision in L&S Hydro. It may be solidified by the Supreme Court, in which case public water systems will have a second strike against them under NC water law: strike one, their use is made away from the river. Strike two, they have eminent domain power. Net result: water rights are much less secure for everyone served by public water systems, especially those that do not fully control their own reservoirs or are not controlled by a federal licensing arrangement.

There are several other "mega issues" in water law that are relevant to the impact of the L&S Hydro case. As I mentioned at the outset, at the time I am writing this we do not yet have an opinion from the Supreme Court, so we just don't know whether and to what extent the Court will actually take up or resolve these or any other issues. But they are without a doubt important to answering the question "how might this decision change water law and riparian rights in N.C." so I will mention them briefly.

First, there is the question of how common law riparian rights have been affected by past N.C. legislation about water. Most centrally in the L&S Hydro case, there are statutes involving the rights of parties who pay for the impoundment of water (N.C. Gen. Stat. § 143-215.44 to -215.50) and statutes

involving the rights of those who receive interbasin transfer certificates from the State (N.C. Gen. Stat § 143-215.22L et seq.), especially when the state action includes a minimum flow requirement that the Environmental Management Commission imposed on the water authority and that was supposed to protect instream uses (such as dams). The impoundment statute was drafted by my predecessor at the School of Government, Prof. Milton Heath, back in 1971. It was narrowly aimed at ensuring that Winston-Salem would receive the benefit of its investment in the Kerr Scott reservoir, even though the reservoir is some sixty miles upstream of Winston-Salem's intake on the Yadkin River, near Donnaha. I am sure Milton believed the impoundment statute would more generally protect public water systems' investments in reservoirs against various challenges from riparians. The impoundment law says in essence that a person who lawfully impounds water has a right superior to other user's interests in the excess volume of water created by the impoundment, defined in the law as that amount of water that can be withdrawn without foreseeably reducing the flow that would have been available in the absence of the impoundment. Perhaps the Supreme Court will find that this 1971 legislation protects the investment of the PTRWA against the claims of the plaintiff dam owners. However, neither the Court of Appeals nor the trial court thought so. The trial court found that the Randleman Reservoir would in fact *reduce* the natural flow in the Deep River, and the impoundment statute doesn't provide a defense against reduction of flows. And the Court of Appeals stated that while the impoundment statute might bolster the water authority's right to create the impoundment, it didn't preclude payment of damages to the riparians for any injuries caused by the impoundment. So like much else in NC water law, it's highly uncertain how this interaction of past legislation with the common law will come out in the Supreme Court opinion.

Some other issues should be noted even though the L&S litigation so far hasn't addressed them. But if the Supreme Court affirms the Court of Appeals decision, they will be important in answering the 64 million dollar question: what's now the contingent liability of all the other entities out there with eminent domain powers who have some responsibility for water withdrawals, or dams for that matter, that may reduce the flows to downstream riparian owners? These issues are: what counts as "injury" that would let a downstream riparian have their day in court? What is the measure of damages? And finally, what are the temporal and spatial limits on lawsuits against water extractors with eminent domain power? For example, could a dam owner on the lower Catawba sue a city in the Catawba headwaters for withdrawing water that might otherwise turn some turbines, even though that arrangement has been in place for over fifty years? Rather than speculate on these things, I will just note that a win for the plaintiffs in the L&S case could conceivably open the veritable floodgates for water litigation in North Carolina, and the answers to these questions would then be critical in deciding how big a flood we would have.

I will close with a brief comment on :

Implications for efforts to improve water security in N.C.

And the Need for legislative clarity on basic principles

The Water Allocation Study recommended that the legislature work on these important issues, and in several respects the General Assembly has done just that—passing bills to encourage better river basin models, require better drought provisions in local water supply plans, and set a path for state and local cooperation on water resource development, among other things.

I would like to return your attention to the very first Water Allocation Study recommendation, however, which was that the legislature should **Clearly state policy goals to guide administrative and judicial decisions.** The Study pointed to a set of principles drawn from the American Society of Civil Engineers' hugely influential Regulated Riparian Model Code, and the study report suggested these were a good starting point for legislative debate and ultimately, we hoped, clarity to guide future decisions. There still is no clear, general set of goals set by the legislature for water allocation to guide administrative and judicial decisions, which is one reason why there is so much uncertainty about this case. Some of the recommended goals were included in the 2010 water allocation/modeling bill, but were stripped from the bill before it passed in light of the extremely short time frame for debate in the 2010 short session. It's too late now to do this in a way that would affect the L&S Hydro case, so we will likely just have to live with the outcome of that case, for better or worse. But as the report noted, "conflict over increasingly scarce water in the state and the region will rise in coming years and decades, and that rise has already begun.' It seems almost inconceivable to me that the Supreme Court will clear things up so much with this decision that there will be no need for the legislature to act on these many questions which are, after all, about as fundamental to the future economic development of this state as anything likely to be debated in Raleigh in our lifetimes.

Finally, I will conclude by reminding you of the Water Allocation Study's call for **regulation of large withdrawals or uses.** I guess the idea of "regulation" is about as popular in the legislature right now as Gio Bernard is popular on the N.C. State campus.

I suspect that all that many people remember of the Water Allocation Study reports in 2008 and 2010 is that we called for more regulation, and that I was forced by poor decisionmaking to wear a bright red hat in honor of the Wolfpack's victories over the Tarheels in football. I learned my lesson and stopped betting with Holman against the Wolfpack, which is why today I can proudly wear a different hat. I also want to take one more shot at persuading you that, whatever you think about the merits and demerits of regulation, the only way to guarantee security for large water users in North Carolina in the future is by regulating large withdrawals. Even if the plaintiffs win the most sweeping victory in the L&S Hydro case and succeed in returning this state to essentially a natural flow doctrine when it comes to competition with public water systems, the riparians will have no real security against withdrawals by other riparians. Almost every other state in the country has realized this to some degree or another and has decided to implement a permitting system that, yes, is an administrative burden for large water

users, but also gives them some guarantee against an upstream user taking away their inflows. Unless economic growth and thus water usage absolutely stops here, this state will eventually have to do that in order to improve water security for all large users. And the longer we wait, the harder it will be to do. Right now it's probably possible to create such a system that would essentially guarantee all the present-day users all the water they need now and for the foreseeable future. As time goes on, that will be more and more difficult. To return for a moment to my comparison between water rights and hunting rights, who has more meaningful liberty: the person who is free to hunt without restriction, but in a place where there is no more game, or the person who must get a license and follow the bag limits and season restrictions, but who as a result has access to a thriving game population? Water regulation is also like that. Properly done, it actually enhances liberty *and* property.

I conclude with this quotation from the 2010 report of the Water Allocation Study, which the L&S Hydro case illustrates perfectly:

"Water supply can be one of North Carolina's real strengths and comparative advantages globally, both for economic development and quality of life in a more general sense. But this will not happen automatically, or by the historical, default approach the state takes to water allocation—letting each water system and water user figure out how to secure their water supply on their own, and leaving any conflicts that emerge largely up the courts to sort out."

Report on the Inactive Hazardous Sites Program and the Bernard Allen Memorial Drinking Water Fund

Dexter Matthews, Director
Division of Waste Management
NC Department of Environment and Natural Resources

Inactive Hazardous Sites Response Act

- Inactive Hazardous Sites Response Act addresses properties contaminated with hazardous substances
- Prior to the 1980s, virtually no regulations on disposal of solid and hazardous wastes
- Thus old disposals/discharges of various chemical-containing wastes
- Also, newly occurring spills of products containing hazardous substances

Sites include:

- Abandoned chemical wastes
- Spills and disposal of various chemicals on manufacturing and other properties
- Residential properties with contaminated soils/groundwater from previous uses or discharges by homeowner

Inventory of Sites Contaminated With Hazardous Substances FY11-12

- Currently1930 open contaminated site cases
- 49 new sites on average discovered each year
- 15 sites completed and assigned "No Further Action Status" on average each year
- 465 sites currently assigned "No Further Action Status"

High-Risk Site Exposure Concerns

- Contaminated drinking water supplies
- Direct contact with contaminated soils on residential property
- Vapors from contaminated groundwater entering homes and other buildings

High-Risk Sites FY11-12

(Includes sites with soil contamination on residential property, with contaminant detections in water supply wells or where water supply wells are within ¼ mi of a source)

- 314 responsible party high risk sites
  - 79 sites with detections in water supply wells
  - 235 additional sites with wells < 1/4mile from source
- 271 high risk sites-No responsible party
  - 152 sites with detections in water supply wells
  - 89 additional sites with wells < ¼ mile from source
  - 29 additional residential soil contaminated sites
  - 1 surface water intake for water supply <1/4 mile
- Staff are able to work on about 150-160 high risk sites with and without responsible parties at a time
- 13 project managers & 2 supervisors in the non-landfill portion of the program plus 1 Bernard Allen Program Manager

Inactive Hazardous Sites Program
Staff Oversight Activities FY11-12
(non-landfill program)

Ongoing voluntary cleanup actions under agreements:

- REC Program-123
- State staff supervised – 70

Spill Response Actions – 30

Additional Priority Site Actions-151

What Makes a Site "Orphaned"?

- Discharger is bankrupt or out of business
- Discharger does not have sufficient funds to address
- Cannot determine what party discharged the contamination

Difficulties in Determining Responsibility

- Not required to keep records of spills and disposal prior to the 1980s
- Many operators in succession may have used same chemicals
- High cost of cleanup (thousands to millions of $) an incentive not to be forthcoming with facts

Comparison of Definition of a Responsible Party Federal vs State

Inactive Hazardous Sites Response Act

Those entities who:

- Discharge or deposit
- Contract or arrange for any discharge or deposit
- Accept for discharge or deposit
- Transport or arrange for transport for the purpose of discharge or deposit
- Owner liability is implied not express: "an innocent landowner who is a bona fide purchaser of the inactive hazardous substance or waste disposal site without knowledge or without a reasonable basis for knowing that hazardous substance or waste disposal had occurred ....shall not be considered a responsible party"

CERCLA

- Past and present owners and operators are liable unless eligible for certain exceptions

Funding Sources for Orphaned Sites

- US EPA
- Pre-Regulatory Landfill Fund
- Bernard Allen Memorial Drinking Water Fund
- Inactive Hazardous Sites Cleanup Fund
- Bankruptcy Claims

Pre-Regulatory Landfill Sites

- 676 Pre-Regulatory Landfill Sites
  (*Not counted in inventory of 1930 sites*)
- State-wide disposal tax funds assessment and mitigation of risks posed by these sites
- Approximately $9 million in income annually
- 7 staff implement program (cap on administration expenses)

Pre-Regulatory Landfill Sites FY11-12

- 55 sites had ongoing or completed contaminant investigations
- Several of these in the remedial design phase nearing cleanup stage
- 168 water supply wells sampled
- Alternate water provide to 7 homes:
  - Albermarle Dump-Albermarle/Stanly
  - Fairview Landfill-Fairview/Buncombe
  - Little Mountain Landfill-Columbus/Polk

Bernard Allen Memorial Drinking Water Fund

- Has been receiving 2.5% of Scrap Tire Tax since Nov 2009 (approx. $400K annually)
- Used to sample wells and to provide alternate drinking water to affected homes
- Alternate Water Provided FY11-12 *(Each has 1 or more homes):*
  - Atkinson Road-Hamlet/Richmond
  - Barwell Road-Raleigh/Wake
  - Brekenwood Subdivision-Pleasant Garden/Guilford
  - Clontz Residence-Marshville/Union
  - Country Club Lane-Roxboro/Person
  - Durwood Grocery-Willard/Pender
  - Mary Chappell-Hamlet/Richmond
  - Montgomery County/Moore County Pesticide Contaminated Wells
  - Needmore General Store-Fuquа-Varina/Wake
  - Painter Well-Belmont/Gaston
  - Priddy Site-Lawsonville/Stokes
  - Post Road-Shelby/Cleveland
  - Scercy Wells-Charlotte/Mecklenburg
  - Sipe Well-Hickory/Catawba
  - Staley PCE-Liberty/Randolph
  - Union Road-Gastonia/Gaston
  - VFW Road-Reidsville/Rockingham

Bernard Allen Memorial Drinking Water Fund

Alternate Water for Contaminated Water Supply Wells

- For wells with hazardous substance contamination and other pollutants
- Can be from natural conditions or normal application of pesticides
- Contaminant must be greater than Fed. drinking water standard
- Owner income must be less than 3X US poverty guidelines to receive alternate water funding
- Fund can pay no more than 1/3 of water line cost and no more than $10K/residence

Inactive Hazardous Sites Cleanup Fund FY11-12
Contaminant Assessment to Determine Risk/Responsibility

FY11-12 Inactive Hazardous Site Cleanup Fund Income: $475,743 (mostly from Scrap Tire Tax)

- Biddle Street-New Bern/Craven
- Fairland Lane-Lincolnton/Lincoln
- Hollingsworth Property-Fayetteville/Cumberland
- Paziuk Warehouse-Wilmington/New Hanover
- Pender Plating-Burgaw/Pender
- Phoenix Recycling-Havelock/Craven
- Pleasant Garden Road Contamination-Pleasant Garden/Guilford
- Rochelle Street Wells-Durham/Durham
- Safety-Kleen-Wallace/Duplin
- Stoller Chemical-Severn/Northampton
- Villa Mobile Home Park-Kannapolis/Cabarrus
- Walker Drum Disposal-Gold Hill/Rowan
- Wrightsville Avenue-Wilmington/New Hanover

Inactive Hazardous Sites Fund

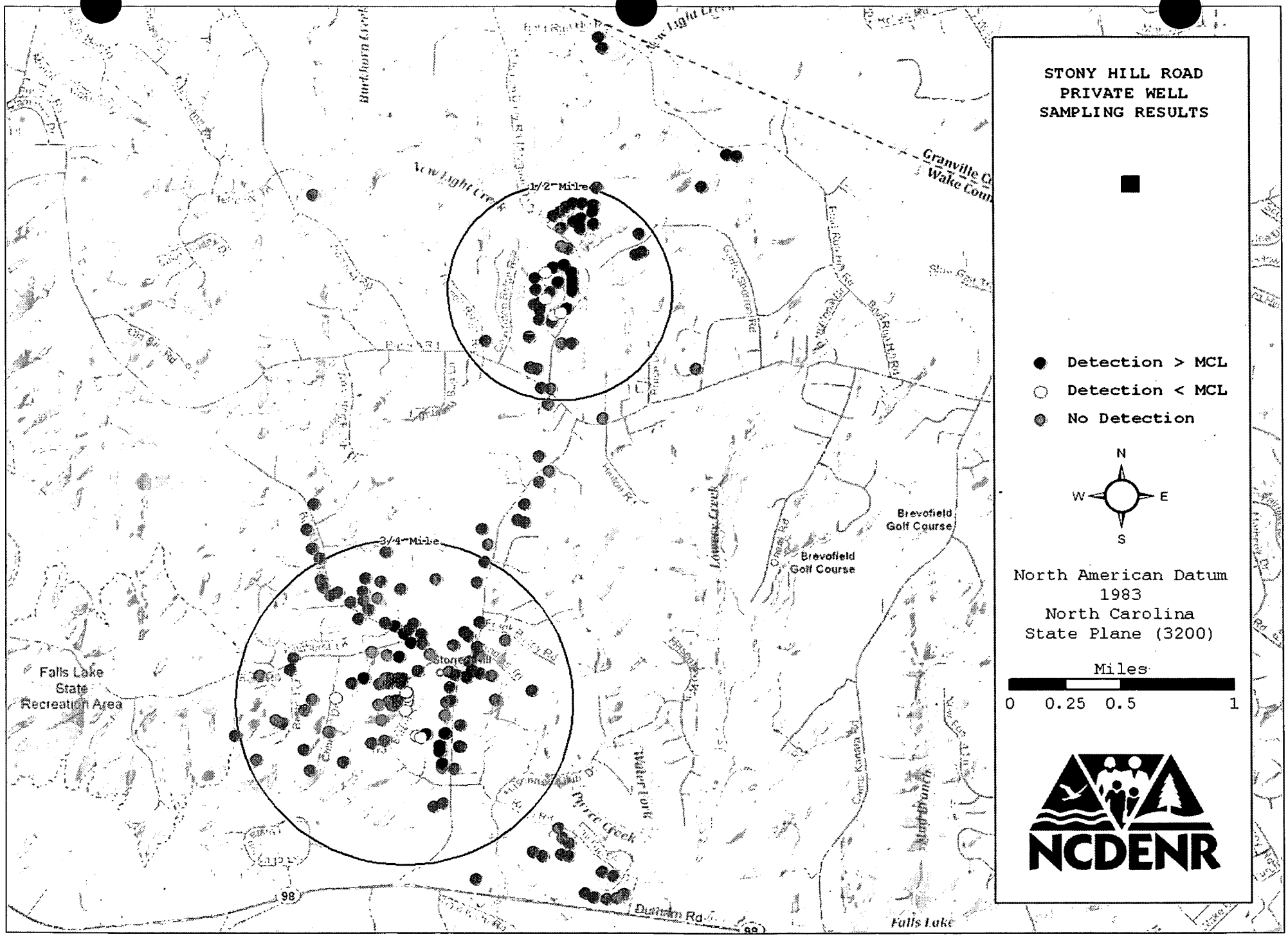
Providing Alternate Water FY11-12

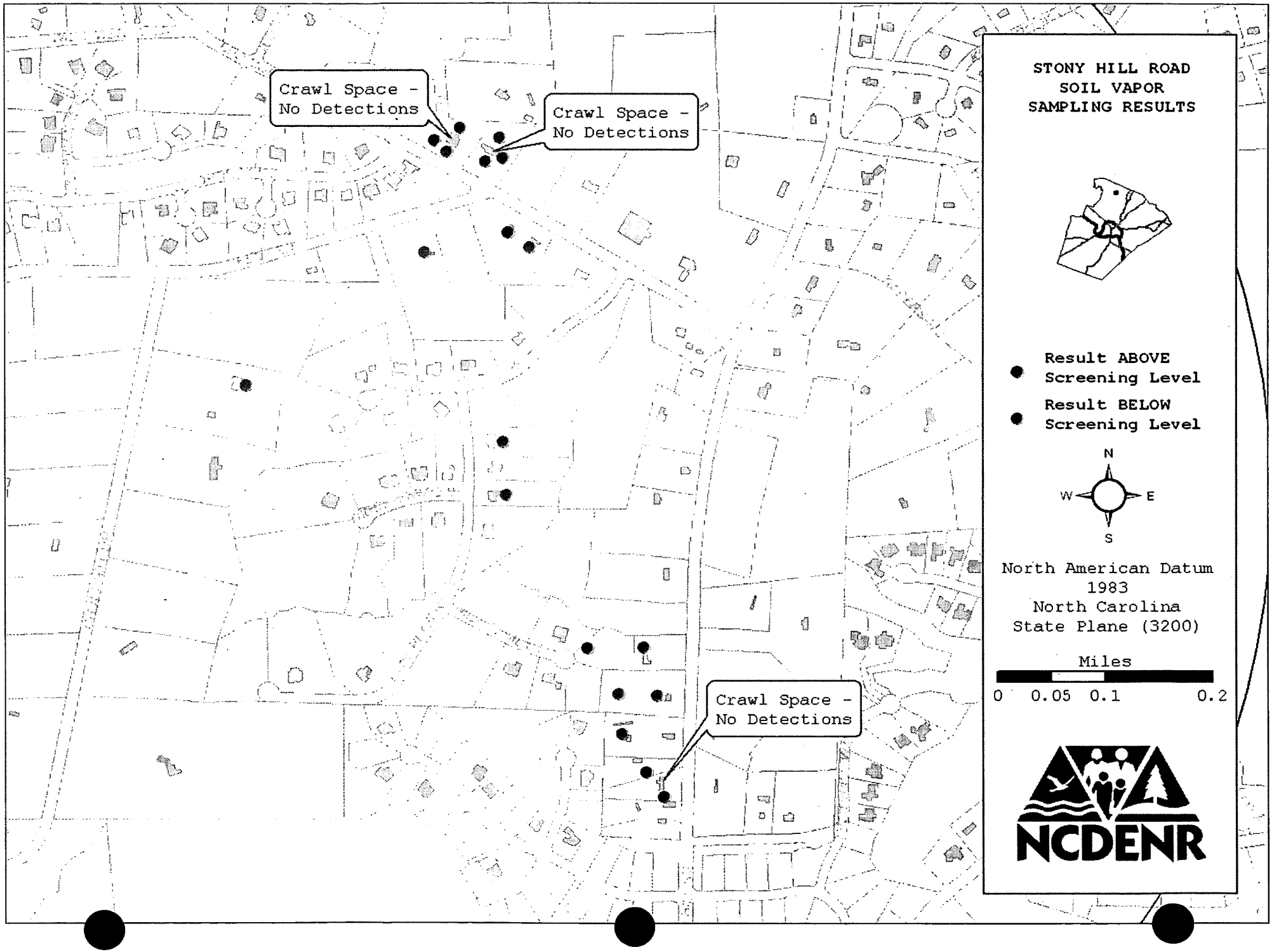
(Sites listed have one or more homes affected)

- Brekenwood Subdivision-Pleasant Garden/Guilford (properties not qualifying for Bernard Allen)
- Busick Road-Reidsville/Rockingham
- Pawley Drive Contamination-Charlotte/Mecklenburg
- Priddy Site-Lawsonville/Stokes (properties not qualifying for Bernard Allen)
- Woodleaf and Ridge Site-Salisbury/Rowan

Inactive Hazardous Sites Cleanup Fund FY11-12 Source Removals/Remedial Action

- **Cheeseman Property-Rockwell/Cabarrus**
  - Lead contaminated soil removed from residential property
  - $10,887 spent FY11-12, $24,307 total through FY11-12
- **Crowders Mountain State Park-Gastonia/Gaston**
  - Crushed drums of mixed chemical wastes removed from residential/park property
  - $69,803 spent FY11-12, $160,080 total through FY11-12
- **G&B/Farmer Property-Scotland Neck/Halifax**
  - Contaminated soil from wood treating operation on residential property removed
  - $101,243 spent FY11-12, $138,077 total through FY11-12
- **Levi Watts Property-Tabor City/Columbus**
  - Lead contaminated soil removed from residential property
  - $53,505 spent FY11-12, $81,182 total through FY11-12
- **Texfi-Fayetteville/Cumberland**
  - Mixed solvents in soils and groundwater at textile plant next to City of Fayetteville water plant (below ground tank and water intake near contamination)
  - Source remediation underway; Estimated cleanup costs in tens of millions of dollars
  - $58,892 in bankruptcy funds spent FY11-12, $1.7 million spent in mixed funds through FY11-12
  - $161,631 remained at end of FY11-12
- **Vinegar Hill-Tabor City/Columbus**
  - Lead contaminated soil removed from residential property
  - $74,996 spent in FY11-12, $83,226 total through FY11-12


STONY HILL ROAD
PRIVATE WELL
SAMPLING RESULTS
Detection > MCL
Detection < MCL
No Detection
N
W
E
S
North American Datum
1983
North Carolina
State Plane (3200)
Miles
0 0.25 0.5 1
NCDENR
1/2-Mile
3/4-Mile
Falls Lake
State
Recreation Area
Brevofield
Golf Course
Brevofield
Golf Course
Stony Hill
Durham Rd
98
Falls Lake
Burlington Creek
New Light Creek
Lower Creek
Pierce Creek
Water Fork
Granville C
Wake Coun

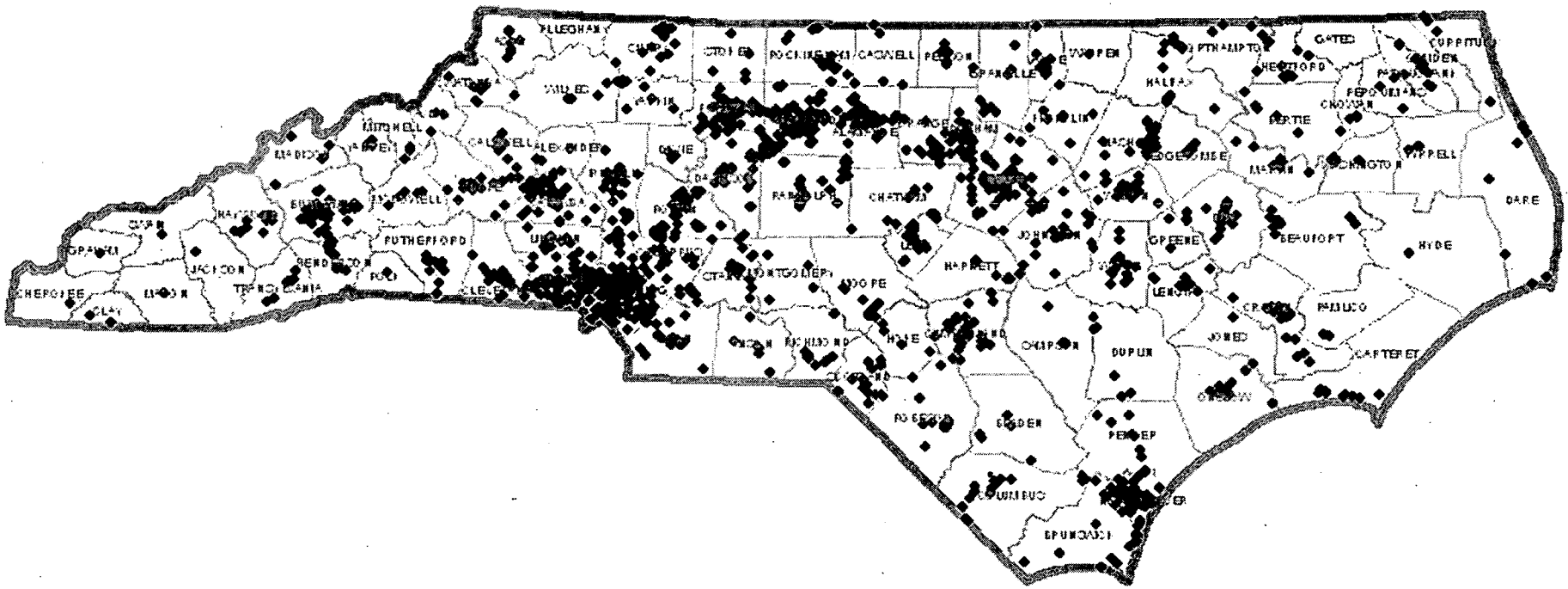

Crawl Space - No Detections
Crawl Space - No Detections
Crawl Space - No Detections
STONY HILL ROAD
SOIL VAPOR
SAMPLING RESULTS
Result ABOVE Screening Level
Result BELOW Screening Level
N
W
E
S
North American Datum 1983
North Carolina State Plane (3200)
Miles
0 0.05 0.1 0.2
NCDENR

Current Issues

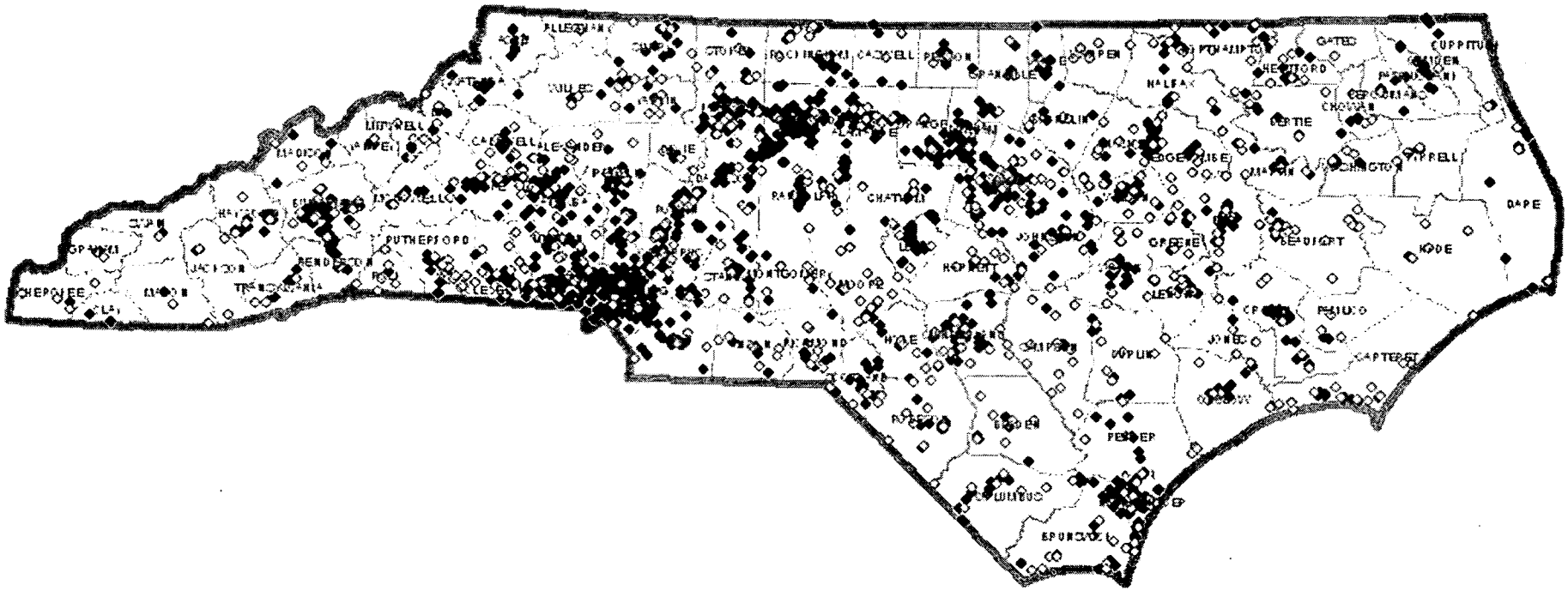
- 585 known high risk sites
- 1930 non-landfill sites cataloged
- Staff can work on 150-160 at a time
- Each take years to address
- About ½ of sites anticipated to be orphaned
- Limitations on use of Bernard Allen Funds

Recommedations

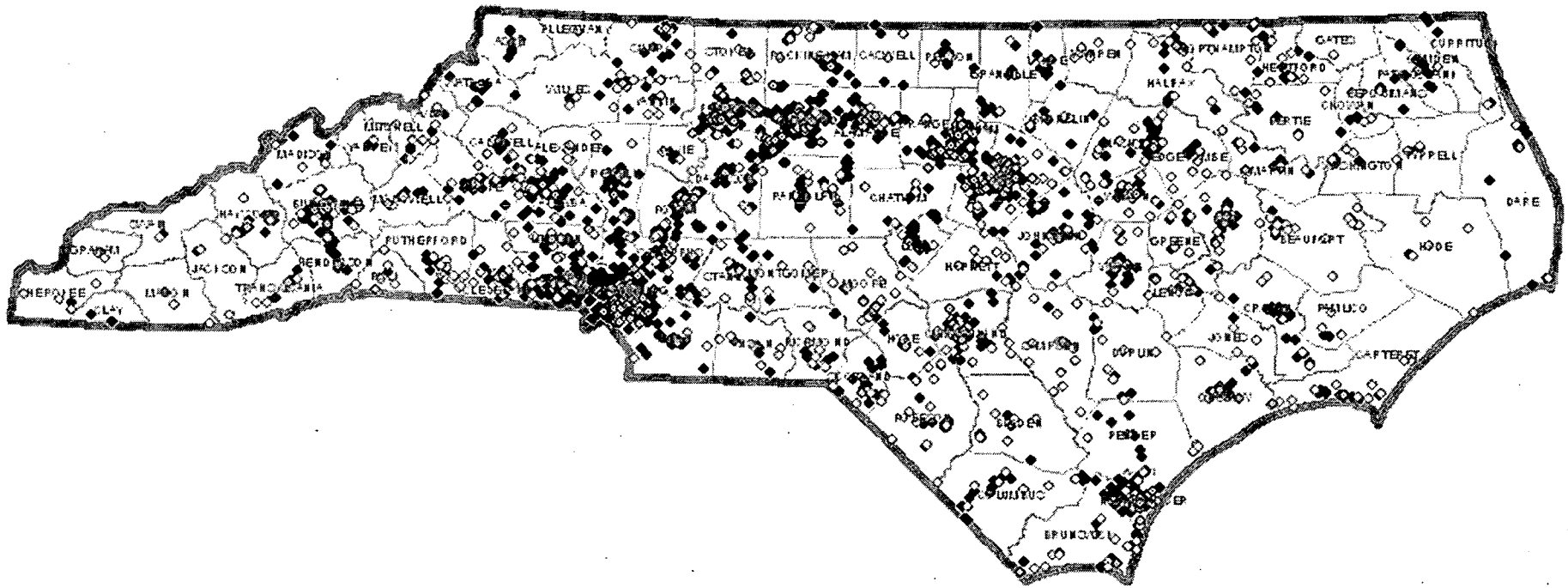
- Consider changes to the statutory provisions of the Inactive Hazardous Sites Response Act to make more consistent with federal law (Superfund)
- Consider statutory changes in Bernard Allen legislation:
  - Increase the amount per household for extending water lines from $10K to $50K.
  - Modify provision which limits water line expenditures to no more than 1/3 the total project cost to apply only in cases of greater than 10 homes.
  - Allow more frequent testing of wells in certain situations.
- New efforts to educate the public on importance of testing their water supply well should be initiated



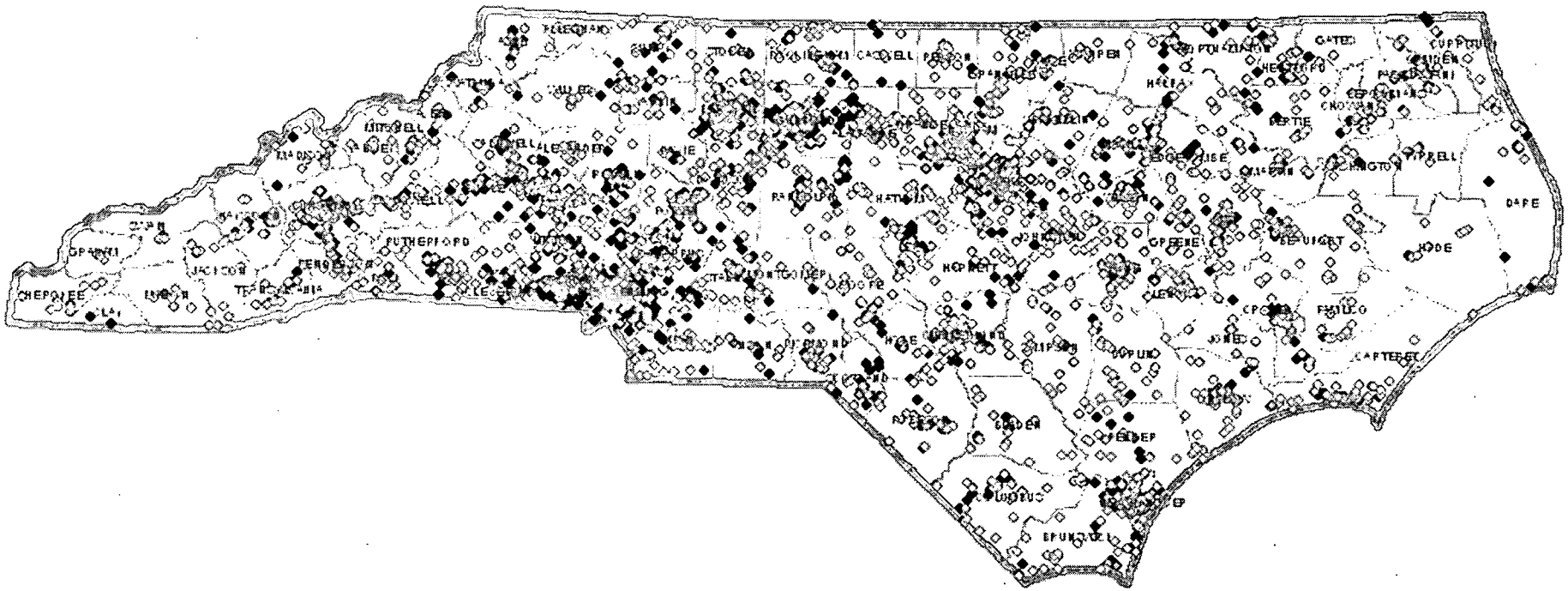
- Inactive Hazardous Sites



- Pre-regulatory Landfills
- Inactive Hazardous Sites



- DSCA
- Pre-regulatory Landfills
- Inactive Hazardous Sites



- AST Incidents (Open)
- DSCA
- Pre-regulatory Landfills
- Inactive Hazardous Sites



- UST Incidents (Open)
- AST Incidents (Open)
- DSCA
- Pre-regulatory Landfills
- Inactive Hazardous Sites

#13

NCDENR

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

October 1, 2012

MEMORANDUM

To: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FISCAL RESEARCH
Mr. Mark Trogdon, Acting Director, Fiscal Research Division

JOINT LEGISLATIVE COMMISSION ON GOVERNMENTAL OPERATIONS
The Honorable Thom Tillis, Speaker of the House of Representatives
The Honorable Phil Berger, President Pro Tempore

FROM: Kari Barsness KKB
Director of Legislative and Intergovernmental Affairs

SUBJECT: Inactive Hazardous Waste Sites Program Report (Division of Waste Management)

DATE: October 1, 2012

Pursuant to G. S. 130A-310.10 and S. L. 2011-186, the Division of Waste Management shall submit to the Environmental Review Commission, the Fiscal Research Division and the Joint Legislative Commission on Governmental Operations a report on the Inactive Hazardous Waste Sites by October 1st of each year. Please consider the Inactive Hazardous Waste Sites Program's 2012 Annual Report attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 707-8618 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Assistant Secretary for Environment Robin W. Smith
Dexter R. Matthews, Director, Division of Waste Management
Kristin Walker, Fiscal Research Division
Lanier McRee, Fiscal Research Division
Mariah Matheson, Research Division

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One NorthCarolina Naturally

Report to the North Carolina General Assembly
on the
Inactive Hazardous Sites Program

October 2012

North Carolina Department of Environment and Natural Resources
Division of Waste Management
Superfund Section

http://portal.ncdenr.org/web/wm/sf/ihshome

EXECUTIVE SUMMARY

The N.C. General Assembly created the Inactive Hazardous Sites Program in the Department of Environment and Natural Resources' (DENR) Division of Waste Management (DWM) to identify, investigate and cleanup properties contaminated with hazardous substances. The program also manages the assessment and cleanup of old landfill sites that have environmental contamination. The landfill sites addressed through the program are those that never met modern landfill standards designed to prevent contamination. This report satisfies the requirement, set out in G.S. 130A-310.10, for an annual report to the General Assembly. [1]

The report describes activities at voluntary remedial action sites, priority cases, orphan site actions, imminent hazard abatement and National Priorities List sites. DWM has electronically compiled information on the contaminant type and environmental media known or believed to be affected at each site only for the Priority List sites in the Inactive Hazardous Sites Inventory. That information continues to be included in this legislative report. Almost without exception, the "amount" of waste is unknown since there is rarely a record of the amount released. Generally, a complete site evaluation has to be completed before it is possible to reasonably estimate the volume of waste.

A table with the location of old landfills in the inventory (organized by county) is available on the DWM website.[2] These sites are being handled as prescribed in Session Law 2007-550.

Since the program started in 1987, 3,071 chemical spill or disposal sites and old, unlined dumps or landfills (pre-regulatory) have been cataloged. Of this number, 2,606 still require work to address public health or environmental hazards.

Of the 2,606 remaining open cases, 676 are old, unlined landfills that predate solid and hazardous waste permitting laws. Half of the proceeds of a statewide solid waste disposal tax are directed by statute to the Inactive Hazardous Sites Cleanup Fund to address contamination at these pre-regulatory landfills. DWM has documented that 86 percent of these landfills have residences, schools, day care centers, churches, parks or drinking water sources on or within 1,000 feet of the landfill or have explosive levels of methane present. Seven old landfill sites were screened in FY2011-12; of those, two new sites were added to the Inactive Hazardous Sites program catalog. DWM has established contracts with private firms to assess and remediate the pre-regulatory landfill sites.

Revenue from the solid waste disposal tax can be used only to address landfill sites; very limited funds are available to assess and remediate other chemical waste sites where the owner lacks the financial resources or where the person responsible for the contamination is unknown. At the end of FY 2011-12, the unobligated cash balance in the Inactive Hazardous Sites Cleanup Fund

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[1] N.C.G.S. 130A-310.10 (a1) requires DENR to report to each member of the General Assembly the location of each inactive hazardous substance or waste disposal site in the member's district, the type and amount of hazardous substances or waste on each of these sites, the last action taken at each site and the date of the last action. This information is provided online at: http://portal.ncdenr.org/web/wm/sf/sfavailabledocs. Click on the link entitled "Inactive Hazardous Sites Program Report to the NC General Assembly-Supplement" under the Reports header.

[2] Go to the same web link referenced in footnote 1 and click on Old Landfill Inventory" under the Site Inventory header.

(IHSCF) was $0. DWM has estimated the cost of addressing the currently identified highest priority orphan hazardous sites at $161,195,790.

With the assistance of the Attorney General's Office, the program has recovered funds for assessment and remediation through bankruptcy claims for several sites over the years. In FY2011-12, $20,205 was recovered from General Motors for one site and $121,889 from Spectrum Dyed Yarns for one site. Additional proceeds in the amount of $33,500 were received from the Pillowtex bankruptcy proceeding for two sites. These new monies go into special trust funds, since the payments can only be used in accordance with the bankruptcy settlement agreements.

Session Law 2011-186 authorized a new approach to remediating contaminated groundwater. The bill allows use of alternate risk-based groundwater remediation standards for cleanup at certain industrial properties. This remediation approach is only available on sites where the owner can show that contamination has not migrated off the property and will not in the future. DENR has received many inquiries about the new law and has been advised by several parties that remedial action proposals are in the works employing this new provision. An application fee is required for review of a risk-based cleanup plan under this program. While some partial applications have been submitted, applications fees have not yet been received. Future reports will include information on receipt and expenditure of funds as required by law.

The following provides a status of sites cataloged by the Inactive Hazardous Sites Program.

Total Number of Inactive Hazardous Sites Cataloged	**3,071**
Chemical Spill or Disposal Sites	2,395
New Sites Cataloged This Reporting Year	36
(120 new sites screened; 36 added plus two sites reactivated based on new information)	
Pre-Regulatory Landfills	676
Total Number Sites of Requiring No Further Action	**465**
Sites Completed In FY 2011-12	15
(18 reviewed; 15 were eligible)	
Remaining Open Sites	**2,606**
Oversight of Responsible Party Cleanup Actions	**223**
Registered Environmental Consultant (REC)-Supervised Remedial Actions	123
Staff-Supervised Remedial Actions Under Administrative Agreements	70
Spill Response Actions	30

Additional Priority Sites	**151**
(orphaned case actions, determining responsible parties, soliciting responsible party cooperation, enforcement actions and bankruptcy actions)	
Inactive Hazardous Sites Cleanup Fund Actions in FY2011-12	**21**
Sites Undergoing Contaminant Assessments	13
Sites Undergoing Contaminant Remediation	3
Homes Provided Alternate Water	5
Water Supply Wells Sampled at Non-Landfill Sites	**92**
Pre-Regulatory Landfill (PRLF) Sites - FY2011-12 Actions	
1st Phase Assessments *(receptor research, geophysical perimeter assessment)*	**14**
Delineation Phase Assessments *(can be multiple field events)*	**5**
1st Phase Assessments Ongoing	**10**
Delineation Phase Assessments Ongoing	**45**
Remedial Design Ongoing	**5**
Homes Provided Alternate Water	**7**
Number of water supply wells sampled	**168**

Other program activities include groundwater and soil sampling to identify hazards, prioritization of sites, response to public inquiries (more than 2,700 this year), notification of responsible parties of their responsibility for assessment and cleanup, implementation of the Registered Environmental Consultant Program and the Bernard Allen Emergency Drinking Water Program (BAP) (data for the BAP is provided in a separate report to the N.C. General Assembly) and conducting training events.

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I. THE INACTIVE HAZARDOUS SITES INVENTORY AND THE INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST

The Division of Waste Management's (DWM) Inactive Hazardous Sites Branch implements the Inactive Hazardous Sites Response Act of 1987 (IHSRA). The IHSRA requires DENR to maintain a catalog of inactive hazardous substance or waste disposal sites. The program has cataloged 2,395 chemical spill sites and 676 old unlined landfills. Of these, 465 sites now have all work completed and are assigned "No Further Action" status. Fifteen completed all work and were assigned "No Further Action" status in FY2011-12. Table 2, on page 3, provides a list of those sites. Table 1, on page 2, provides a list of sites added to that inventory in FY2011-12. A total of 36 new sites were added this past fiscal year and two sites had to be reopened due to new information on contamination.

N.C.G.S. 130A-310.2 requires DWM to prioritize sites cataloged in the Inactive Hazardous Sites Inventory based on the threat to public health and the environment. Sites are first cataloged in the "Evaluations Pending" category of the Inactive Hazardous Sites Inventory until DWM ranks the site based on rules found in 15A NCAC 13C .0200. Once ranked, sites are transferred to the Inactive Hazardous Waste Sites Priority List. The priority list is provided in an appendix to this report organized in order of the threat to public health and the environment. The entire inventory of both ranked and unranked sites can be provided upon request.

TABLE 1. INACTIVE HAZARDOUS SITES INVENTORY
LIST OF NEW AND REACTIVATED SITES FY 2011-12

NEW SITES:

ID Number	*Site Name*	*City*	*County*
NONCD0002888	ALDERMAN PROPERTY (FRMR) POINT HARBOR	WILMINGTON	NEW HANOVER
NONCD0002885	ANNEDEEN HOSIERY BLDG	BURLINGTON	ALAMANCE
NCN000410765	AOPC 10 CAMP LEJEUNE ALTERNATE OFF-BASE	JACKSONVILLE	ONSLOW
NONCD0002881	ARDEE/TRANSLITE	SHELBY	CLEVELAND
NONCD0001597	AVERY DENNISON (FMR PAXAR CORP)	LENOIR	CALDWELL
NONCD0002883	BIDDLE STREET-1104	NEW BERN	CRAVEN
NONCD0002906	BRIDGETON HARBOUR MARINA	BRIDGETON	CRAVEN
NONCD0002666	CARQUEST RETAIL FACILITY	GREENSBORO	GUILFORD
NONCD0002907	CHEM-TEX (FRMR) AKA CLASSIC COFFEE	CHARLOTTE	MECKLENBURG
NONCD0001890	CHRISTIAN CREEK RD PCE	SWANNANOA	BUNCOMBE
NONCD0001775	DURWOOD GROCERY	WILLARD	PENDER
NONCD0002903	ENGINEERED CONTROLS INTERNATIONAL	WHITSETT	GUILFORD
NONCD0002904	ENGINEERED CONTROLS INTERNATIONAL	ELON	ALAMANCE
NONCD0000043	GOLDSBORO IRON & METAL	GOLDSBORO	WAYNE
NONCD0002891	GOLDSBORO MILLING-MILL #1	GOLDSBORO	WAYE
NONCD0001739	HILLS @ SOUTHPOINT LOTS 128 & 129	DURHAM	DURHAM
NONCD0002889	INNSBRUCK MALL PCE (HOUR GLASS	ASHEVILLE	BUNCOMBE
NONCD0002884	KING'S SCOOTERS	WILMINGTON	NEW HANOVER
NONCD0002892	MERCHANTS METALS (MMI PRODUCTS)	STATESVILLE	IREDELL
NONCD0002897	NC DOT BRIDGE #71	SELMA	JOHNSTON
NONCD0002896	NC DOT BRIDGE #80	FARMVILLE	PITT
NONCD0002882	NEEDMORE GENERAL STORE	FUQUAY-VARINA	WAKE
NONCD0002901	PITT COUNTY SCHOOL BUS GARAGE	GREENVILLE	PITT
NCN000410797	PLEASANT GARDEN RD PCE @ 4710	PLEASANT GARDEN	GUILFORD
NONCD0002902	R.I. STOWWE MILLS (FRMR CHRONICLE MILLS)	BELMONT	GASTON
NONCD0002886	SALE FORD	KINSTON	LENOIR
NONCD0001014	SOUTHERN STATES-LUMBERTON FERTILIZER	LUMBERSON	ROBESON
NONCD0002899	STATELINE SCRAP METAL	GASTONIA	GASTON
NONCD0002893	TOWERS RD DISPOSAL AREA	HERTFORD	PERQUIMANS
NONCD0002895	UNITED SCRAP, INC.	CHARLOTTE	MECKLENBURG
NONCD0002900	VETERAN'S PARK	FAYETTEVILLE	CUMBERLAND
NONCD0002894	VFW ROAD CONTAMINATION	REIDSVILLE	ROCKINGHAM
NONCD0002887	VOLVO CONSTRUCTION EQUIPMENT (FRMR)	ASHEVILLE	BUNCOMBE
NONCD0002898	WOODLEAF & RIDGE PCE	SALISBURY	ROWAN
NONCD0002905	Y-9 DITCH ELIZABETH STREET	ELIZABETH CITY	PASQUOTANK
NONCD0002890	YARDS AT NODA	CHARLOTTE	MECKLENBURG

REACTIVATED SITES:

ID Number	*Site Name*	*City*	*County*
NONCD0001490	KINDER MORGAN/CHEMSERV	WILMINGTON	NEW HANOVER
NCD048469993	PROCTOR CHEMICAL CO INC/NATIONAL STARCH	SALISBURY	ROWAN

TABLE 2. INACTIVE HAZARDOUS SITES INVENTORY
SITES RECEIVING NO FURTHER ACTION STATUS FY11-12

ID Number	*Site Name*	*City*	*County*
NONCD0000039	ABITIBI-PRICE CORPORATION	ROARING RIVER	WILKES
NONCD0001209	APAC-NEW BERN ASPHALT PLANT	NEW BERN	CRAVEN
NONCD0001391	BROWNS RADIATOR SERVICE	WILMINGTON	NEW HANOVER
NCN000410518	CHAPEL STREET BATTERY DUMP	KANNAPOLIS	ROWAN
NONCD0000083	CHEESMAN PROPERTY	ROCKWELL	CABARRUS
NONCD0001585	DALLAS MACHINE COMPANY	GASTONIA	GASTON
NONCD0002803	FERREE PROPERTY	CONCORD	CABARRUS
NCSFN0406953	G&B/FARMER PROPERTY	SCOTLAND NECK	HALIFAX
NONCD0001739	HILLS @ SOUTHPOINT LOTS 128 & 129	DURHAM	DURHAM
NCD981928021	HOLLINGSWORTH PROPERTY	FAYETTEVILLE	CUMBERLAND
NONCD0002467	HWY 87 METHANOL SPILL		BLADEN
NONCD0002810	PEP BOYS #150	MATTHEWS	MECKLENBURG
NCD000776732	SAFETY-KLEEN CORP 3-031-02	WALLACE	DUPLIN
NCSFN0406962	VINEGAR HILL LEAD SITE	TABOR CITY	COLUMBUS
NONCD0002672	WAKE ENTERPRISES, INC	FUQUAY-VARINA	WAKE

II. SITES THAT MAY OR ARE KNOWN TO REQUIRE USE OF THE INACTIVE HAZARDOUS SITES CLEANUP FUND

Purpose of the Fund
The Inactive Hazardous Sites Cleanup Fund is used to: (1) address imminent hazard sites; (2) pay for assessment and cleanup when responsible parties do not comply with orders to clean up sites; (3) pay for assessment and cleanup of sites without financially-viable responsible parties (orphan sites); and (4) pay for preparation of a notice of Inactive Hazardous Substance or Waste Disposal Site if the owner does not comply with orders to record a notice. When a financially viable responsible party exists, the state must attempt to recover its expenditures from the responsible party.

The Inactive Hazardous Waste Sites Priority List helps determine priorities for cleanup. Responsible parties for top priority sites are encouraged to voluntarily clean up their sites. When a responsible party does not comply with a request and subsequent order to clean up a site, the state must perform the cleanup using the Inactive Hazardous Sites Cleanup Fund. The demand for state funds to conduct site cleanups depends on two factors: (1) how often responsible parties refuse to comply with orders to conduct cleanup and (2) the number of sites that lack financially viable responsible parties.

The statute requires that the program report the list of sites known to require funds and the list of sites suspected to require funds for cleanup. Determining whether a responsible party exists (and thus, whether state funds will be needed for assessment and cleanup) is often a complex and lengthy process. It is also difficult to keep this information updated as owners and operators of the facilities change over time. To avoid the need to update the information several times, DWM performs responsible party research when a site is next in priority for action.

Orphan Chemical Sites
The Inactive Hazardous Sites Cleanup Fund was used to address several sites this year. A summary of the work is provided in Table 3.

Table 3. Summary of Inactive Hazardous Sites Cleanup Fund Expenditures FY 2011-12

Site Name	*City/County*	*Activity*	*11/12 Fund Expenditure*
Biddle Street-1104	New Bern/ Craven	Conducted assessment to determine the nature and extent of contamination.	$2,660
Breckenwood Subdivision	Pleasant Garden/ Guilford	Treatment system installed on a contaminated residential well.	$6,096
Busick Road	Reidsville/ Rockingham	Treatment system installed on a contaminated residential well.	$6,497

Crowder's Mountain State Park	Gastonia/ Gaston	DENR's contractor excavated more than 1,000 cubic yards of soil containing hazardous waste and removed 50 drums in FY 2009-10. The Inactive Hazardous Sites Cleanup Fund had insufficient revenue to complete the removal because the volume was discovered to be much larger than originally estimated. The U.S. EPA completed the soil and drum removal work by excavating more than 150 drums and an additional 1,000 cubic yards of contaminated soil. The surrounding water supply wells for several residents are all clean. In June 2011, DENR's contractor initiated a groundwater investigation at the site. Toluene was found in groundwater in excess of state standards. In FY 2011-12, DENR continued the investigation and is evaluating groundwater remediation methods in order to protect the nearby water supply wells.	$69,083
Fairland Lane	Lincolnton/ Lincoln	Conducted assessment to determine the nature and extent of contamination. Work continued from previous fiscal year.	$10,910
G&B/Farmer Property	Scotland Neck/ Halifax	Contaminated soil removal completed. Work continued from last fiscal year.	$101,243
Hollingsworth Property	Fayetteville/ Cumberland	Conducted assessment to determine the nature and extent of contamination in a residential area. Site now assigned No Further Action status.	$13,175
Pawley Drive Contamination	Charlotte/ Mecklenburg	Contaminated well connected to city water system. Work continued from last fiscal year.	$3,700
Paziuk Warehouse	Wilmington/ New Hanover	Conducted assessment to determine the nature and extent of contamination.	$1,507
Priddy Property	Lawsonville/ Stokes	Treatment system installed on a contaminated residential well.	$6,124
Pender Plating	Burgaw/ Pender	High levels of chromium in soil and groundwater on abandoned property adjoining a residential area. Sampling conducted to delineate problem. Work continued from last fiscal year. DENR is seeking U.S. EPA assistance on conducting a removal of contaminated soils.	$52,844

Phoenix Recycling	Havelock/ Craven	Two phases of assessment were conducted by DENR's contractor in FY 2010-11. Arsenic, chromium and manganese were above state groundwater standards on the site and localized arsenic contamination is present in soils. The site is an abandoned recycling operation near a school and some residences, with occasional access by trespassers. Levels present in soils do not exceed levels safe for trespassers and drinking water wells in the area all tested clean. Additional testing of arsenic and metals was conducted in FY 2011-12 indicating no off-property migration is expected to occur.	$21,599
Pleasant Garden Road Contamination	Greensboro/ Guilford	Residential wells suspected to be contaminated by a former dry cleaner. Investigation of source conducted and wells tested. Dry cleaner could not be confirmed to be the source.	$18,902
Rochelle Street Wells	Durham/ Durham	Conducted assessment to determine the nature and extent of contamination.	$19,646
Safety-Kleen	Wallace/ Duplin	Bankrupt facility. Conducted assessment to determine the nature and extent of contamination. Site now assigned No Further Action status.	$654 bankruptcy funds, $2,274 IHSCF
Stoller Chemical	Severn/ Northampton	Abandoned warehouse of chemicals. Building in state of collapse near stream. Conducted assessment of chemicals left at site. Work is continuing from last fiscal year. Coordinating a removal of the chemicals with the U.S. EPA.	$982
Texfi Industries	Fayetteville/ Cumberland	Work at this site was funded through bankruptcy proceeds and the Inactive Hazardous Sites Cleanup Fund. The General Assembly appropriated $50,000 in funds from the Solid Waste Management Trust Fund for FY 2011-12 to assist in cleanup and monitoring of the site. Additional assessment of the extent of the contamination was conducted to aid in determining possible remedial actions. Monitoring of wells on the city of Fayetteville's water plant property is conducted to ensure the interim remedy is protecting the city's water supply.	$58,892
Villa Mobile Home Park	Kannapolis/ Cabarrus	Mobile home park with elevated levels of lead in soils from battery casing dumping. Conducted assessment to determine the nature and extent of contamination.	$17,056
Walker Drum	Gold Hill/	Conducted assessment to determine the nature	$18,933

Disposal	Rowan	and extent of contamination. Work has continued from last fiscal year.	
Watts, Levi Property	Tabor City/ Columbus	Three residential parcels contaminated with lead from battery casing disposal. DENR's contractor conducted a removal of contaminated soil on one parcel in FY 2010-11. Removal at a second parcel was conducted in FY 2011-12. The third property owner refused assistance. A notice of contamination will be recorded on this parcel.	$53,505
Woodleaf Road Residence	Salisbury/ Rowan	Maintenance of a treatment system installed on a residential drinking water well contaminated with hazardous substances.	$421

DENR has also recovered some funds to address specific sites through bankruptcy claims. The following summarizes work activities in FY 2011-12 using bankruptcy funds:

- **Chemtura Corporation** – A total of $3.75 million was recovered for cleanup of the Crompton and Knowles site in Lowell and the Leesona site in Burlington. Work is pending.
- **CMC** -- $925,000 recovered for assessment and cleanup of the Elkin site. Remedial action implemented in FY10-11. Conducting periodic monitoring of groundwater. Funds in the amount of $284,984 remain for monitoring.
- **CMI** – $1.25 million, $750,000 and $100,000 have been recovered for three CMI sites. These funds have been used to conduct assessment/remediation at three CMI sites in Elkin. $312,207, $63,294, and $32,759 remain, respectively, for each site. Assessment/cleanup activities are ongoing.
- **GM** - $20,205 recovered in FY2011-12 for the GM Training Center site in Charlotte. Action pending.
- **Lyondell** – A total of $3,709,423 in two payments and liquidated stock to address four sites: two Cherokee Resources sites in Charlotte, SCM Proctor-Silex in Mount Airy, and SCM Proctor-Silex in Southern Pines. Appropriate distribution of expenditures is being evaluated across these sites based on risk posed and feasibility of remedies.
- **Mark IV** – A total of $42,738 was recovered for three Dayco Inc sites in Haywood County. Work is pending.
- **Pillowtex** – A total of $243,700 has been recovered to address the Fieldcrest Mills site in Spencer and the Cannon Mills site in Kannapolis. DENR is evaluating where best to spend funds at these two sites.
- **SCM** – $5.3 million was obtained to address the SCM site in Charlotte. The funds are held in a private trust fund. The trustee contracts the work at DENR's direction. Work is ongoing.
- **Spectrum Dyed Yarns**- $121,889 recovered for the Kings Mountain site in FY2011-12. Action pending.
- **Texfi Inc.** – A total of $941,215 in funds recovered that is being used to remove sources of contamination at the Fayetteville property. A total of $164,109 remains. Work is continuing.

Pre-Regulatory Landfills

Session Law 2007- 550 established a statewide tax on solid waste disposal, half of which goes to address the hazards posed by landfills that predate federal and state rules on solid waste disposal. The provisions of the bill that relate to the assessment and abatement of contamination at these pre-regulatory landfills went into effect in July 2008. The Division of Waste Management received the first proceeds of the tax in February 2009.

DWM has cataloged a total of 676 unpermitted, unlined landfills. Initial work at each site involved confirming the location, determining the current use of the property, and identifying the use of surrounding property (for example, residential or commercial) to help prioritize the sites for action. That work has been completed. The division then established contracts for contaminant assessment and mitigation of the sites. The division also provides review and approval of assessment work being conducted by local governments and reimburses the cost of that work from the tax proceeds.

In FY 2011-12, DWM completed first phase remedial investigations at 14 sites. That work involves updating information on location of water supply wells, streams, structures and other potential exposure routes, and conducting assessment needed to determine the perimeter of the waste. DWM completed the second phase of assessment (delineation of the extent of the contamination on the site) at five sites. An additional 10 first phase investigations, 45 contaminant delineation investigations, and five remedial designs were underway in FY 2011-12. The program also sampled 168 private water supply wells on or near unpermitted landfills and provided alternate water supplies to seven homes with high levels of contamination. Seven new sites were screened for program qualification. Of those, two were added to the program catalog.

Cleanup Funds Needed

Currently 271 sites that are being used for residential purposes have contaminated water supply wells or have a drinking water source located within one-quarter mile of the site and lack no known financially viable responsible party to pay for abatement. Of this number, 245 are higher priorities due to the site's location on residential property or the detection of contaminants in a water supply well. An additional 44 lower-priority orphaned sites have also been identified. The total number of orphan sites, though, is unknown. Determining whether a responsible party exists (and thus, whether state funds will be needed for assessment and cleanup) is often a complex and lengthy process. It is also difficult to keep this information updated as owners and operators of the facilities change over time. To avoid the need to update the information several times, DWM performs responsible party research when a site is next in priority for action.

Orphan site work can include assessment only, small-to-large soil and waste cleanup, water line installation or larger groundwater restoration projects. An average cost-per-site was determined by first calculating the average cost for orphan soil cleanup actions conducted by DWM's Inactive Hazardous Sites Branch and averaging that figure with an average site cleanup cost for several state programs, published by the Association of State and Territorial Solid Waste Management Officials, adjusting for inflation. That figure comes to $657,942 per site. The total cost for cleanup is estimated to be $161,195,790 for 245 highest priority orphan sites. For all of the 315 orphan sites identified thus far, the total comes to $207,251,739.

As of July 1, 2011, the balance of the Inactive Hazardous Sites Cleanup Fund was $539,772. Of this, $164,109 consists of bankruptcy proceeds dedicated to conducting contaminant source remediation at the Texfi-Fayetteville site. The remaining $375,163 is currently obligated in contracts for assessment and cleanup of contaminated sites. A total of $425,243 in income from all sources was deposited in the fund in FY2011-12. The level of funding required to address the currently identified higher priority sites without responsible parties clearly points out that the Inactive Hazardous Sites Cleanup Fund is underfunded to address inactive hazardous sites remediation across the state.

III. NATIONAL PRIORITIES LIST SITES REQUIRING A STATE COST SHARE

National Priorities List (NPL) sites are those hazardous substance or waste disposal sites that are priorities for cleanup under the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), more commonly known as Superfund. These are sites identified by the U.S. EPA as high priorities for environmental cleanup because of the nature of the contamination and actual or potential threat to human health and the environment. North Carolina has 37 NPL sites.

The NPL includes both sites with financially-viable responsible parties and orphan sites. Cleanup costs are financed either by responsible parties or by a federal trust fund with a state cost share. When the federal trust fund is used, CERCLA requires North Carolina to pay 10 percent of the cleanup cost plus 100 percent of the cost to operate and maintain the remediation system.

Table 4 provides a list of the North Carolina NPL sites and the following information for each site: location, investigation/cleanup status, estimated costs and projected start dates for cleanup. Part I of Table 4, found on page 11, includes those sites where the Federal Trust Fund/North Carolina cost share is required. A summary of North Carolina's cost-share obligations is provided at the end of this part. Part II of Table 4, found on page 13, includes the status of responsible party-funded cleanups.

TABLE 4. NORTH CAROLINA NATIONAL PRIORITIES LIST SITES – PART 1
SITES WHERE FEDERAL TRUST FUND/NORTH CAROLINA COST SHARE IS REQUIRED

NPL Site	*City/County*	*Operable Unit*	*Cleanup Status*	*Cleanup Cost*	*Start Date***
ABC One Hour Cleaners	Jacksonville, Onslow	OU1-Groundwater	RA	$3,760,000	In Progress
		OU2-Soil	RA	$750,000	In Progress
Aberdeen Contaminated Groundwater	Aberdeen, Moore	Groundwater	PP	$7,308,000	In Progress
Barber Orchard	Waynesville, Haywood	OU1-Soil	RA	$24,300,000	In Progress
		OU2-Groundwater	RA	$530,000	In Progress
Benfield Industries	Waynesville, Haywood	Entire Site		$6,729,200	
		Soil	Complete		Complete
		Groundwater	O&M		In Progress
Blue Ridge Plating	Arden, Buncombe	Entire Site		$2,275,200	
		Soil	Complete		Complete
		Groundwater	O&M		In Progress
Cape Fear Wood Preserving	Fayetteville, Cumberland	Entire Site		$24,407,574	
		Soil	Complete		Complete
		Groundwater	RA		In Progress
Carolina Transformer	Fayetteville, Cumberland	Soil/Sediment	Complete	$22,000,000	Complete
		Groundwater	O&M	$328,300	In Progress
Davis Park Road TCE	Gastonia, Gaston	Groundwater	O&M	$3,873,299	In Progress
FCX, Inc.-Statesville	Statesville, Iredell	OU1-Groundwater	O&M	$4,161,525	In Progress
		OU2-Soil	Complete	$6,000,000	Complete
FCX, Inc.-Washington	Washington, Beaufort	OU1-Groundwater	RA	$255,791	In Progress
		OU2-Soil/Surface Water/Sediment	Complete	No Cost Share	Complete
GMH Electronics	Roxboro, Person	OU1-Public Water Supply	Complete	$2,158,550	Complete
		OU2-Entire Site	RI	Not Determined	Not Determined
Kerr-McGee Chemical	Navassa, Brunswick	Soil	RI	Not Determined	Not Determined
		Groundwater	RI	Not Determined	Not Determined
North Belmont PCE	Belmont, Gaston	Groundwater	RA	$7,535,000	In Progress

TABLE 4. NORTH CAROLINA NATIONAL PRIORITIES LIST SITES – PART 1
SITES WHERE FEDERAL TRUST FUND/NORTH CAROLINA COST SHARE IS REQUIRED

NPL Site	*City/County*	*Operable Unit*	*Cleanup Status*	*Cleanup Cost*	*Start Date***
Ore Knob	West Jefferson, Ashe	Entire Site	RI	Not Determined	Not Determined
Potter's Septic Tank Service	Maco, Brunswick	Entire Site		$8,350,000	
		Soil	Complete		Complete
		Groundwater	RA		In Progress
Ram Leather	Mint Hill, Mecklenburg	Entire Site	Interim RA	$2,244,800	In Progress
Sigmon's Septic Tank	Statesville, Iredell	Entire Site		$1,329,400	
		Soil	Complete		Complete
		Groundwater	O&M		In Progress

Cleanup Status Legend

O&M - Remedy Operation and Maintenance
OU - Operable Unit
PP – Proposed Plan
RA - Remedial Action
RI - Remedial Investigation

SUMMARY OF NORTH CAROLINA COST-SHARE REQUIREMENTS (AS OF JUNE 30, 2012)

Estimated total cost of pending/ongoing federal trust fund/N.C. cost-share cleanups (based on signed contracts): $117,867,049*
(Includes both the federal cost and state's 10 percent cost-share)

N.C.'s 10 percent cost share for pending/ongoing cleanups (based on signed contracts): $11,786,705*

Amount of cost share funds distributed in FY 2011-12 $33,961

Fund balance: $7,857,855

Encumbered amount of the fund balance for cost share payments: $5,051,157

*This number will increase due to remedial action cost estimates not being available for all sites. Also, other sites may be added to the National Priorities List, which will require a state cost-share. Also, increases in remedial costs from the original state/U.S. EPA contract amounts can occur.
**Date applies to either entire site or operable unit.

TABLE 4. NORTH CAROLINA NATIONAL PRIORITIES LIST SITES
PART II – RESPONSIBLE PARTY FUNDED CLEANUPS

NPL Site	*City/County*	*Operable Unit*	*Cleanup Status*
Aberdeen Pesticides	Aberdeen, Moore	OU1 & OU4 - Soils-All Sites	Complete
		OU3-Groundwater for FC, TS, F6	O&M
		OU5-Groundwater for Rt 211 & McIver	O&M
Bypass 601/Martin Scrap	Concord, Cabarrus	OU1-Soil/Sediment at Martin Scrap	O&M
		OU2-Off-Site Soil/Sediment	Complete
		OU3-Groundwater	O&M
Charles Macon Lagoon and Drum	Cordova, Richmond	Soil	Complete
		Groundwater	O&M
Celanese Corporation	Shelby, Cleveland	OU1-Groundwater	O&M
		OU2-Soil	Complete
		Surface Water	Complete
CTS of Asheville	Asheville, Buncombe	Not Determined	RI
Chemtronics Inc.	Swannanoa, Buncombe	Soil	RI/FS
		Groundwater	RI/FS
FCX Inc.	Statesville, Iredell	OU3-Burlington Industries Site	In Progress
Geigy Chemical	Aberdeen, Moore	Soil	Complete
		Groundwater	O&M
General Electric/ Shepherd Farm	East Flat Rock, Henderson	Soil	O&M
		Groundwater	O&M
		Surface Water/Sediment	Complete
Horton Iron & Metal	Wilmington, New Hanover	Not Determined	RI/FS
Jadco-Hughes	Belmont, Gaston	Soil/Sediment	O&M
		Groundwater	O&M

TABLE 4. NORTH CAROLINA NATIONAL PRIORITIES LIST SITES
PART II – RESPONSIBLE PARTY FUNDED CLEANUPS

NPL Site	*City/County*	*Operable Unit*	*Cleanup Status*
JFD Electronics/ Channel Master	Oxford, Granville	Soil Groundwater	Complete O&M
Koppers Company Inc.	Morrisville, Wake	Soil Groundwater Surface Water	Complete O&M Complete
Martin Marietta/Sodyeco	Charlotte, Mecklenburg	Soil Groundwater	Complete/Deleted Complete/Deleted
National Starch & Chemical	Salisbury, Rowan	OU1-Groundwater in Western Part of Site OU2-Trench Area Soil/Surface Water OU3-Area 2 Groundwater/Wastewater Treatment Area/Surface Water/ Sediments in NE Tributary OU4-Area 2 Soil/Wastewater Treatment Lagoon Area	O&M Complete O&M O&M
New Hanover County Airport	Wilmington, New Hanover	Groundwater	O&M
NCSU Lot 86	Raleigh, Wake	Soil Groundwater	O&M O&M
Reasor Chemical	Castle Hayne, New Hanover	Soil Groundwater	Complete O&M
USMC Camp LeJeune	Jacksonville, Onslow	Multiple Units	Various Stages
USMC Cherry Point	Cherry Point, Craven	Multiple Units	Various Stages
Ward Transformer	Raleigh, Wake	OU1-Downgradient Reaches OU2-Plant Area & Groundwater	In Progress In Progress
Wright Chemical Corporation	Riegelwood, Columbus	Not Determined	RI/FS

Cleanup Status Legend

O&M - Remedy Operation and Maintenance
OU – Operable Unit
RI-Remedial Investigation
FS-Feasibility StudyFS-Feasibility Study

IV. RESPONSIBLE PARTY VOLUNTARY SITE REMEDIAL ACTION

When the Inactive Hazardous Sites Branch requests a person responsible for contamination at a priority site take action to address it, most agree to voluntarily conduct a cleanup. Some responsible parties and owners initiate an approved assessment and/or remedial action on their own. Due to the number of voluntary remediation projects and very limited staff resources, the General Assembly authorized DENR to privatize oversight of voluntary remediation activities at lower-priority sites. DWM continues to provide oversight for assessment and remediation at sites that present more severe public health threats or other concerns.

The privatized portion of the voluntary cleanup program is called the Registered Environmental Consultant (REC) Program. Under this program, a responsible party hires a private consultant to conduct the site assessment and cleanup and to certify that those activities comply with regulations. The REC certification replaces state oversight of the assessment and cleanup. For a firm to qualify as a REC, it must meet certain qualifications. The state audits a number of the REC projects each year to ensure program integrity. DWM has the authority to sanction an REC where necessary. State staff auditors are funded through fees collected from the voluntary participants.

A current list of the 189 sites where assessments and cleanups are underway in accordance with an administrative agreement with the state is provided in Table 5 on the following page. These are a mixture of REC-directed and DENR-directed actions. Table 6, found on page 20, is a list of additional DENR-directed responsible party assessment and cleanup actions not under administrative agreements.

TABLE 5. VOLUNTARY PARTY REMEDIAL ACTIONS UNDER ADMINISTRATIVE AGREEMENTS DURING FY 2011-12

ID Number	*Sites Name*	*City*	*County*
NONCD0000040	ABBOTT LABORATORIES	LAURINBURG	SCOTLAND
NCD024462327	ACADEMY STEEL DRUM	MATTHEWS	MECKLENBURG
NCD045924339	ACME UNITED CORPORATION	FREMONT	WAYNE
NONCD0001226	ADAMS-MILLIS PLANT 2/33 - NONUST	MOUNT AIRY	SURRY
NONCD0001081	ALCOA-NARROWS POWERHOUSE		MONTGOMERY
NCD002464691	ALLIANCE CAROLINA TOOL AND MOLD	ARDEN	BUNCOMBE
NONCD0001258	AMERLINK SPILL	BATTLEBORO	NASH
NONCD0001275	AO SMITH ELECTRIC MOTOR	MEBANE	ALAMANCE
NCD047257472	APPLIED RESEARCH GROUP, INC.	CHARLOTTE	MECKLENBURG
NCD986188787	ASHEVILLE COAL GAS PLANT #1	ASHEVILLE	BUNCOMBE
NONCD0000032	ASHEVILLE COAL GAS PLANT #2	ASHEVILLE	BUNCOMBE
NCD072003635	ATHOL MANUFACTURING COMPANY	BUTNER	GRANVILLE
NONCD0001318	BARBER PARK	GREENSBORO	GUILFORD
NCD003193588	BARBOUR BOAT WORKS, INC.	NEW BERN	CRAVEN
NCD003149705	BASF WAYNDOTTE CORPORATION	CHARLOTTE	MECKLENBURG
NCD083673590	BENDIX CORPORATION	CHARLOTTE	MECKLENBURG
NCD054412283	BLACK & DECKER PLANT (FORMER)	TARBORO	EDGECOMBE
NCD003189024	BORDEN CHEMICAL FAYETTEVILLE PLANT	FAYETTEVILLE	CUMBERLAND
NCD980502827	BROWN #1	PISGAH FOREST	TRANSYLVANIA
NONCD0002785	BROYHILL/FURNITURE BRANDS	CONOVER	CATAWBA
NONCD0000002	BURLINGTON COAL GAS PLANT	BURLINGTON	ALAMANCE
NCD986171965	CARO-KNIT	WILMINGTON	NEW HANOVER
NCD000608117	CELANESE CORPORATION/FIBERS TECH	CHARLOTTE	MECKLENBURG
NCD986188803	CHARLOTTE COAL GAS PLANT NO. 2	CHARLOTTE	MECKLENBURG
NCD981861214	CHARLOTTE TRANSPORTATION TERMINAL	CHARLOTTE	MECKLENBURG
NONCD0001494	CHEVRON	SALISBURY	ROWAN
NONCD0000041	CIBA-GEIGY	CHARLOTTE	MECKLENBURG
NCD061801361	CIBA-GEIGY CORPORATION	GREENSBORO	GUILFORD
NONCD0001509	CLAIRE MANUFACTURING	CHARLOTTE	MECKLENBURG
NONCD0001092	CMI WWTP (PARCEL1)	ELKIN	SURRY
NONCD0002851	COCA-COLA BOTTLING FACILITY	WILMINGTON	NEW HANOVER
NONCD0001187	COFFING HOISTS	WADESBORO	ANSON
NCD982116477	CONAGRA FOODS, INC	GARNER	WAKE
NCD986197333	CONCORD COAL GAS PLANT	CONCORD	CABARRUS
NONCD0001538	CONFLANDEY INC.	WHITEVILLE	COLUMBUS
NONCD0001544	COOKSON FIBERS	ANSONVILLE	ANSON
NONCD0001097	COPES-VULCAN, INC	CHARLOTTE	MECKLENBURG
NONCD0001551	COTTON MILL SQUARE - SOLVENTS	GREENSBORO	GUILFORD
NONCD0001061	CP&L NORTHERN DIVISION COMPLEX	GARNER	WAKE
NONCD0001569	CROWN HONDA & CAMCO	GREENSBORO	GUILFORD
NONCD0001262	CROWN PONTIAC-SOLVENT	GREEENSBORO	GUILFORD
NONCD0001420	CSX HAMLET DIESEL SHOP	HAMLET	RICHMOND
NONCD0002776	CSX-ROSINDALE	CLARKTON	BLADEN

NONCD0001181	CUMMINS ATLANTIC-DISTRIBUTORSHIP	CHARLOTTE	MECKLENBURG
NONCD0001182	CUMMINS ATLANTIC-GENERAL OFFICE BLDG	CHARLOTTE	MECKLENBURG
NCD062567623	DIAMOND SHAMROCK CORP/HENKEL PROCES	CHARLOTTE	MECKLENBURG
NCD057454670	DIAMOND SHAMROCK CORP/OCCIDENTAL	CASTLE HAYNE	NEW HANOVER
NONCD0001141	DIAZIT COMPANY	YOUNGSVILLE	FRANKLIN
NCD981861743	DUKE POWER/GREENSBORO GAS PLANT	GREENSBORO	GUILFORD
NCD000813519	DUKE UNIVERSITY	DURHAM	DURHAM
NONCD0002818	DUPONT-KENTEC	GRIFTON	LENOIR
NCD986173938	DURHAM GAS PLANT	DURHAM	DURHAM
NONCD0001661	EATON CORPORATION	LAURINBURG	SCOTLAND
NCD004520136	EATON CORPORATION	ROXBORO	PERSON
NONCD0001662	EATON CORPORATION - SANFORD	SANFORD	LEE
NONCD0002853	EATON MANUFACTURING	SELMA	JOHNSTON
NCD986197267	ELIZABETH CITY COAL GAS	ELIZABETH CITY	PASQUOTANK
NONCD0001680	EMERSON LEATHER (FORMER)	HICKORY	CATAWBA
NONCD0001681	EMPIRE BRUSH FACILITY	GREENVILLE	PITT
NCD003201837	ENCEE CHEMICAL SALES, INC.	BRIDGETON	CRAVEN
NONCD0001683	ENERGY CONVERSION SYSTEMS	DUNN	HARNETT
NONCD0001700	FAIRCHILD INDUSTRIAL PRODUCTS CO.	WINSTON-SALEM	FORSYTH
NCD062566047	FASCO CONTROLS CORPORATION	SHELBY	CLEVELAND
NCD986197341	FAYETTEVILLE COAL GAS/RAY AVE	FAYETTEVILLE	CUMBERLAND
NONCD0002854	FIBER DYNAMICS	HIGH POINT	GUILFORD
NONCD0000017	FLAKT PRODUCTS	WINSTON-SALEM	FORSYTH
NONCD0000029	FLEET AEROSPACE CORP./AERONCA	CHARLOTTE	MECKLENBURG
NONCD0000075	FOAMEX/REEVES BROTHERS	CORNELIUS	MECKLENBURG
NONCD0001730	FONTAINE FIFTH WHEEL (FORMER)	ROCKY MOUNT	NASH
NCD000773515	GA-PACIFIC CORP/HDWD SAW	BOWDENS	DUPLIN
NCD000773507	GA-PACIFIC CORP/HDWD SAW	ENFIELD	HALIFAX
NCD986188829	GASTONIA COAL GAS PLANT	GASTONIA	GASTON
NONCD0001757	GB LABELS, INC.	BURLINGTON	ALAMANCE
NCD051322980	GENERAL ELECTRIC CO.	CHARLOTTE	MECKLENBURG
NCD003163730	GENERAL INSTRUMENT CORP.	FAIRVIEW	BUNCOMBE
NONCD0001764	GENUINE PARTS COMPANY 1	CHARLOTTE	MECKLENBURG
NONCD0001779	GLENN MANUFACTURING/DECORATIVE	MORVEN	ANSON
NCD986197309	GOLDSBORO COAL GAS PLANT #1	GOLDSBORO	WAYNE
NONCD0001083	GOLDSBORO COAL GAS PLANT #2	GOLDSBORO	WAYNE
NONCD0001089	GREENSBORO COAL GAS PLANT #1	GREENSBORO	GUILFORD
NCD986188886	GREENVILLE COAL GAS PLANT	GREENVILLE	PITT
NCD981922362	GREIF, INC	BLADENBORO	BLADEN
NCD986232379	GRESHAMS LAKE INDUSTRIAL PARK	RALEIGH	WAKE
NCD051739209	HARRELSON RUBBER COMPANY	ASHEBORO	RANDOLPH
NONCD0001828	HAVELOCK WASTEWATER TREATMENT	NEW BERN	CRAVEN
NONCD0001084	HENDERSON COAL GAS PLANT	HENDERSON	VANCE
NCD981003957	HENSON LANDFILL	FOREST CITY	RUTHERFORD

NCD039102959	HEVI-DUTY ELECTRIC/GENERAL SIG	GOLDSBORO	WAYNE
NONCD0001085	HICKORY COAL GAS PLANT	HICKORY	CATAWBA
NCD986188837	HIGH POINT COAL GAS PLANT	HIGH POINT	GUILFORD
NCD045920279	HOLDING POND FOR WASTE/USS	NAVASSA	BRUNSWICK
NONCD0002602	HONEYWELL INTERNATIONAL	MAIDEN	CATAWBA
NCD003198520	HONEYWELL, INC	DURHAM	DURHAM
NCD048401087	HOOKER FURNITURE	PLEASANT GARDEN	GUILFORD
NCD054283189	HOOVER MACHINE SHOP	GASTONIA	GASTON
NONCD0001869	HOOVER ROAD CONTAMINATION	DURHAM	DURHAM
NCD003215696	HUNT MANUFACTURING	STATESVILLE	IREDELL
NONCD0001159	HYDRO TUBE SOUTH	PITTSBORO	CHATHAM
NONCD0001902	INGERSOLL RAND	DAVIDSON	IREDELL
NONCD0001202	INGRAM PLYWOOD INC	THOMASVILLE	DAVIDSON
NONCD0001951	KERN POLYMERIC	SALISBURY	ROWAN
NCD000653576	KERN RUBBER CO. URETHANE PLANT	SALISBURY	ROWAN
NONCD0001953	KEYSTONE POWDERED METAL COMPANY	CHERRYVILLE	GASTON
NONCD0001118	KIDDE TECHNOLOGIES	WILSON	WILSON
NCD097361018	KIN PROPERTIES ABANDONED DRUMS	CHARLOTTE	MECKLENBURG
NCD986197366	KINSTON COAL GAS PLANT	KINSTON	LENOIR
NONCD0001173	LEBANON CHEMICAL	HERTFORD	PERQUIMANS
NCD986197358	LEXINGTON COAL GAS PLANT	LEXINGTON	DAVIDSON
NONCD0002010	LINK ROAD SITE	WINSTON-SALEM	FORSYTH
NCD062552989	MALLARD CREEK RD/UNION OIL CO OF CA	CHARLOTTE	MECKLENBURG
NCD055359079	MASONITE CORP. FIBERBOARD DIV.	SPRING HOPE	NASH
NONCD0002615	MEDLIN-DAVIS DRY CLEANERS-SALISBURY	RALEIGH	WAKE
NONCD0002784	MGM TRANSPORT CORP	HIGH POINT	GUILFORD
NONCD0002068	MICROMATIC/TEXTRON*	SWANANOA	BUNCOMBE
NCD042891663	MITCHELL ENGR CO/CECO BLDG. DIV.	ROCKY MOUNT	NASH
NONCD0002085	MITSUBISHI ELECTRONICS	DURHAM	DURHAM
NONCD0002090	MOEN - SANFORD	SANFORD	LEE
NONCD0002101	MOUNT HOPE FACILITY	CHARLOTTE	MECKLENBURG
NONCD0001086	MT AIRY COAL GAS PLANT	MT AIRY	SURRY
NONCD0002030	MYERS BROTHERS RECYCLING (FORMER)	GREENSBORO	GUILFORD
NONCD0002194	NCSPA BLDG C-1	WILMINGTON	NEW HANOVER
NCD986197259	NEW BERN COAL GAS PLANT	NEW BERN	CRAVEN
NONCD0002201	NEWS & OBSERVER MECH BLV-SPILL	GARNER	WAKE
NONCD0002236	OLYMPIC PRODUCTS	GREENSBORO	GUILFORD
NONCD0002267	PARKER HANNIFIN CORPORATION	SNOW HILL	GREENE
NCD055162069	PELTON & CRANE PLANT (FORMER)	CHARLOTTE	MECKLENBURG
NONCD0001939	PETRO EXPRESS NO. 56	KINGS MOUNTAIN	CLEVELAND
NONCD0001020	PRECISION FABRICS GROUP, INC	GREENSBORO	GUILFORD
NONCD0001143	PRESTIGE LABELS	BURGAW	PENDER
NCD040047425	PRILLAMAN CHEMICALS	FAYETTEVILLE	CUMBERLAND
NONCD0002338	PSNC OPERATIONS AND GARAGE	DURHAM	DURHAM

NONCD0002128	PURINA MILLS	WILSON	WILSON
NONCD0002345	PUROLATOR PRODUCTS, INC.	FAYETTEVILLE	CUMBERLAND
NONCD0002350	QUALITY FOREST PRODUCTS	ENFIELD	HALIFAX
NCD062548995	QUORUM KNITTING	WEAVERVILLE	BUNCOMBE
NONCD0002361	RADIOSHACK PROPERTY	SWANNANOA	BUNCOMBE
NCD986188894	RALEIGH COAL GAS PLANT NO. 1	RALEIGH	WAKE
NCD986188902	RALEIGH COAL GAS PLANT NO. 2	RALEIGH	WAKE
NCD045915568	RALEIGH METAL PROCESSORS	RALEIGH	WAKE
NONCD0002795	RD PATE ESTATE	PIKEVILLE	WAYNE
NONCD0001201	REEVES BROTHERS-BAILEY RD DUMP	CORNELIUS	MECKLENBURG
NONCD0001087	REIDSVILLE COAL GAS PLANT	REIDSVILLE	ROCKINGHAM
NCD053009510	RELIANCE UNIVERSAL OF KENTUCKY	LENOIR	CALDWELL
NONCD0001108	RENTAL UNIFORM SERVICE	ASHEVILLE	BUNCOMBE
NONCD0001171	RENTAL UNIFORM SERVICES	CLINTON	SAMPSON
NONCD0002391	REXAM CORPORATION - B	GREENSBORO	GUILFORD
NONCD0002404	RITTER MILLWORKS SHOP	CASTLE HAYNE	NEW HANOVER
NONCD0001157	ROBERT BOSCH TOOL CORP	GREENVILLE	PITT
NONCD0001154	ROBERT BOSCH TOOL CORP	LINCOLNTON	LINCOLN
NCD986197325	ROCKY MOUNT COAL GAS PLANT NO. 1	ROCKY MOUNT	NASH
NCD986197317	ROCKY MOUNT COAL GAS PLANT NO. 2	ROCKY MOUNT	NASH
NCD041466525	ROCKY MOUNT FIBER DUMP	ROCKY MOUNT	NASH
NCD981933096	ROCKY MOUNT, OLD AIRPORT	ROCKY MOUNT	NASH
NONCD0002431	RUS	WINSTON-SALEM	FORSYTH
NCD986197283	SALISBURY COAL GAS PLANT #1	SALISBURY	ROWAN
NONCD0001088	SALISBURY COAL GAS PLANT #2	SALISBURY	ROWAN
NONCD0002445	SANTARO HOT MIX ASPHALT PLANT	KERNERSVILLE	FORSYTH
NCD003234549	SCM PROCTOR SILEX/WEAREVER	SOUTHERN PINES	MOORE
NCD000616516	SCOVILL INC/SECURITY PRODUCTS	MONROE	UNION
NONCD0002456	SEARS 8075 SOLVENTS	CHARLOTTE	MECKLENBURG
NCN000407206	SHULIMSON BROTHERS SCRAP YARD	ASHEVILLE	BUNCOMBE
NCD083678631	SINCLAIR AND VALENTINE CO.	CHARLOTTE	MECKLENBURG
NONCD0002488	SONOCO CARTON FACILITY, FORMER	CHARLOTTE	MECKLENBURG
NONCD0001204	SOUTHERN STATES-AHOSKIE SERVICE	AHOSKIE	HERTFORD
NCD053488557	SOUTHERN WOOD PIEDMONT COMPANY	GULF	CHATHAM
NCD058517467	SOUTHERN WOOD PIEDMONT COMPANY	WILMINGTON	NEW HANOVER
NONCD0002531	STANLEY FASTENING*	SANFORD	LEE
NCD986197291	STATESVILLE COAL GAS PLANT	STATESVILLE	IREDELL
NCD083669952	STORY BURIAL AREAS/UNION CHEMICAL	CHARLOTTE	MECKLENBURG
NONCD0001101	STRONGHAVEN WAREHOUSE	MATTHEWS	MECKLENBURG
NONCD0002575	TAKEDA - BASF	WILMINGTON	NEW HANOVER
NCD986166700	TOISNOT SWAMP	WILSON	WILSON
NONCD0002633	TRINITY AMERICAN CORP.	GLENOLA	RANDOLPH
NONCD0002843	TRION, INC	SANFORD	LEE
NONCD0002833	UMICORE CSM NA	MAXTON	SCOTLAND
NONCD0002645	UNIFIRST	WILMINGTON	NEW HANOVER

NONCD0002646	UNIFIRST CORPORATION (FORMERLY	GOLDSBORO	WAYNE
NCD980557623	UNIVERSITY OF NC/ARPT WASTE DISP	CHAPEL HILL	ORANGE
NCD053485991	VARCO-PRUDEN BUILDINGS	KERNERSVILLE	FORSYTH
NONCD0001139	VERMONT AMERICAN	BOONE	WATAUGA
NONCD0001403	WAKEFIELD CITGO	RALEIGH	WAKE
NONCD0001103	WALTER KIDDE PORTABLE EQUIPMENT	MEBANE	ALAMANCE
NCD986197275	WASHINGTON COAL GAS PLANT	WASHINGTON	BEAUFORT
NCD001493931	WECK, EDWARD INC.	RTP	DURHAM
NCN000407582	WEST PHARMACEUTICAL SERVCES	KINSTON	LENOIR
NCD003220969	WHITE FURNITURE CO.	MEBANE	ALAMANCE
NCD986188910	WILMINGTON COAL GAS PLANT	WILMINGTON	NEW HANOVER
NCN000407302	WILMINGTON GUN CLUB (FORMER)	WILMINGTON	NEW HANOVER
NCD093334209	WILSON, RALPH PLASTICS	FLETCHER	HENDERSON
NCD986188845	WINSTON-SALEM COAL GAS PLANT NO. 1	WINSTON-SALEM	FORSYTH
NCD986188852	WINSTON-SALEM COAL GAS PLANT NO. 2	WINSTON-SALEM	FORSYTH
NONCD0002799	WRIGHTSVILLE AVE	WILMINGTON	NEW HANOVER
NCD982156812	WYSONG & MILES	GREENSBORO	GUILFORD

** - Remediating party conducting cleanup of a portion of the site only.*

TABLE 6. ADDITIONAL STATE-DIRECTED RESPONSIBLE PARTY ASSESSMENTS/CLEANUPS NOT UNDER VOLUNTARY ADMINISTRATIVE AGREEMENTS DURING FY 2011-12

ID Number	*Site Name*	*City*	*County*
NONCD0001967	AMERICAN DISTILLATION, INC	LELAND	BRUNSWICK
NONCD0001257	AMERICAN TRUETZSCHLER	CHARLOTTE	MECKLENBURG
NONCD0001259	AMI LIMITED	BURLINGTON	ALAMANCE
NONCD0001264	AMP, INC BUILDING 109 (TYCO)	WINSTON-SALEM	FORSYTH
NONCD0002885	ANNEDEEN HOSIERY BLDG	BURLINGTON	ALAMANCE
NONCD0001273	ANSELL HEALTHCARE	TARBORO	EDGECOMBE
NONCD0002779	APAC-CASTLE HAYNE	CASTLE HAYNE	NEW HANOVER
NONCD0001310	BAILEY RESIDENCE	TARBORO	EDGECOMBE
NONCD0002837	B&C GROCERY	GRAHAM	ALAMANCE
NONCD0001329	BEAMAN CORP.	LIBERTY	RANDOLPH
NONCD0001713	CARDINAL SHOPPING CENTER	WINSTON-SALEM	FORSYTH
NONCD0002576	CASWELL CENTER FARM	KINSTON	LENOIR
NONCD0001166	CENTRAL GRAIN-MORGANS CRNR	ELIZABETH CITY	PASQUOTANK
NCD046148540	CENTRAL TRANSPORT	CHARLOTTE	MECKLENBURG
NONCD0001162	CHAMPION FINISHING	ASHEVILLE	BUNCOMBE
NONCD0001478	CHARLOTTE AIRCRAFT	CHARLOTTE	MECKLENBURG
NONCD0001487	CHEMATRON	CHARLOTTE	MECKLENBURG
NONCD0000016	CMC HOLDING	ELKIN	SURRY
NONCD0000065	CMI-DRUM STORAGE AREA	ELKIN	SURRY
NONCD0001542	CONTINENTAL IN CHEMICALS	CHARLOTTE	MECKLENBURG
NONCD0001418	CROSLAND PROPERTY	CARY	WAKE
NCD003149556	CTS OF ASHEVILLE	ASHEVILLE	BUNCOMBE

NCD003213030	DOUGLAS BATTERY	WINSTON-SALEM	FORSYTH
NONCD0001655	EASON RESIDENCE, DOROTHY	GRAHAM	ALAMANCE
NONCD0001058	ELECTRONICS COMPONENT CORP	BURGAW	PENDER
NONCD0002904	ENGINEERED CONTROLS INTL	ELON	ALAMANCE
NONCD0001137	FABCO FASTENERS	STANDFIELD	STANLY
NONCD0001703	FAIRLAND LANE	LINCOLNTON	LINCOLN
NONCD0001720	FLEET SUPPLY	WINSTON-SALEM	FORSYTH
NONCD0001726	FLOWLINE CORP	WHITEVILLE	COLUMBUS
NCD986172617	FORBES RD WELLS-RAUCH IND	GASTONIA	GASTON
NCD982157067	FORTRESS WOOD PRODUCTS	TARBORO	EDGECOMBE
NONCD0001739	FULFLEX	SCOTLAND NECK	HALIFAX
NONCD0001757	GB LABELS	BURLINGTON	ALAMANCE
NCD050409150	GENERAL ELECTRIC	WILMINGTON	NEW HANOVER
NONCD0000043	GOLDSBORO IRON & METAL	GOLDSBORO	WAYNE
NCD982124646	GREGSON FURNITURE	LIBERTY	RANDOLPH
NONCD0001064	GUILFORD MILLS	FUQUAY-VARINA	WAKE
NCD990734055	HERCOFINA/CAPE INDUSTRIES	WILMINGTON	NEW HANOVER
NONCD0001739	HILLS @ SOUTHPOINT	DURHAM	DURHAM
NCD051745685	HOLDING POND FOR WASTE/USS	GREENSBORO	GUILFORD
NONCD0002467	HWY 87 METHANOL SPILL		BLADEN
NONCD0001232	INDUSTRIAL & AGRICULTURAL CH	RED SPRINGS	ROBESON
NCD003464369	IMC/INTERNATIONAL MINERALS	WINSTON-SALEM	FORSYTH
NONCD0001907	IT RESISTIVE	BOONE	WATAUGA
NONCD0002044	KAPP ST FERTILIZER SPILL	DOBSON	SURRY
NCD980729677	KNOB CREEK FLYASH	BREVARD	TRANSYLVANIA
NONCD0002797	KOCH NORTH PARAXYLENE	WILMINGTON	NEW HANOVER
NONCD0001973	KYSOR-MICH. FLEET DIV	CHARLOTTE	MECKLENBURG
NCD981930019	LAFAYETTE ST PCE/CARMIKE	SHELBY	CLEVELAND
NONCD0001989	LEE PAVING CO/NCDOT SITE 21	ABERDEEN	MOORE
NONCD0002012	LIVINGSTONE COATINGS CORP	CHARLOTTE	MECKLENBURG
NONCD0001176	MURFREESBORO VENEER	MURFREESBORO	HERTFORD
NONCD0002164	NCDOT ASPHALT SITE #3/BROWN	ROCKINGHAM	RICHMOND
NONCD0002161	NCDOT SITE 2/CROWDER CONST.	CHARLOTTE	MECKLENBURG
NONCD0002135	NCDOT SITE 10	JAMESTOWN	GUILFORD
NONCD0002139	NCDOT SITE 25	GREENSBORO	GUILFORD
NONCD0002133	NCDOT SITE 8	STOKESDALE	GUILFORD
NONCD0002142	NCDOT SITE 42	ASHEBORO	RANDOLPH
NONCD0002145	NCDOT SITE 54	WINSTON-SALEM	FORSYTH
NONCD0002149	NCDOT SITE 72	HIGH POINT	GUILFORD
NONCD0002125	NC FOAM	MT AIRY	SURRY
NCD986171379	NEW HAVEN DRIVE TCE	GASTONIA	GASTON
NONCD0002256	PALOMINO CLUB	CHARLOTTE	MECKLENBURG
NONCD0002259	PANTRY #161– SOLVENTS	ELON	ALAMANCE
NCD986215499	PARKER INDUSTRIES	CONNELLY SPRINGS	BURKE
NONCD0002506	PAWLEY DRIVE CONTAMINATION	CHARLOTTE	MECKLENBURG
NONCD0002277	PAZIUK WAREHOUSE	WILMINGTON	NEW HANOVER
NONCD0001425	PETERBILT OF DUNN "A" PARCEL	DUNN	HARNETT

NONCD0001419	PETERBILT OF DUNN "B" PARCEL	DUNN	HARNETT
NONCD0002306	PIKE ELECTRIC, INC	MOUNT AIRY	SURRY
NONCD0002307	PILCH, INC	TROUTMAN	IREDELL
NONCD0002371	RANDOLPH ELECTRIC	ASHEBORO	RANDOLPH
NONCD0002384	REEEVES BROTHERS INC (FMR)	ALBERMARLE	STANLY
NCD053009510	RELIANCE UNIVERSAL	LENOIR	CALDWELL
NONCD0002395	RHONE-POULENC (RHODIA)	GASTONIA	GASTON
NONCD0001016	ROYSTER-CLARK FERTILIZER	OAK CITY	MARTIN
NONCD0002427	ROYSTER-CLARK FERTILIZER	STATESVILLE	IREDELL
NCN000407775	ROYSTER FERTILIZER	LELAND	BRUNSWICK
NONCD0002437	SALEM ELECTRIC	WINSTON-SALEM	FORSYTH
NONCD0002438	SALEM UNIFORM SERVICES	WINSTON-SALEM	FORSYTH
NONCD0001145	SALISBURY ASPHALT PLANT	SALISBURY	ROWAN
NONCD0002443	SANDS & COMPANY SOLVENTS	GASTONIA	GASTON
NCN000410441	SCERCY WELL	CHARLOTTE	MECKLENBURG
NCD093338119	SCM CORP/GLIDDEN COATINGS	CHARLOTTE	MECKLENBURG
NONCD0002515	SPECTRUM DYED YARNS	KINGS MOUNTAIN	CLEVELAND
NCD024895864	STEWART-WARNER	WINSTON-SALEM	FORSYTH
NONNCD0001165	STONY HILL ROAD	WAKE FOREST	WAKE
NONCD0000071	STROH BREWERY	WINSTON-SALEM	FORSYTH
NCD986176444	STROH/CHITTY FARM	WINSTON-SALEM	FORSYTH
NONCD0001386	SUPERIOR ESSEX	TARBORO	EDGECOMBE
NONCD0002563	SUPERIOR PRINTING INK CO	CHARLOTTE	MECKLENBURG
NONCD0002801	SWANNANOA DJJDP PROPERTY	SWANNANOA	BUNCOMBE
NONCD0002238	TERMINEX	WINSTON-SALEM	FORSYTH
NCD002560159	THIELE-ENGDAHL	WINSTON-SALEM	FORSYTH
NONCD0002595	THOMAS CROWN WOOD PROD	MOCKSVILLE	DAVIE
NONCD0000088	TRANS TECHNOLOGY (LUNDY)	CHARLOTTE	MECKLENBURG
NCD082362989	TUNGSTEN QUEEN MINE	TUNGSTEN	VANCE
NONCD0002829	TWIN CITY INDUSTRIAL CENTER	WINSTON-SALEM	FORSYTH
PENDING	TYCO ELECTRONICS COPR BLDG 90	KERNERSVILLE	FORYTHI
NCD000822957	UNION CARBIDE/EVEREADY	ASHEBORO	RANDOLPH
NCD003184249	UNION CARBIDE/EVEREADY	GREENVILLE	PITT
NONCD0002652	UNITED TECHNOLOGIES	MOUNT AIRY	SURRY
NCSFN0406924	VC CHEMICAL	WADESBORO	ANSON
NCN000410344	VC CHEMICAL	WINSTON-SALEM	FORSYTH
NONCD0002894	VFW ROAD CONTAMINATION	REIDSVILLE	ROCKINGHAM
NONCD0002725	WILGROVE MHP	CHARLOTTE	MECKLENBURG
NONCD0002724	WILGROVE EXPRESS	CHARLOTTE	MECKLENBURG
NONCD0001110	WOODSON-TENET	GOLDSTON	CHATHAM
NNONCD0002760	WORTH CHEMICAL	CHARLOTTE	MECKLENBURG

Note: Many other sites are not listed in Tables 5 and 6 where staff are conducting work, including (1) residential properties with contaminated drinking water wells or other contamination and lacking responsible parties, (2) higher priority sites where staff are investigating responsible parties, (3) bankruptcy claims, (4) review of requests for "No Further

Action Status," (5) response to spills, (6) screening of newly discovered sites and (7) responses to public inquiries on sites.

V. IMMINENT HAZARD SITES

DENR and the U.S. EPA are committed to addressing imminent hazard sites when identified. Table 7 provides a list of sites where imminent hazards have been discovered, or where abatement activities have continued, in FY 2011-12. Their location, a site description, status and funding source are also provided.

TABLE 7. SUMMARY OF IMMINENT HAZARD SITES

Site	*City/ County*	*Site Description*	*Status*	*Funding Source*
Atkinson Street Contamination	Hamlet/ Richmond	Private well contaminated with hazardous substances above federal drinking water limits.	DENR conducted testing to determine sources of contamination. Contaminant source could not be located. Resident's water supply well was connected to a treatment system.	State
Bechmann Technologies	Durham/ Durham	Several residences and other property found to have drinking water wells with contaminants above federal drinking water standards. Source of contamination not known.	U.S. EPA has connected four residences to city service. The U.S. EPA plans no further work. The DENR plans to investigate whether responsible parties can be located.	U.S. EPA
1104 Biddle Street	New Bern/ Craven	Unknown quantity of fertilizer was dumped when tractor trailer was cleaned out in abandoned lot.	Craven County Emergency Services responded to initial report. Site investigated by DENR staff. Ammonia spill found in groundwater.	State
Brookshire Trailers	Charlotte/ Mecklenburg	Three semi vans containing 520 drums of chemicals. Some drums have leaked. All the vans have leaked.	U.S. EPA is conducting testing. Removal will continue into FY2012-13.	U.S. EPA
Carlisle Street Lead	Winston-Salem/ Forsyth	Forsyth County DEH reported child with elevated blood lead.	DENR and U.S. EPA conducted site testing and an evaluation of the residence. U.S. EPA completed a removal of the contaminated soils.	State/U.S. EPA
Chapel Street Battery Dump	Kannapolis/ Rowan	Lead-contaminated soils in a residential area due to battery casing disposal.	The U.S. EPA completed a cleanup of soil contamination in 2/11. Post-cleanup assessment was completed in FY2011-12 and site is now assigned "No Further Action" status.	U.S. EPA
Cheesman Property	Rockwell/ Cabarrus	Residential property contaminated with lead from battery casing disposal.	DENR conducted sampling to determine extent of contamination and then removed contaminated soils. Site now assigned "No Further Action" status.	State
Conway Trucking	Asheville/ Buncombe	A 55 gallon drum of sulfuric acid found leaking.	Drum and contaminated soils were removed.	Responsible Party
Crowders Mountain State Park	Gastonia/ Gaston	Large disposal of drummed wastes located on residential and park property.	DENR removed some of the drums. Due to large numbers, DENR did not have the resources to remove all of the drums and contaminated soils. The U.S. EPA agreed to take over the drum/contaminated soil removal. All of the wastes and contaminated soils have been removed. DENR is now investigating conducting remediation of contaminated groundwater found at the site and conducting groundwater testing on adjacent residential properties.	State/ U.S. EPA
Derringer Drive Water Supply Wells	Marshall/ Madison	Two newly installed water supply wells found to be contaminated with chlorinated solvents. Reported to DENR in June 2011.	DENR Public Water Supply Section made efforts to ensure the wells were not connected into the municipal water supply system. DENR and U.S. EPA sampled supply wells in the area. Source of contamination unknown at this point.	State/U.S. EPA

Domtar	Plymouth/ Martin	Had several spills including caustic and acid spills in January and February 2012, respectively. Some liquids entered river.	Responsible party put sand to absorb runoff. Some soils removed. High and low pH soils remain on plant property	Responsible Party
Eubanks Road Contaminated Well	Chapel Hill/ Orange	Residential well contaminated with pesticides.	The U.S. EPA connected home to city water service.	U.S. EPA
Holmes Drums	Selma/ Johnston	Leaking abandoned drums of mostly non-hazardous materials.	The U.S. EPA completed a removal in FY2011-12. Follow-up soil testing showed area clean.	U.S. EPA
I-26 Sulfuric Acid Spill	Hendersonville/ Henderson	Tanker truck wreck released sulfuric acid onto the Green River Bridge.	No discernible impact to surface waters but affected bridge structure and soils. DOT oversaw structural repair of bridge. Contaminated soils were excavated. Awaiting confirmation sample results.	Responsible Party
International Paper	Reigelwood/ Columbus	High pH process water leaks in July 2011 and June 2012.	Responsible party repaired line and excavated some soils. Contaminated soils remain on property.	Responsible Party
Invista (aka Hercofina/ Cape Industries	Wilmington/ New Hanover	Methanol spill to containment area.	Material recovered. Did not contaminate soils.	Responsible Party
Pender Plating	Burgaw/ Pender	High levels of chromium in soil and groundwater in a residential area.	DENR completed assessment of contamination in FY11/12. U.S. EPA considering partial removal of contaminated soils.	State
Plaza	Charlotte/ Mecklenburg	Former General Wood Preserving site reported by County as now being used as residential property.	State, county and the U.S. EPA conducted testing of stream, sediment, supply well and soil samples. Initial samples found arsenic present in soils. Additional testing ongoing to determine if natural background concentrations.	State/ County/ U.S. EPA
Pleasant Garden Rd PCE @ 4710	Pleasant Garden/ Guilford	Tetrachloroethene discovered in residential wells.	U.S. EPA has provided affected residential water supply wells with treatments systems.	U.S. EPA
Priddy Property, Winifred	Lawsonville/ Stokes	Residential water supply well contaminated with chlorinated solvents.	DENR installed treatment systems on affected wells. Structural vapor intrusion evaluation is planned.	State
Romie Lane Drum	Rocky Mount/ Edgecombe	200-400 drums of mixed chemicals. Five contained potassium ferrocyanide. Trailers holding the containers leaked. Owner of property bankrupt.	The U.S. EPA completed a removal of the chemicals in FY11/12. No soil contamination remains.	U.S. EPA
RPM Fire	Hudson/ Caldwell	In FY2011-12 fire at a facility that manufactures wood finishing products. Previous fire occurred last fiscal year as well.	DENR inspected. No releases to soils occurred with second fire. Fire suppression materials were contained.	Responsible Party
Springs Road Go Cart Track	Conover/ Catawba	Pond in residential area with creosote-like material.	Elevated levels of volatile and semi-volatile organic compounds in surface water. U.S. EPA is conducting a removal of contaminated soils.	U.S. EPA
Texfi Industries	Fayetteville/ Cumberland	Chlorinated solvent groundwater contaminant plume has migrated from a former textile mill to the city of Fayetteville's water plant property. The city's finished drinking water holding tank sits in contact with contaminated groundwater. The city's drinking water intakes on the Cape Fear River are 450 feet downstream from the Texfi property line.	DENR constructed a subsurface barrier wall in 2001 to prevent further contaminant migration to the holding tank area and installed extraction wells to remove contaminated groundwater in the area of the tank. Concentrations have been reduced. DENR has previously received special appropriations to continue to operate the extraction wells and monitor groundwater on the city's property. DENR is addressing the source area through use of funds from a bankruptcy settlement. Source treatment is underway. Extensive source contamination into clay formations at the site will make source removal/treatment extremely expensive. Additional source treatment conducted near holding tank in May and June 2012.	State

Ulah Battery	Asheboro/ Randolph	Battery dump with lead contaminated soils in a residential area.	Multiple cleanup actions conducted by both DENR and the U.S. EPA in the past. A minor amount of contamination may remain on adjoining furniture plant property. Investigation is ongoing in this area.	State/ U.S. EPA
Valdese Wearever	Valdese/Burke	Approximately 1,800 gallons of water-based polyester resin were lost from 2 storage tanks.	Material and contaminated soils were removed. Post-abatement testing confirmed levels below remediation standards.	Responsible Party
Villa Mobile Home Park	Kannapolis/ Cabarrus	Lead - contaminated soils in a residential area due to battery casing disposal.	The U.S. EPA placed plastic sheeting over the area to prevent exposure. The plastic washed out with a storm. DENR and the U.S. EPA are looking a conducting a removal of contaminated soils.	State/ U.S. EPA
Vinegar Hill	Tabor City/ Columbus	Residential area contaminated with lead from battery casing disposal.	DENR conducted an assessment to determine the extent of contamination. Removal of contaminated soils completed in FY11/12. Site now assigned "No Further Action" status.	State
Watts, Levi Property	Tabor City/ Columbus	Residential area contaminated with lead from battery casing disposal.	DENR conducted removal of contaminated soils. Several properties complete. One owner refuses to allow cleanup. A notice will be placed on property deed after some additional assessment.	State

VI. SUMMARY OF THE INACTIVE HAZARDOUS SITES CLEANUP FUND AND NATIONAL PRIORITIES LIST COST SHARE FUND

Inactive Hazardous Sites Cleanup Fund
Fund 6372
FY 2011-12

Beginning Cash Balance	$618,808
Deposits (FY 2011-12)	
Interest	$4,925
Deposits from Scrap Tire Account	$414,318
No Further Action review fees	$6,500
Texfi appropriation	$50,000
Total Deposits	**$475,743**
Expenditures (FY 2011-12)	
Texfi Industries-Fayetteville source remediation contract	$58,892
Orphan priority site sampling/removal contract/alternate water supplies	$495,887
Total Expenditures	**$554,779**
Ending Cash Balance	**$539,772**
Obligations (Encumbered but not Paid)	
Texfi source remediation contract	$164,109
Orphan priority site sampling/removal contract obligation	$375,663
Total Current Obligations	**$539,772**
Current Effective Cash Balance	**$0**
Orphan Cleanup Cost Requirements (see Chapter II for more details)	
Funds needed for 245 higher priority orphan sites identified	**$161,195,790**
Funds needed for all orphan sites thus identified (315 sites)	**$207,251,739**

Additional Funds from Bankruptcy Proceedings

With the assistance of the Attorney General's Office, DWM has recovered funds for assessment and remediation of sites through bankruptcy proceedings. Payments out of a bankruptcy proceeding must go into a special trust account to be used only for the specific sites identified in the bankruptcy settlement agreement. Others are held in private escrow accounts.

Funds recovered through bankruptcy proceedings in FY2011-12 include the following:
GM -- $20,205 for one site
Spectrum Dyed Yarns -- $121,889 for one site
Pillowtex --An additional $33,700 recovered this year. Total of $243,700 recovered for two sites.

Previous bankruptcy claims where funds remain and work is pending include:
Gilbert & Bennett--$87,912 for one site.
SCM -- $5.3 million for the SCM Corp site in Charlotte.
CMC--$925,000 for one site. $284,984 remains.
CMI -- $1.25 million, $750,000 and $100,000 recovered for three CMI sites. $321,207, $63,294 and $32,759 remain, respectively, in each account.
Safety-Kleen -- $654 has been deposited in the Inactive Hazardous Sites Cleanup Fund.
Chemtura -- $3.75 million for two sites
Lyondell -- $3,709,423 for four sites
Mark IV -- $42,738 for three sites.

Revenue Dedicated to the Pre-Regulatory Landfills*
FY 2011-12

Beginning Cash Balance	$18,774,705
Deposits (FY 2011-12)	
Tax	$9,362,913
Interest	$158,108
Total Deposits	**$9,521,021**
Expenditures (FY 2011-12)	
Contracts	$2,016,252
Local government reimbursement	$78,912
Operating budget	$729,725
Total Expenditures	**$2,824,889**
Ending Cash Balance	**$25,470,837**
Total Current Contract and Local Government Obligations (Encumbrances not yet Paid)	**$19,665,880**
Current Effective Cash Balance	**$5,804,957**

* A portion of a solid waste disposal tax established by the legislature is dedicated to the Pre-Regulatory Landfill Program. Funds are deposited into the Inactive Hazardous Sites Cleanup Fund. Funds are used to contract assessment and cleanup work at uncontrolled pre-regulatory landfills and to fund state staff to implement the program.

National Priorities List Cost-Share Fund
Fund 6375
FY 2011-12

Estimated cost of federal trust fund/N.C. cost share cleanups	$117,867,049
North Carolina's 10 percent cost share for pending/ongoing cleanups	$11,786,705*
Fund disbursements for cost-share payments	$7,026,907
Current balance	$7,857,855
Encumbered amount of the fund balance for cost-share payments	$5,051,157
Effective Cash Balance	**$2,806,699***

* Cleanup cost estimates are not yet available for all sites. The cost share figure will increase as cost estimates become available. Also, other sites may be added to the National Priorities List that will require a state cost share. This account is also used to pay for the state's operation and maintenance obligations at these sites. Aside from interest, the fund has no continuing source of income.

APPENDIX

INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST
2012

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCN000407672	BEACON MANUFACTURING	2425 US HWY 70	SWANNANOA	BUNCOMBE	58.93	groundwater	organics
						groundwater	metals
						soil	metals
						soil	organics
						surface water	organics
NONCD0001179	WILMINGTON IRON WORKS (FORMER)	S WATER, S FRONT, & ORANGE	WILMINGTON	NEW HANOVER	57.88	known/suspected	
NONCD0002734	WILMINGTON FERTILIZER COMPANY	1702 NORTH 6TH STREET	WILMINGTON	NEW HANOVER	57.49	groundwater	inorganics
NONCD0002736	WILMINGTON SHIPYARD (FORMER)	1500 POINT HARBOR RD.	WILMINGTON	NEW HANOVER	57.49	soil	organics
						groundwater	metals
NCD003184710	CAROLINA CREOSOTING CORPORATION	EASTBROOK ROAD	LELAND	BRUNSWICK	57.17	groundwater	organics
						soil	organics
NCD000605303	FEDERAL PAPER BOARD CO., INC.	865 JOHN L RIEGEL RD	RIEGELWOOD	COLUMBUS	56.08	groundwater	organics
						groundwater	metals
NONCD0001250	ALMONT SHIPPING	423 NUTT STREET	WILMINGTON	NEW HANOVER	56.01	groundwater	organics
						soil	organics
						groundwater	inorganics
						groundwater	metals
						soil	metals
NCD050409150	GENERAL ELECTRIC CO/WILMINGTON	3901 CASTLE HAYNE RD	WILMINGTON	NEW HANOVER	55.76	groundwater	organics
NCD981864614	ULAH BATTERY/BATTERY PILES	SR 1219/DINAH RD	ASHEBORO	RANDOLPH	55.64	soil	metals
						soil	acids

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD074511361	AQUAIR CORPORATION	133000 SAM NEELY RD	CHARLOTTE	MECKLENBURG	55.35		
						groundwater	metals
						soil	organics
						groundwater	organics
						soil	metals
NONCD0001098	NATIONAL TEXTILES, LLP	REEP DRIVE	MORGANTON	BURKE	54.94		
						surface water	organics
						soil	organics
						groundwater	organics
NONCD0001646	DUPONT CEDAR CREEK SITE	3216 CEDAR CREEK RD	FAYETTEVILLE	CUMBERLAND	53.70		
						groundwater	organics
						surface water	organics
NCD051745685	HOLDING POND FOR WASTE/USS	500 BROOME RD	GREENSBORO	GUILFORD	53.06		
						soil	organics
						groundwater	organics
						soil	pesticides
						soil	metals
						surface water	metals
						surface water	organics
NCD003229358	SCM PROCTOR-SILEX/WEAREVER	HAY ST	MOUNT AIRY	SURRY	53.02		
						sediment	metals
						sediment	organics
						surface water	metals
						soil	metals
						groundwater	metals
NCD000830646	CAROLINA P&L CO. SUTTON STEAM	HWY 421	WILMINGTON	NEW HANOVER	52.85		
						groundwater	metals
						sediment	metals
						soil	metals
NCN000407584	SOUTHERN METALS RECYCLING, INC	1002 SOUTH FRONT STREET	WILMINGTON	NEW HANOVER	52.56		
						soil	metals
						groundwater	metals
NCD980729677	KNOB CREEK FLYASH DISPOSAL	SR 1540	BREVARD	TRANSYLVANIA	52.53		
						soil	metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD986166692	HARWELL ROAD SEPTIC PIT	HARWELL ROAD	GASTONIA	GASTON	52.37	groundwater	organics
NCD003167780	SPRAGUE ELECTRIC COMPANY	HWY 194	LANSING	ASHE	52.33	soil	metals
						groundwater	organics
						groundwater	metals
NONCD0002857	ABERDEEN FLORIST & GARDEN CENTER	500 S SANDHILLS BLVD	ABERDEEN	MOORE	52.02	groundwater	organics
NCN000407775	ROYSTER FERTILIZER	1690 NE ROYSTER RD	LELAND	BRUNSWICK	52.02	groundwater	metals
						surface water	metals
						soil	organics
						soil	metals
						groundwater	organics
NCD088563242	MONSANTO COMPANY/ROHM & HAAS	CEDAR CREEK RD	FAYETTEVILLE	CUMBERLAND	51.78	groundwater	organics
						sediment	metals
NCN000407333	TRIAD USED AUTO SALES	1520 ALAMANCE CHURCH RD	GREENSBORO	GUILFORD	51.53	soil	metals
						groundwater	organics
						groundwater	metals
						soil	organics
NONCD0001025	TOOMEY PROPERTY	1020 HICKORY GROVE ROAD	SPRINGWOOD	GASTON	51.23	soil	organics
						groundwater	organics
NONCD0001554	COX DODGE (FORMER)	1501 LIPSCOMB ROAD	WILSON	WILSON	51.05	surface water	organics
						groundwater	organics
NCD982117590	CUSTOM PROCESSING AND	1110 SURRETT DRIVE	HIGH POINT	GUILFORD	51.04	groundwater	organics
						groundwater	metals
						soil	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0000016	CMC LANDFILL	EAST MAIN STREET	ELKIN	SURRY	51.02	soil	organics
						groundwater	organics
NCD986178226	TEXFI INDUSTRIES, INC	601 HOFFER DRIVE	FAYETTEVILLE	CUMBERLAND	50.55	soil	organics
						groundwater	organics
NCD093338119	SCM CORP. GLIDDEN COATINGS & RESINS	3926 GLENWOOD DRIVE	CHARLOTTE	MECKLENBURG	50.29	groundwater	organics
NCD986172518	OLD MOUNT HOLLY ROAD PCE SITE	OLD MT HOLLY RD & FREEDOM DR	CHARLOTTE	MECKLENBURG	50.26	groundwater	organics
NONCD0002835	PRIME EQUIPMENT CO	1020 N FRONT ST	WILMINGTON	NEW HANOVER	50.19	groundwater	organics
						soil	organics
NCD003231545	SHERWOOD TREATING CO., INC.	1660 SILAS CREEK PKWAY	WINSTON-SALEM	FORSYTH	49.78	groundwater	metals
						soil	metals
NCD047371794	COASTAL LUMBER CO	934 N CRAVEN ST	NEW BERN	CRAVEN	49.73	groundwater	inorganics
						soil	inorganics
NONCD0002564	ALLEN'S FARM SUPPLY	511 N 3RD ST	WILMINGTON	NEW HANOVER	49.72	groundwater	metals
						groundwater	organics
NONCD0000004	STURGEON CITY PROPERTY	4 COURT STREET	JACKSONVILLE	ONSLOW	49.67	groundwater	organics
						sediment	metals
NCD038551263	TRI-COUNTY COMMUNITY COLLEGE	OFF US 64 E SOUTH OF NC 1	MURPHY	CHEROKEE	49.66	soil	organics
						groundwater	organics
NCD986176444	STROH/CHITTY FARM	OLD MILWAUKEE LANE	WINSTON-SALEM	FORSYTH	49.56	groundwater	organics
						soil	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD000813592	GA-PACIFIC CORP/HDWD SAW	PLYWOOD DR	PLYMOUTH	WASHINGTON	49.53		
						groundwater	organics
						soil	organics
						soil	metals
						sediment	organics
						soil	pesticides
						groundwater	metals
						groundwater	pesticides
						sediment	metals
NONCD0001052	THOMASVILLE FURNITURE	151 SMETHPORT DRIVE	WEST JEFFERSON	ASHE	49.51		
						soil	inorganics
						groundwater	organics
						soil	metals
NONCD0002822	GRAY & CREECH (FRMR)	8024 GLENWOOD AVE	RALEIGH	WAKE	49.37		
						groundwater	organics
NCD000772046	MOBIL OIL CORP/KOCH REFINING	3334 RIVER RD	WILMINGTON	NEW HANOVER	49.07		
						groundwater	organics
						soil	metals
						groundwater	metals
NC0001279710	WOODY WILSON BATTERY/ASHLEY	HWY 211	ASHLEY HEIGHTS	HOKE	49.02		
						soil	metals
						soil	organics
NCD986171379	NEW HAVEN DRIVE TCE	NEW HAVEN DRIVE	GASTONIA	GASTON	48.98		
						groundwater	organics
NCD000770487	JOHNSON CONTROLS GLOBE BATTERY	OLD GREENSBORO ROAD	WINSTON-SALEM	FORSYTH	48.85		
						sediment	metals
						surface water	metals
						soil	organics
NCD046148540	CENTRAL TRANSPORT COMPANY	600 MELYNDA ROAD	CHARLOTTE	MECKLENBURG	48.84		
						sediment	metals
						groundwater	organics
						groundwater	metals
						groundwater	inorganics
						sediment	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCSFN0407074	NC MARITIME MUSEUM	310 FRONT ST	BEAUFORT	CARTERET	48.84		
						sediment	organics
						sediment	metals
						sediment	pesticides
NONCD0002381	REDDICK FUMIGANTS, INC.	3002 WEST MAIN STREET	WILLIAMSTON	MARTIN	48.83		
						groundwater	organics
NCD986175636	ASHE PATTERN SHOP (FORMER)	4411 BEATY ROAD	GASTONIA	GASTON	48.82		
						groundwater	organics
NCD986180909	SHELBY DYEING & FINISHING	2270 SAM LATTIMORE ROAD	SHELBY	CLEVELAND	48.82		
						soil	metals
						soil	organics
						groundwater	metals
						groundwater	organics
NONCD0001233	LOFTIN PROPERTY	2361 LENNOXVILLE RD	BEAUFORT	CARTERET	48.58		
						groundwater	metals
						soil	metals
NCD980729412	CAROLINA TANK CLEANING COMPANY	HWY 68-4 MI N OF I-40	GREENSBORO	GUILFORD	48.53		
						soil	organics
						soil	metals
NONCD0000085	JONES & PRESNELL STUDIO	433 LAWTON ROAD	CHARLOTTE	MECKLENBURG	48.48		
						groundwater	organics
NCD986175628	LEE'S MOTOR WORKS	BEATY ROAD	GASTONIA	GASTON	48.48		
						soil	organics
						surface water	organics
						groundwater	organics
NCD000623223	MARTIN MANUFACTURING PROPERTIES	E MAIN ST US 17	WILLIAMSTON	MARTIN	48.40		
						groundwater	metals
						groundwater	organics
NCD986186518	OLD ATC REFINERY	801 SURRY STREET	WILMINGTON	NEW HANOVER	48.40		
						soil	organics
						soil	metals
						groundwater	metals
						sediment	metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD042269134	SOUTHERN SCREW/FARLEY METALS	1225 BARKLEY RD	STATESVILLE	IREDELL	48.40		
						groundwater	organics
						soil	metals
						soil	bases
						groundwater	cyanide
						groundwater	metals
NCD981474158	SWEETEN CREEK DRUM SITE	115 SWEETEN CREEK ROAD	ASHEVILLE	BUNCOMBE	48.40		
						soil	metals
NCD041230418	AMP INCORPORATED	3900 REIDSVILLE ROAD	WINSTON-SALEM	FORSYTH	48.35		
						soil	metals
						surface water	metals
						sediment	metals
						soil	cyanide
						sediment	cyanide
						soil	organics
NCD986188027	CHAMPION LANDFILL #3	SR 1550 140	CANTON	HAYWOOD	48.25		
						soil	metals
NONCD0001185	CSX-NUTT ST	515 NUTT ST	WILMINGTON	NEW HANOVER	48.21		
						groundwater	organics
						groundwater	metals
NCD986185411	OLD WESTERN NC FAIRGROUNDS	BTWN US 176 & SOUTHER RR	EAST FLAT ROCK	HENDERSON	48.18		
						soil	pesticides
						soil	organics
						groundwater	metals
						groundwater	organics
NCD980600449	SED, INC. RADAR ROAD	500 RADAR ROAD	GREENSBORO	GUILFORD	48.18		
						soil	organics
NCD003163888	HENREDON FURNITURE	HENREDON RD	MORGANTON	BURKE	48.17		
						groundwater	organics
						soil	organics
NONCD0002368	EASTERN CAR CARE (FRMR)	703 E MAIN ST	MURFREESBORO	HERTFORD	48.10		
						groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD041414780	FIELDCREST MILLS INC./NC FINISHING	US 29/70 N	SPENCER	ROWAN	48.07	soil	organics
						groundwater	metals
						soil	metals
						groundwater	organics
NCD091572073	NATIONAL STARCH & CHEMICAL	2271 ANDREW JACKSON HWY	LELAND	BRUNSWICK	48.04	groundwater	organics
NCD045924032	WEST POINT PEPPERELL LUMBERTON	CHESTNUT ST EXTN	LUMBERTON	ROBESON	48.02	soil	organics
						groundwater	organics
NCD045924065	AMF/HATTERAS YACHTS	110 N GLENBURNE ROAD	NEW BERN	CRAVEN	48.00	groundwater	organics
NCD065288847	CF NITROGEN, INCORPORATED	HWY 45	WINTON	HERTFORD	47.99	soil	metals
						groundwater	metals
NONCD0001843	HERCULES	9 DAVIS DRIVE	DURHAM	DURHAM	47.93	surface water	organics
						groundwater	organics
NCD024477556	WINSTON CONTAINER COMPANY	4732 MORRIS FIELD RD	CHARLOTTE	MECKLENBURG	47.89	soil	organics
NONCD0001094	ALLISON MANUFACTURING CO	930 OLD CHARLOTTE ROAD	ALBEMARLE	STANLY	47.87	groundwater	organics
						soil	organics
NONCD0000023	CAROLINA P&L CO. FAYETTEVILLE	CUMBERLAND RD & OWEN DR	FAYETTEVILLE	CUMBERLAND	47.78	soil	organics
						groundwater	organics
						surface water	organics
NONCD0001058	ELECTRONICS COMPONENT	200 ELECTRONICS PARKWAY	BURGAW	PENDER	47.78	groundwater	organics
NONCD0002852	CLAYTON FARMS	1833 LOOP RD	CLAYTON	JOHNSTON	47.63	groundwater	pesticides/herbicides
						soil	pesticides/herbicides

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD003448610	GALVAN INDUSTRIES, INC.	HWY 49	HARRISBURG	CABARRUS	47.62		
						groundwater	metals
						soil	metals
NONCD0002420	APAC MAINTENANCE SHOP (FRMR)	240 CENTER ST	JACKSONVILLE	ONSLOW	47.59		
						soil	metals
						groundwater	metals
NCN000409881	PAYNE RD SOLVENTS	105 PAYNE RD	BESSEMER CITY	GASTON	47.59		
						soil	organics
						groundwater	organics
NONCD0001200	COASTLINE INN PROPERTY	503 NUTT ST	WILMINGTON	NEW HANOVER	47.44		
						groundwater	organics
						groundwater	metals
NCD990883001	MONARCH FURNITURE CORPORATION	300 SCIENTIFIC ST	JAMESTOWN	GUILFORD	47.40		
						soil	metals
						groundwater	metals
NONCD0001550	COTTMAN TRANSMISSION	145-147 S. COLLEGE ROAD	WILMINGTON	NEW HANOVER	47.30		
						soil	organics
						groundwater	organics
NCD986180917	SPANN PROPERTY	US HIGHWAY 25	HENDERSONVILLE	HENDERSON	47.26		
						known/suspected	
NONCD0001029	R & D LAMINATORS INC	HOLLOMAN ROAD (SR 1187)	AHOSKIE	HERTFORD	47.21		
						groundwater	organics
NCD024895864	STEWART-WARNER CORP/BASSICK-	2941 INDIANA AVE	WINSTON-SALEM	FORSYTH	47.19		
						soil	organics
NCD037160439	TOASTMASTER, INCORPORATED	OLD LAUREL HILL CHURCH RD	LAURINBURG	SCOTLAND	47.08		
						groundwater	cyanide
						groundwater	organics
						soil	organics
						groundwater	metals
						soil	metals
						soil	cyanide

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001952	KERR FACILITY - AHOSKIE	228JOHNNY MITCHELL RD.	AHOSKIE	HERTFORD	46.99		
						groundwater	organics
NCD986176030	RHODERIA DRIVE WELLS	LAKEWOOD & RHODERA DRIVE	STALLINGS	UNION	46.98		
						soil	metals
						groundwater	organics
NCD044444735	CROMPTON & KNOWLES CORP.	SPENCER MT RD	LOWELL	GASTON	46.97		
						soil	organics
						soil	metals
NCD986231967	TOM SADLER ROAD WELLS	TOM SADLER RD	CHARLOTTE	MECKLENBURG	46.92		
						soil	metals
						groundwater	organics
						groundwater	metals
NCD003183571	WINTERVILLE MACHINE WORKS, INC.	209 S MILL ST	WINTERVILLE	PITT	46.90		
						soil	metals
NCN000407188	US 1-15/501 ABERDEEN	517 S SANDHILLS BLVD	ABERDEEN	MOORE	46.88		
						soil	organics
						soil	metals
						sediment	metals
						sediment	organics
						groundwater	organics
						surface water	organics
NONCD0000081	TRITON, INC	1610 SOUTH WARD BLVD	WILSON	WILSON	46.84		
						groundwater	metals
						groundwater	organics
NCD067187302	FULFLEX	500 AIR BOSS PKWY	SCOTLAND NECK	HALIFAX	46.73		
						groundwater	organics
NCD003233673	HOOVER REPAIR SHOP	461 N SOUTH STREET SR1669	MT AIRY	SURRY	46.69		
						groundwater	metals
						groundwater	cyanide
						soil	cyanide
						soil	metals
NCD980518211	IRT/IBM CORPORATION	4101 S I-85	CHARLOTTE	MECKLENBURG	46.67		
						groundwater	metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0002874	MOHAWK-KARASTAN	2007 DICKINSON AVE	GREENVILLE	PITT	46.67		
						soil	organics
						groundwater	metals
						soil	metals
NONCD0002779	APAC-CASTLE HAYNE ASPHALT PLANT	4909 N COLLEGE RD	CASTLE HAYNE	NEW HANOVER	46.65		
						soil	organics
						groundwater	organics
NCD980842470	KAISER FERTILIZER PLANT	INTSEC HWY 87 & SR 1870	RIEGELWOOD	COLUMBUS	46.65		
						groundwater	inorganics
						groundwater	metals
						groundwater	organics
NONCD0001156	CLEAN-CLEAN DRY CLEANERS	2408 SUNSET AVE	ROCKY MOUNT	NASH	46.63		
						groundwater	organics
						soil	organics
NCD003197704	SALT WOOD PRODUCTS, INC.	SR 1005	COVE CITY	CRAVEN	46.59		
						groundwater	organics
						soil	metals
						groundwater	metals
						soil	organics
NONCD0002861	UNION RIDGE ROAD SITE	132 UNION RIDGE RD	BURLINGTON	ALAMANCE	46.59		
						groundwater	organics
NONCD0001155	D&G PROPERTIES-SLAUGHTERHOUSE	ROYSTER RD	NAVASSA	BRUNSWICK	46.57		
						groundwater	metals
						soil	metals
NCD072012354	SINGER CO/FURNITURE DIV WASHINGTON	STATE ROAD 1175	CHOCOWINITY	BEAUFORT	46.57		
						groundwater	pesticides
						groundwater	metals
						sediment	organics
						soil	organics
						groundwater	organics
NONCD0001690	CITY OF GOLDSBORO MAINTENANCE	1601 N CLINGMAN ST	GOLDSBORO	WAYNE	46.56		
						groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD093137636	GENERAL WOOD PRESERVING CO., INC.	HWY 74/76	LELAND	BRUNSWICK	46.56	groundwater	organics
						soil	organics
NONCD0001886	HYDE COUNTY COURTHOUSE	30 OYSTER CREEK RD	SWAN QUARTER	HYDE	46.56	groundwater	pesticides/herbicides
						soil	pesticides/herbicides
NCD041519364	TEXASGULF CHEMICALS COMPANY	HWY 306 NORTH	AURORA	BEAUFORT	46.56	sediment	organics
						sediment	metals
						soil	pesticides
						soil	organics
						surface water	metals
						groundwater	pesticides
						groundwater	organics
NCD003184249	UNION CARBIDE CORP/EVEREADY	264 BYPASS-EVANS ST EXTN	GREENVILLE	PITT	46.52	groundwater	organics
						groundwater	metals
NC5210022906	USA RESERVE XVIII AIRBORNE CORPS	405 FISHER ST	MOREHEAD CITY	CARTERET	46.51	known/suspected	
NONCD0001049	LEXINGTON FURNITURE IND. PLNT #7	178 LFI COMPLEX LANE	LEXINGTON	DAVIDSON	46.43	groundwater	organics
						groundwater	metals
NCD980844336	UNION CARBIDE BATTERY	5400 HOVIS ROAD	CHARLOTTE	MECKLENBURG	46.30	soil	metals
						surface water	organics
NONCD0001186	CARR MILL MALL	200 N GREENSBORO ST	CARRBORO	ORANGE	46.28	groundwater	organics
NONCD0001778	GLEN RAVEN MILLS (FORMER)	142 GLEN RAVEN ROAD	GLEN RAVEN	ALAMANCE	46.24	groundwater	metals
						groundwater	organics
NCN000409811	ELECTRIC MOTOR & TRANSFORMER	1900 S SANDERS ST	RALEIGH	WAKE	46.21	groundwater	organics
						soil	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD980557839	IDEAL BASIC INDS/PLANT MARL	HOLLY SHELTER ROAD	CASTLE HAYNE	NEW HANOVER	46.21	groundwater	organics
						soil	metals
NONCD0001128	RESOLUTION PACKAGING	468 CAROLINA AVE	MARION	MCDOWELL	46.21	groundwater	metals
NONCD0001023	HEAVY EQUIPMENT SCHOOL	HEAVY EQUIPMENT ROAD	CHARLOTTE	MECKLENBURG	46.20	groundwater	organics
NCSFN0406906	OLD STAKE ROAD	OLD STAKE ROAD	CHADBOURNE	COLUMBUS	46.17	groundwater	metals
						soil	metals
NCD003149663	RADIATOR SPECIALTY COMPANY	1900 WILKINSON BLVD	CHARLOTTE	MECKLENBURG	46.16	soil	metals
						soil	organics
						sediment	organics
						groundwater	organics
						sediment	metals
NCD049772023	H & S PROCESSORS, INC.	NC HIGHWAY 150 WEST	LINCOLNTON	LINCOLN	46.11	groundwater	organics
NCD003216462	UNION CARBIDE CORP/EVEREADY	800 ALBEMARLE RD	ASHEBORO	RANDOLPH	45.97	soil	organics
						groundwater	organics
NONCD0002555	WHITEVILLE BUMPER & GLASS (FORMER)	824 WEST JEFFERSON STREET	WHITEVILLE	COLUMBUS	45.86	soil	metals
						groundwater	organics
						soil	organics
NONCD0001112	OLD JOHN'S RIVER ROAD DUMP	MILE MARKER 296.1, BR PKWY	BLOWING ROCK	WATAUGA	45.81	soil	organics
						soil	metals
NCD003213030	DOUGLAS BATTERY MANUFACTURING	500 BATTERY DR	WINSTON-SALEM	FORSYTH	45.69	groundwater	metals
NCD144192606	PARKER-ZENITH	TAYLOR STREET	ABERDEEN	MOORE	45.67	groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001074	OLD FORD BLDG	FIFTH ST	TABOR CITY	COLUMBUS	45.62	soil	metals
						soil	organics
						groundwater	metals
NCD981015746	CAROLINA ALUMINUM/HERBERT	SR 1125	ROPER	WASHINGTON	45.33	soil	organics
NCD003167988	MARANTZ PIANO CO INC/ANEVKA, INC	HWY 64/70 E	MORGANTON	BURKE	45.30	groundwater	organics
						soil	metals
						groundwater	metals
						soil	organics
NCD024600579	SUPERIOR PRODUCTS COMPANY	HWY 70A	GREENSBORO	GUILFORD	45.25	soil	metals
NCN000409779	WAYNE AGRICULTURAL WORKS	700 S JOHN ST	GOLDSBORO	WAYNE	45.25	groundwater	metals
						groundwater	organics
NONCD0001485	CHATHAM MILLS, INC.	480 HILLSBORO STREET	PITTSBORO	CHATHAM	45.21	groundwater	organics
NONCD0001174	ARROW LAUNDRY	4735 MONROE RD	CHARLOTTE	MECKLENBURG	45.15	groundwater	organics
						soil	organics
NONCD0002277	PAZIUK WAREHOUSE	710 SUNNYVALE DRIVE	WILMINGTON	NEW HANOVER	45.15	groundwater	organics
						soil	organics
NCD981473150	CHERRY MT STREET DRUM	602 CHERRY MOUNTAIN	FOREST CITY	RUTHERFORD	45.07	soil	metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCN000407830	CLOROX CHEMICAL	800 GESCO ST	CHARLOTTE	MECKLENBURG	45.07		
						soil	organics
						surface water	pesticides
						surface water	organics
						soil	pesticides
						soil	metals
						sediment	pesticides
						sediment	organics
						sediment	metals
						surface water	metals
NONCD0001022	GIBBS ELECTROPLATING - OLD LOCATION	2229 N DAVIDSON	CHARLOTTE	MECKLENBURG	45.07		
						soil	organics
						soil	metals
						groundwater	metals
						groundwater	organics
NCD980728745	OSHIELDS FLY ASH	SR 1510	BREVARD	TRANSYLVANIA	44.80		
						known/suspected	
NCD003528825	FIELDCREST MILLS INC.	WALPAT RD	SMITHFIELD	JOHNSTON	44.79		
						groundwater	organics
NCD066327313	FINETEX, INC.	I85 HACKETT ST EXIT	SPENCER	ROWAN	44.77		
						soil	organics
						groundwater	organics
NONCD0001011	JUNG CORPORATION	718 INDUSTRIAL PARK AVE	ASHEBORO	RANDOLPH	44.77		
						groundwater	organics
NONCD0001169	LIBERTY FABRICS (FORMER)	US 64	JAMESVILLE	MARTIN	44.72		
						groundwater	organics
NCD986228054	KANNAPOLIS PCE SPILL	ENOCHVILLE ROAD	KANNAPOLIS	CABARRUS	44.71		
						groundwater	organics
NCD981863228	SCHERER, R.P.	2021 E. ROOSEVELT BLVD.	MONROE	UNION	44.71		
						soil	organics
						groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD002560159	THIELE-ENGDAHL, INCORPORATED	1100 FAIRCHILD RD	WINSTON-SALEM	FORSYTH	44.71	soil	metals
						soil	organics
NCD990734055	HERCOFINA/CAPE INDUSTRIES	4600 HWY 421 N	WILMINGTON	NEW HANOVER	44.62	soil	organics
						soil	metals
						groundwater	organics
						groundwater	metals
NONCD0002792	MARSHALLBERG BOAT YARD	1290 & 1295 MARSHALLBERG RD	MARSHALLBERG	CARTERET	44.57	groundwater	organics
						soil	metals
NONCD0002623	RED APPLE MARKETS #40 (FMR)	925 E MEMORIAL DR	AHOSKIE	HERTFORD	44.52	groundwater	organics
NCD093334969	S & S METALS RECYCLING COMPANY	SHORTCUT ROAD/SR 2455	GOLD HILL	CABARRUS	44.49	surface water	metals
						soil	metals
NONCD0000060	WATTS REGULATOR-GENERAL AIDES	WITHROW ROAD	FOREST CITY	RUTHERFORD	44.49	soil	metals
NCD982080152	PEE DEE TIMBER CO	230 W BIZZELL ST	LAURINGBURG	SCOTLAND	44.48	soil	metals
						surface water	metals
NONCD0001116	REPUBLIC SERVICES OF NC	312 JACK SHERMAN RD	ROUGEMONT	PERSON	44.48	groundwater	organics
NCD042091215	RJR TECH COMPANY	841 AVOCA FARM RD	MERRY HILL	BERTIE	44.48	soil	organics
NONCD0000802	LES MYERS PARK	LAWNDALE AVENUE EXT.	CONCORD	CABARRUS	44.42	soil	metals
NONCD0002228	OAK ISLAND POLICE DEPT.	4621 E. OAK ISLAND DRIVE	OAK ISLAND	BRUNSWICK	44.36	soil	organics
						groundwater	pesticides/herbicides
						groundwater	organics
						soil	pesticides/herbicides

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD981928088	TEXFI INDUSTRIES, INC/NEW BERN	SR 1317/BOSCH STREET	NEW BERN	CRAVEN	44.30	groundwater	organics
NC0000195743	JIMMY GREEN METALS	BARN HILL CHURCH ROAD	NASHVILLE	NASH	44.29	soil	metals
NCD084167444	STANADYNE, INC/DIESEL SYSTEMS	405 WHITE ST	JACKSONVILLE	ONSLOW	44.22	soil	metals
						soil	organics
NCD980557631	LIVEWIRE ELEC CO/CALIFORNIA SPRAY	1004 SOUTH GEORGE STREET	GOLDSBORO	WAYNE	44.16	soil	pesticides/herbicides
						groundwater	pesticides/herbicides
NCD006390561	AKZO NOBLE COATINGS, INC.	1431 PROGRESS ST	HIGH POINT	GUILFORD	44.13	soil	organics
						groundwater	organics
NONCD0002838	WACCAMAW TRANSPORT (FORMER)	1106 S 2ND ST	WILMINGTON	NEW HANOVER	44.12	groundwater	organics
						groundwater	metals
						soil	organics
NONCD0001178	PACKER PROPERTY	US 701 & JEWEL ST	WHITEVILLE	COLUMBUS	43.99	groundwater	organics
NONCD0001432	THE CAPE GOLF COURSE	535 THE CAPE BLVD	WILMINGTON	NEW HANOVER	43.99	groundwater	metals
						groundwater	organics
NONCD0001054	WILLIAMS AUTO CENTER	401 D STREET	BRIDGETON	CRAVEN	43.93	groundwater	metals
						soil	organics
						soil	metals
NONCD0000038	AYCOCK PROPERTY	SR 1162 & 1103	WILSON	WILSON	43.92	groundwater	organics
NONCD0002711	WESTPOINT STEVENS	AIRPORT ROAD	WAGRAM	SCOTLAND	43.92	groundwater	organics
NCD003164464	UNIROYAL INC/UNIROYAL CHEMICAL	214 W RUBY AVE	GASTONIA	GASTON	43.79	soil	organics

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0002543	STEVCOKNIT FABRICS COMPANY	601 WILMINGTON ROAD	WALLACE	DUPLIN	43.75	groundwater	organics
						soil	organics
NONCD0002777	APAC-GOLDSBORO ASPHALT PLANT	2421 ARRINGTON BRIDGE RD	GOLDSBORO	WAYNE	43.72	groundwater	organics
						soil	organics
NONCD0001922	ALKALI SCREEN PRINTING	6420 AMSTERDAM WAY	WILMINGTON	NEW HANOVER	43.48	known/suspected	
NCD009305699	GTE SYLVANIA, INC.	INDUSTRIAL PARK DR	SMITHFIELD	JOHNSTON	43.47	soil	organics
						groundwater	organics
NONCD0001045	FREIGHTLINER	1800 N MAIN ST	MT HOLLY	GASTON	43.38	groundwater	metals
						soil	metals
NCD053487765	STRATFORD METAL FINISHINGS, INC.	807 S MARSHALL ST	WINSTON-SALEM	FORSYTH	43.38	soil	metals
NCN000410280	GREAT LAKES CARBON CORPORATION	307 JAMESTOWN ROAD	MORGANTON	BURKE	43.36	groundwater	metals
						groundwater	organics
NONCD0001273	ANSELL HEALTHCARE	2906 ANACONDA ROAD	TARBORO	EDGECOMBE	43.34	groundwater	organics
						soil	organics
NCD062571658	HONEYWELL MICRO SWITCH DIV.	1 HICKORY DRIVE	MARS HILL	MADISON	43.33	soil	metals
						soil	organics
NCD082363102	HELENA CHEMICAL COMPANY	HARRY MALLEY RD	LAURINBURG	SCOTLAND	43.32	soil	metals
						groundwater	pesticides
NONCD0001046	B&H RECYCLERS	7526 US 74 W	POLKTON	ANSON	43.31	soil	organics
						groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD060306727	RICHARDS WC COMPANY, INC.	101 EAST MAPLE STREET	ABERDEEN	MOORE	43.31	soil	organics
						soil	metals
NONCD0002531	STANLEY FASTENING	2903 LEE AVE	SANFORD	LEE	43.31	groundwater	organics
NCD986211274	STONEY FORK CREEK DRUM DUMP SITE	MT. ZION ROAD	DEEP GAP	WILKES	43.31	known/suspected	
NONCD0001168	RIVER CITY CONSTRUCTION CO	3534 CHERRY RUN RD	WASHINGTON	BEAUFORT	43.30	soil	organics
						groundwater	metals
						groundwater	organics
						soil	metals
NCD986232676	ROCK-TENN MARION FOLDING	33 BURGIN ST	MARION	MCDOWELL	43.30	groundwater	metals
NONCD0001491	COUSINS PERSONAL MINI-STORAGE	723 HWY 117 N BYPASS	GOLDSBORO	WAYNE	43.19	groundwater	metals
						soil	metals
NONCD0001564	CRIBBS HOBBY	6225 CAROLINA BEACH RD.	WILMINGTON	NEW HANOVER	43.19	groundwater	organics
NONCD0001138	DEUTSCH RELAYS	2021 GARDNER DR	WILIMINGTON	NEW HANOVER	43.19	groundwater	organics
NONCD0001095	MOSES CONE MEMORIAL PARK	BLUE RIDGE PKWY	BLOWING ROCK	WATAUGA	43.19	soil	metals
NCD981022072	BETTIS PROPERTY	1/2 MI. E OF BETTIS RD &	EARL	CLEVELAND	43.16	known/suspected	
NONCD0000027	MEADOWVIEW ROAD	MEADOWVIEW ROAD	GREENSBORO	GUILFORD	43.04	groundwater	organics
NCD986172617	FORBES ROAD WELLS/RAUCH IND	2408 FORBES ROAD	GASTONIA	GASTON	43.02	soil	organics
						groundwater	organics
						surface water	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001102	ENQUIRER JOURNAL	500 W JEFFERSON ST	MONROE	UNION	42.99	groundwater	organics
NONCD0001346	BETTER LOOK GARMENT CARE	622 SE GREENVILLE BLVD	GREENVILLE	PITT	42.94	soil groundwater	organics organics
NONCD0001677	ELECTRIC MOTOR SERVICE	US HYW 13 SOUTH	AHOSKIE	HERTFORD	42.94	groundwater	organics
NONCD0002553	STONEVILLE FURNITURE COMPANY	525 SOUTH HENRY STREET	STONEVILLE	ROCKINGHAM	42.93	groundwater soil	organics organics
NONCD0002798	TOWN AND COUNTRY CLEANERS	617 WASHINGTON ST	WILLIAMSTON	MARTIN	42.91	soil groundwater	organics organics
NCD003230836	DUKE REFINING CORPORATION	2020 JARRELL STREET	HIGH POINT	GUILFORD	42.87	sediment soil groundwater	organics organics organics
NONCD0002542	STEVENS CLEANERS	IONA AND MAIN STREET	FAIRMONT	ROBESON	42.87	soil groundwater	organics organics
NONCD0001113	SOUTHERN STATES (FORMER)	125 LINE AVE	GREENVILLE	PITT	42.81	groundwater soil	pesticides organics
NONCD0000025	RANGE ROAD BURN SITE	RANGE ROAD	BUTNER	GRANVILLE	42.80	soil soil	metals organics
NONCD0001090	OLD MILL BLDG	301 FOURTH AVE EAST	HENDERSONVILLE	HENDERSON	42.75	groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCN000407197	LEARY BROTHERS STORAGE (FORMER)	VIRGINIA & BROAD STREET	EDENTON	CHOWAN	42.74		
						groundwater	metals
						groundwater	organics
						soil	metals
						soil	organics
NONCD0001016	ROYSTER-CLARK FERTILIZER PLANT	1598 HINES RD	OAK CITY	MARTIN	42.74		
						soil	organics
						groundwater	pesticides
						groundwater	inorganics
NCD000615872	AMP INCORPORATED	1260 SHANNON-BRADLEY RD	GASTONIA	GASTON	42.72		
						soil	organics
						groundwater	metals
						soil	metals
NCD981014517	DYNATECH	TOOMEY AVE	CHARLOTTE	MECKLENBURG	42.60		
						groundwater	metals
						sediment	metals
NONCD0001105	WETSIG YACHTS	4022 MARKET STREET	WILMINGTON	NEW HANOVER	42.60		
						soil	metals
						groundwater	metals
NCD130708126	CONSOLIDATED WAREHOUSE	8300 MOORES CHAPEL RD	CHARLOTTE	MECKLENBURG	42.58		
						soil	organics
						surface water	organics
						groundwater	organics
NCD003198967	GENERAL ELECTRIC CO/CAROLINA	900 N GEORGE ST	GOLDSBORO	WAYNE	42.53		
						groundwater	metals
NCD051853547	AUSTIN FOODS	500 BLOCK E CHATHAM ST	CARY	WAKE	42.43		
						soil	pesticides
						soil	organics
						groundwater	organics
						groundwater	pesticides
NONCD0001330	BECKER BUILDERS SUPPLY COMPANY	4614 MARKET STREET	WILMINGTON	NEW HANOVER	42.43		
						groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001193	COASTAL DRY CLEANERS	1170 HENDERSON DR	JACKSONVILLE	ONSLOW	42.43	groundwater	organics
						soil	organics
NONCD0001430	DELL MOORE PROPERTY	5815 HILLSBOROUGH ST	RALEIGH	WAKE	42.43	soil	organics
						groundwater	organics
NCN000409865	FORSHAW CHEMICALS	650 STATE ST	CHARLOTTE	MECKLENBURG	42.43	soil	pesticides
						surface water	pesticides
						surface water	metals
						soil	organics
						soil	metals
						surface water	organics
NONCD0001117	HILLSIDE SHOPPING CENTER	1077 FAYETTEVILLE ST	ASHEBORO	RANDOLPH	42.43	groundwater	organics
NONCD0001475	USGS LORAN STATION CAROLINA	9001 RIVER RD	WILMINGTON	NEW HANOVER	42.32	known/suspected	
NCSFN0407140	CARDINAL CONTAINER SERVICES	138 WALSER ROAD	LEXINGTON	DAVIDSON	42.30	groundwater	organics
						groundwater	metals
NCN000409854	ROMATIC MANUFACTURING	402 E ROSE ST	SANFORD	LEE	42.27	sediment	metals
						sediment	organics
NONCD0002124	WELDON MILL (FRMR)	E 11TH ST & SYCAMORE ST	WELDON	HALIFAX	42.15	known/suspected	
NC0002374445	GASTONIA INDUSTRIAL TRUCK	HEMPHILL ROAD	GASTONIA	GASTON	42.08	groundwater	organics
NCD043711977	CHEMICAL LEAMAN TANK LINES, INC.	6600 WEST MARKET STREET	GREENSBORO	GUILFORD	42.05	groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001072	J & C DYEING	1000 WEST GROVER STREET	SHELBY	CLEVELAND	41.98	soil	metals
						groundwater	organics
						groundwater	metals
NCD002571438	ABC ENGRAVERS	724 NORTH I-85	CHARLOTTE	MECKLENBURG	41.91	groundwater	organics
						groundwater	metals
						soil	metals
NONCD0002880	PATCHES BODY SHOP	1903 E GREEN ST	HIGH POINT	GUILFORD	41.91	groundwater	organics
NCD981932023	TARBORO-EDGECOMBE AIRPORT	HWY 44	TARBORO	EDGECOMBE	41.81	soil	organics
NCN000407243	WOODY'S SALVAGE YARD	4139 CLINTON RD	VANDER	CUMBERLAND	41.80	known/suspected	
NCD003155587	SCOTT AVIATION OF MONROE/TOOL SERV	309 W. CROWELL ST	MONROE	UNION	41.73	soil	metals
						groundwater	organics
NCD981031578	RAINBOW DRIVE BATTERY	SR 1646	KANNAPOLIS	CABARRUS	41.66	soil	metals
NONCD0001248	UNITED SALVAGE	BUTTERCUP LANE	ROANOKE RAPIDS	HALIFAX	41.62	soil	metals
NCD981030893	MUSIC CLUB PESTICIDE SITE	SE QUADRANT OF INT US 17	WILLIAMSTON	MARTIN	41.61	soil	pesticides
NCD991278730	SQUIBB E R & SONS	FLOWERS RD	KENLY	JOHNSTON	41.61	groundwater	organics
NONCD0002790	RIVERS JUNKYARD	5501 DOGWOOD ST	WINNABOW	BRUNSWICK	41.52	known/suspected	
NONCD0000073	H. M. WADE FURNITURE	SOUTH GRAHAM STREET	CHARLOTTE	MECKLENBURG	41.50	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001125	RALEIGH TTA-DILLON PARCEL A	102 S WEST ST	RALEIGH	WAKE	41.50		
						soil	organics
						soil	metals
						soil	inorganics
						groundwater	organics
NONCD0001126	RALEIGH TTA-DILLON PARCEL B	S WEST ST	RALEIGH	WAKE	41.50		
						groundwater	organics
						soil	organics
NCD982124646	GREGSON FUNITURE INDUSTRIES	206 E FRAIZER AVENUE	LIBERTY	RANDOLPH	41.48		
						soil	metals
						groundwater	metals
						soil	organics
						surface water	metals
NCD003195161	CORNING GLASS WORKS	3900 ELECTRONICS DRIVE	RALEIGH	WAKE	41.47		
						known/suspected	
NC0002178580	VC CHEMICAL-ALMONT WORKS	2400 US 421 NORTH	WILMINGTON	NEW HANOVER	41.47		
						soil	metals
NCD980557854	FMC/NIAGARA PESTICIDES	OLD ST HWY 11 NORTH	AYDEN	PITT	41.44		
						soil	organics
						soil	pesticides
NONCD0001490	KINDER MORGAN/CHEMSERV	2005 N 6TH STREET	WILMINGTON	NEW HANOVER	41.42		
						groundwater	inorganics
						groundwater	metals
						soil	metals
NONCD0001127	RALEIGH TTA-DILLON PARCEL C	510 & 602 W MARTIN ST	RALEIGH	WAKE	41.40		
						soil	organics
						groundwater	organics
NCD055165609	PANTASOTE INC. FILM/COMPOUND DIV.	1508 S CENTER ST	HICKORY	CATAWBA	41.38		
						groundwater	metals
						groundwater	organics
						soil	metals
NONCD0001176	MURFREESBORO VENEER	307 N 2ND ST	MURFREESBORO	HERTFORD	41.37		
						groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001347	ZAR PROPERTY	2371 LENNOXVILLE RD	BEAUFORT	CARTERET	41.24	soil	metals
NCD991278755	MARTIN'S BATTERY SALVAGE, INC.	ASHLAND RD	KANNAPOLIS	CABARRUS	41.22	soil	metals
NONCD0000047	MEADS AIRFIELD PESTICIDES	SR 1100	WEEKSVILLE	PASQUOTANK	41.22	soil	pesticides
NCD986171445	BENFIELD CHEMICALS	OLD CANTON CLYDE HWY	CANTON	HAYWOOD	41.20	soil	organics
						soil	metals
						soil	pesticides
NONCD0001099	C & L SURPLUS	1868 HWY 64 W	HAYESVILLE	CLAY	41.20	sediment	metals
NCD980848782	MADISON COUNTY CYANIDE SITE	RT 2/HWY 63		MADISON	41.20	known/suspected	
NCD062664883	REINCO CHEMICAL COMPANY	EAST 11 ST	ROANOKE RAPIDS	HALIFAX	41.20	groundwater	organics
						soil	organics
NCD024817827	HENREDON FURNITURE	ALTAPASS ROAD	SPRUCE PINE	MITCHELL	41.19	soil	organics
						soil	metals
NCD986195154	PENDER PLATING COMPANY	107 EAST HAYES ST.	BURGAW	PENDER	41.19	soil	metals
NONCD0002319	POLYLOK, INC./WELLINGTON SEARS	3006 ANACONDA RD.	TARBORO	EDGECOMBE	41.09	soil	organics
						groundwater	organics
NONCD0001295	HOLT STREET DUMP	HOLT ST	MEBANE	ALAMANCE	41.08	soil	metals
						groundwater	metals
						groundwater	organics
						soil	organics
NONCD0002522	JIFFY MART	1801 N RALEIGH ST	ROCKY MOUNT	EDGECOMBE	41.04	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD001704980	WILMINGTON BRANCH/BORDEN/SMITH	NAVASSA ROAD	NAVASSA	BRUNSWICK	40.81	groundwater	organics
						soil	organics
NONCD0001107	CONE MILLS - FLORENCE PLANT	FLORENCE & DEPOT RDS	FOREST CITY	RUTHERFORD	40.75	groundwater	organics
						soil	organics
NONCD0001077	CATAWISSA LUMBER CO	301 LOCUST ST	WEST JEFFERSON	ASHE	40.72	groundwater	organics
NONCD0002815	CAROLINA CHEMICAL CORP (FORMER)	6600 WARD BLVD	WILSON	WILSON	40.71	groundwater	pesticides/herbicides
						soil	metals
						groundwater	organics
						soil	pesticides/herbicides
NCD075570820	PLYMOUTH WOOD TREATING COMPANY	N HWY 45	PLYMOUTH	WASHINGTON	40.68	groundwater	metals
NCD982119463	DAYCO LANDFILL CRYME COVE ROAD	SR 1134	WAYNESVILLE	HAYWOOD	40.52	soil	organics
NCD981927908	KIDD LANE BATTERY DISPOSAL	3607 KIDD LANE	CHARLOTTE	MECKLENBURG	40.49	soil	metals
NCD003235066	NEW AGE FURNITURE CO/MILLER TOOL	PROSPECT STREET	LEXINGTON	DAVIDSON	40.42	known/suspected	
NCD082362989	TUNGSTEN QUEEN MINE/ATLAS MINE	SR 1348	TOWNSVILLE	VANCE	40.34	soil	metals
NONCD0001297	CRADY COURT SITE	7769 CRADY CT	STANTONSBURG	WILSON	40.20	groundwater	metals
						groundwater	organics
NONCD0000031	INDEPENDENCE MALL OUTPARCEL	OLEANDER & FORDHAM RDS	WILMINGTON	NEW HANOVER	40.19	groundwater	organics
NONCD0002378	REA CONSTRUCTION-ROCKY MOUNT	SR 1401	ROCKY MOUNT	EDGECOMBE	40.19	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD980838379	ROWE CORP PROPERTY/BOULIGNY SITE	433 W MOREHEAD ST	CHARLOTTE	MECKLENBURG	40.18	groundwater	metals
						soil	metals
NCD986172492	CRESTLINE CONTAMINATED WELLS	ROUTE 211	ABERDEEN	MOORE	40.12	groundwater	organics
						groundwater	metals
NONCD0001124	RALEIGH TTA-WILSON PARCEL	200 S WEST ST	RALEIGH	WAKE	40.07	groundwater	organics
NCD003158094	GLEN RAVEN MILLS	EAST MAIN STREET	BURNSVILLE	YANCEY	40.02	soil	metals
NCD986166379	PILOT MOUNTAIN TIRE FIRE	DAVENPORT ROAD	PILOT MOUNTAIN	SURRY	39.94	known/suspected	
NCSFN0406911	CAROLINA ASSOCIATED MILL	766 HWY 10 W	NEWTON	CATAWBA	39.88	soil	metals
NCN000407700	SPRINGS ROAD GO CART TRACK	4254 SPRINGS RD	CONOVER	CATAWBA	39.86	sediment	organics
						surface water	organics
NONCD0000012	WHITE'S GRAVEL PIT	1515 HWY 49 SOUTH	CONCORD	CABARRUS	39.83	soil	metals
NCD986223170	MCBESS INDUSTRIES	OLD HWY 321	HIGH SHOALS	GASTON	39.75	soil	organics
						sediment	metals
NONCD0001188	SHELBY BODY SHOP	1904 E DIXON BLVD	SHELBY	CLEVELAND	39.74	groundwater	organics
NCD980839757	INDIAN GRAVE GAP DRUM DISPOSAL	APPROX 2 MLS N OF SR 1513	LENOIR	CALDWELL	39.69	surface water	metals
NCD986172500	MCLEAN BROTHERS FARM	SR 1415	WAGRAM	SCOTLAND	39.67	soil	pesticides
						soil	organics
NCD048958615	KELLY-SPRINGFIELD TIRE CO/GOODYEAR	NAVASSA RD	FAYETTEVILLE	CUMBERLAND	39.64	soil	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0000011	TERRELL MACHINE SHOP	3000-3030 SOUTH BLVD	CHARLOTTE	MECKLENBURG	39.62	soil	organics
						groundwater	organics
NONCD0001483	POPE PROPERTY	800 S WILSON AVE	DUNN	HARNETT	39.58	groundwater	inorganics
						groundwater	organics
NONCD0001041	MITCHELL & BECKER	1928 SOUTH BOULEVARD	CHARLOTTE	MECKLENBURG	39.56	groundwater	metals
						soil	metals
						groundwater	organics
NC0001402213	ELLIS JUNK YARD	NEEDMORE DRIVE	HAYESVILLE	CLAY	39.52	soil	organics
						soil	metals
NONCD0001697	EXXON CORPORATION	3340 RIVER ROAD	WILMINGTON	NEW HANOVER	39.43	groundwater	organics
NCD079066833	LENOIR REFINING COMPANY	263 PENNTON AVE NW	LENOIR	CALDWELL	39.26	soil	organics
NCD003216397	HIGHLAND INDUSTRIES/BURLINGTON	215 DRUMMOND ST/SR 2089	KERNERSVILLE	FORSYTH	39.25	groundwater	organics
						soil	organics
NCD003154960	FLEMING LABORATORIES	2215 THRIFT ROAD	CHARLOTTE	MECKLENBURG	39.24	groundwater	organics
						soil	organics
NCD981863277	PERRY BUILDERS - RALEIGH RD	2846 RALEIGH RD	HENDERSON	VANCE	39.05	surface water	metals
NCD033978396	ATEC INDUSTRIES	PERKINS DRIVE	ROXBORO	PERSON	38.92	soil	organics
						soil	metals
						groundwater	metals
						groundwater	organics
NCD982115040	PERRY BUILDERS - MOBILE TRACT	NICHOLAS ST & SKENES AVE	HENDERSON	VANCE	38.91	surface water	metals

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD986215499	PARKER INDUSTRIES	4867 RHONEY ROAD	CONNELLY	BURKE	38.88	groundwater	organics
NCN000407686	CARALEIGH PHOSPHATE AND	1601 LAKE WHEELER ROAD	RALEIGH	WAKE	38.87	soil	metals
NCD089914311	MILLER BREWING CO/CONT DIV	1900 BARNES ST	REIDSVILLE	ROCKINGHAM	38.85	groundwater soil	pesticides pesticides
NCD075582197	AMORE/WORTH CHEMICAL	2418 EAST PETTIGREW ST	DURHAM	DURHAM	38.82	groundwater soil	organics organics
NONCD0000001	STANLY NEWS & PRESS	237 W NORTH STREET	ALBEMARLE	STANLY	38.78	soil	metals
NONCD0001110	WOODSON-TENET LABORATORIES	17570 HWY 902	GOLDSTON	CHATHAM	38.76	soil surface water sediment	metals metals metals
NONCD0002786	METAL RECYCLING SERVICES	5192 JAMES B WHITE HWY	WHITEVILLE	COLUMBUS	38.75	groundwater surface water	organics metals
NCD000827832	ELECTRICAL UTILITIES/CO BB&T	309 ANDERSON AVE	FARMVILLE	PITT	38.70	groundwater	organics
NONCD0001122	CABARRUS ROUNDABOUT	CABARRUS AVE & OLD	CONCORD	CABARRUS	38.69	groundwater soil	metals metals
NCD003520301	OVERCASH MACHINE SHOP, INC.	865 CONNOR STREET	STATESVILLE	IREDELL	38.69	known/suspected	
NCD105797922	TECHNIBILT/DIV OF WHITTAKER	EAST PEACE ST	NEWTON	CATAWBA	38.61	soil soil	organics metals
NONCD0001018	HWY 49 BATTERY DUMP	NC HIGHWAY 49	CHARLOTTE	MECKLENBURG	38.47	soil groundwater	metals metals

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0000015	CENTRAL TRANSPORT COMPANY	215 SAMPSON ST	WILMINGTON	NEW HANOVER	38.45	surface water	metals
NONCD0000044	CHEMICAL AND SOLVENTS, INC.	2804 PATTERSON STREET	GREENSBORO	GUILFORD	38.45	soil	organics
NCD986190239	CHEROKEE OIL	925 SOUTH SUMMIT AVE	CHARLOTTE	MECKLENBURG	38.45	soil	metals
NCD081428104	SUN CHEM CORPORATION/GPI DIV	2400 0LD LEXINGTON ROAD	WINSTON-SALEM	FORSYTH	38.41	soil soil	organics metals
NCD052553641	WEYERHAEUSER CO/LEWISTON	HWY 308 W	LEWISTON	BERTIE	38.38	soil	metals
NONCD0001121	R & R PLATING	OLD WILMINGTON RD	WHITEVILLE	COLUMBUS	38.37	soil	metals
NONCD0002816	RADCLIFFE MARINE (PRIVATEER BOATS)	HWY 264 BYPASS N	BELHAVEN	BEAUFORT	38.20	groundwater	organics
NONCD0001148	UNION CARBIDE	HWY 42	CLAYTON	JOHNSTON	38.19	soil	organics
NCD001871854	FRUEHAUF TRAILER CORPORATION	310 DALTON	CHARLOTTE	MECKLENBURG	38.12	groundwater	organics
NONCD0000055	GLISSON ENTERPRISES	HWY 903	GREENVILLE	PITT	38.12	known/suspected	
NONCD0001080	SOUTH EUGENE CLEANERS	611 S EUGENE ST	GREENSBORO	GUILFORD	38.05	soil groundwater	organics organics
NONCD0001076	SOUTHSIDE INVESTMENTS LLC	2222 SOUTH BLVD	CHARLOTTE	MECKLENBURG	38.05	soil groundwater soil groundwater	organics organics metals metals

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0000003	VAN WATERS & ROGERS	ATANDO INDUSTRIAL PARK	CHARLOTTE	MECKLENBURG	38.05	soil	organics
						groundwater	organics
NONCD0000030	COLLINS AND AIKMAN	327 EAST ELM ST.	GRAHAM	ALAMANCE	38.04	groundwater	organics
NONCD0000066	WAKE AUTO PARTS (FORMER)	3520 TRYON RD	RALEIGH	WAKE	38.03	soil	metals
NCD980503148	SOUTHCHEM LANDFILL	750 EAST MARKHAM AVE	DURHAM	DURHAM	37.98	soil	pesticides
						sediment	pesticides
						surface water	organics
						surface water	pesticides
NONCD0001064	GUILFORD MILLS PLANT	200 DICKENS ROAD	FUQUAY-VARINA	WAKE	37.89	groundwater	organics
NCD980559983	PPG IND., INC./WKS 52	WASHBURN SWITCH ROAD	SHELBY	CLEVELAND	37.89	known/suspected	
NONCD0002301	PIEDMONT CIRCUITS	TELECOMM DR.	CREEDMOOR	GRANVILLE	37.84	groundwater	organics
NCD003148889	CHAMPION INTERNATIONAL/CANTON	NEWFOUND STREET	CANTON	HAYWOOD	37.79	groundwater	organics
NCD042423087	APOLLO CHEMICAL CORPORATION	1105 SOUTHERLAND STREET	GRAHAM	ALAMANCE	37.72	groundwater	organics
						soil	organics
NCD053010724	ICI - AMERICAS, INC.	2130 N TRYON	CHARLOTTE	MECKLENBURG	37.67	known/suspected	
NCN000409780	INDUSTRIAL METAL ALLOY	20 E ACADIA AVE	WINSTON-SALEM	FORSYTH	37.67	soil	metals
						sediment	metals
NONCD0000074	TEXTILE CHEMICAL FACILITY	GRAHAM STREET	CHARLOTTE	MECKLENBURG	37.60	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0002855	PATTERSON PROPERTY	900 JEFFERSON ST	ROANOKE RAPIDS	HALIFAX	37.59	soil	metals
						groundwater	metals
						groundwater	organics
						soil	organics
NC0001606250	CRISTEX DRUM	INDUSTRIAL DR & PINE TREE RD	OXFORD	GRANVILLE	37.58	groundwater	organics
NCN000407564	WATHA FIRING RANGE	3311 SHILOH RD	WATHA	PENDER	37.54	groundwater	metals
NONCD0000024	GAITHER TRANSOU PROPERTY	1202 GUILFORD COLLEGE RD	GREENSBORO	GUILFORD	37.52	soil	metals
						soil	organics
NCD986171338	PEELE CO. PESTICIDE DISPOSAL	NC 42 EAST	CLAYTON	JOHNSTON	37.13	soil	metals
						soil	pesticides
NONCD0000057	WATTS, LEVI PROPERTY	103 FAIRBLUFF ROAD	TABOR CITY	COLUMBUS	37.09	known/suspected	
NCD101750305	INDUSTRIAL PLASTICS, INC.	CLOVER & MCONNELL ROAD	GREENSBORO	GUILFORD	36.97	groundwater	metals
NCD980503098	PFIZER INC/SKATE STADIUM	4500 BLOCK OF HIGH POINT	GREENSBORO	GUILFORD	36.93	known/suspected	
NCD986166759	WILSON SEPTIC PITS	SR 1131	HICKORY	CATAWBA	36.90	soil	organics
						soil	metals
NCN000409783	WHITIN ROBERTS PLANT #2	202 MAPLE AVE	SANFORD	LEE	36.89	soil	organics
NCD067428821	SIEMENS-ALLIS, INC/SWITCHGEAR DIV	5000 WOMACK ROAD	SANFORD	LEE	36.86	groundwater	metals
						sediment	organics
NCD981022288	C&T REFINERY	4800 SOUTH BOULEVARD	CHARLOTTE	MECKLENBURG	36.80	soil	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD081332900	INX (FORMER) FACILITY	3200 & 3210 CULLMAN AVE	CHARLOTTE	MECKLENBURG	36.75	soil	organics
						soil	metals
NCD982095093	JAY'S CLEANERS	1803 N MAIN ST	KANNAPOLIS	ROWAN	36.75	soil	organics
NCD003196847	NATIONAL SPINNING COMPANY	WEST 3RD STREET	WASHINGTON	BEAUFORT	36.61	groundwater	organics
NONCD0001207	APAC-WASHINGTON ASPHALT PLANT	DIRT RD	WASHINGTON	BEAUFORT	36.59	groundwater	organics
NCD044447639	CROWN CENTRAL PETROLEUM CORP.	7720 MOUNT HOLLY ROAD	PAW CREEK	MECKLENBURG	36.59	groundwater	organics
						soil	organics
NCD024577421	NORTH CAROLINA SALVAGE CO.	HWY 117 SOUTH	GOLDSBORO	WAYNE	36.38	soil	metals
NCD986188001	CHAMPION INTERNATIONAL LANDFILL	SR 1571 & 1573	CANTON	HAYWOOD	36.35	soil	organics
NCD000830919	CAROLINA P&L CO. CAPE FEAR STM	SR 1916	MONCURE	CHATHAM	36.33	groundwater	metals
NCD980712038	SED, INC. SWING COURT	SWING COURT	GREENSBORO	GUILFORD	36.30	known/suspected	
NONCD0000065	CMI INDUSTRIES	304 EAST MAIN STREET	ELKIN	SURRY	36.25	soil	organics
						groundwater	organics
NCD991279118	MEREDITH/BURDA, INC.	ST JAMES CHURCH RD	NEWTON	CATAWBA	36.12	soil	metals
NONCD0001418	CROSLAND PROPERTY	HIGH HOUSE RD & DAVIS DR	CARY	WAKE	36.11	soil	metals
NONCD0001009	SINGER PLANT #2	VIRGINIA STREET	LENOIR	CALDWELL	36.09	soil	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD986188019	CHAMPION LANDFILL #2	SR 1539	CANTON	HAYWOOD	36.04	soil	organics
NCD981015886	CAROLINA PRODUCTION FINISHING	105 FAIRVIEW RD	ASHEVILLE	BUNCOMBE	35.86	groundwater	organics
NCD981021702	CAMP, LEONARD PROPERTY	SR 2226	EARL	CLEVELAND	35.79	sediment	organics
NONCD0001130	SOUTH MAIN ST SEWER LINE EXT	4660 FOLLANSBEE RD	WINSTON-SALEM	FORSYTH	35.47	soil	metals
NONCD0002561	SUNOCO BULK TERMINAL	RIVER ROAD	WILMINGTON	NEW HANOVER	35.41	soil groundwater	organics organics
NCD070619911	TELEDYNE ALLVAC MONROE PLANT	2020 ASHCRAFT AVE	MONROE	UNION	35.37	soil	metals
NONCD0001598	DEHAVEN	413 AIRPORT BLVD.	MORRISVILLE	WAKE	35.29	groundwater	organics
NONCD0002728	WILLIAMS, E. W. FACILITY	8200 FAYETTEVILLE ROAD	RALEIGH	WAKE	35.29	soil groundwater	organics organics
NCD067437400	GULF OIL CORPORATION	SR 2813	MCLEANSVILLE	GUILFORD	35.22	surface water	metals
NCD003216413	RALEIGH ROAD FURNITURE	802 WEST CENTER ROAD	LEXINGTON	DAVIDSON	35.22	known/suspected	
NONCD0001115	HAHN DAIRY FARM	LONG RUN FARM RD	MOUNT PLEASANT	CABARRUS	35.20	soil soil	metals organics
NONCD0000088	TRANS TECHNOLOGY	5535 WILKINSON BLVD	CHARLOTTE	MECKLENBURG	35.19	groundwater soil	organics organics
NCD044515211	HAYES-ALBION CORP/BRIGGS-SHAFFNER	3760 KIMWELL DR	WINSTON-SALEM	FORSYTH	35.17	soil	metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0002836	RABO CLEANERS	701 HOOKER RD	GREEENVILLE	PITT	35.17	known/suspected	
NCD072028251	TORPEDO WIRE & STRIP, INC.	INSTRUMENT DR	ROCKY MOUNT	NASH	35.10	soil	metals
NCD044514602	RJR ARCHER, INC.	CUNNINGHAM AVE	WINSTON-SALEM	FORSYTH	35.04	known/suspected	
NCD108702606	HARTSOE BATTERY	2513 LINA AVE	KANNAPOLIS	ROWAN	35.01	soil	metals
NCD003183480	UNION CAMP CORPORATION	524 BROGDEN RD	SMITHFIELD	JOHNSTON	35.01	known/suspected	
NCD041466525	ROCKY MOUNT FIBER DUMP	ATLANTIC AVE EXTENSION	ROCKY MOUNT	EDGECOMBE	34.94	known/suspected	
NCD024459471	GUYTON BATTERY SERVICE	HWY 401 S	CHADBOURN	COLUMBUS	34.92	soil	metals
NCN000407205	TRI-COUNTY AIRPORT	NC 561	AULANDER	HERTFORD	34.92	soil	pesticides
NCD061795696	UNITEX CHEMICALS	520 BROOME RD	GREENSBORO	GUILFORD	34.91	groundwater	organics
NCD981023732	NEUVILLE SOCK PROPERTY	US 64/70 I-40 ACCESS ROAD	HILDEBRAN	BURKE	34.80	soil	metals
NCD986227965	STOLLER CHEMICAL - SEVERN	HIGHWAY 35	SEVERN	NORTHAMPTON	34.73	soil soil	pesticides organics
NONCD0000028	CAROLINA P&L CO. SPRUCE PINE	MOUNTAIN LAUREL DR	SPRUCE PINE	MITCHELL	34.62	known/suspected	
NONCD0001038	BRYANT FARM DRUM DUMP	W OF NC 86 400 FT S OF VA LINE	GATEWOOD	CASWELL	34.61	known/suspected	
NCD000616219	GA-PACIFIC CORP	HWY 177 S	HAMLET	RICHMOND	34.61	known/suspected	

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001048	LEXINGTON FURNITURE IND. PLNT #2	3979 OLD LINWOOD ROAD	LEXINGTON	DAVIDSON	34.53	soil groundwater	organics organics
NONCD0002156	NCDOT ASPHALT MATERIAL TEST LAB	6190 NEW BERN HWY	MAYSVILLE	ONSLOW	34.50	groundwater soil	organics organics
NCD980557672	PITT COUNTY UTILITY LANDFILL	PORT TERMINAL RD	GREENVILLE	PITT	34.38	known/suspected	
NC0001206473	GLEN RAVEN MILLS	TUCKER STREET C	BURLINGTON	ALAMANCE	34.27	groundwater	organics
NCD083673681	SINGER CO/KEARFOTT DIV	HIGHWAY 70	BLACK MOUNTAIN	BUNCOMBE	34.24	soil	organics
NCD990867855	FAWN PLASTICS CO., INC.	317 JEFFREYS ROAD	ROCKY MOUNT	NASH	34.23	known/suspected	
NCD040042426	AEROQUIP/FAWN PLASTICS	HIGHWAY 264 ALT.	MIDDLESEX	NASH	34.22	groundwater	organics
NCD093132207	VOICE OF AMERICA RELAY STATION	COUNTY ROAD 1212	GREENVILLE	PITT	34.21	known/suspected	
NCD098765506	SINGER CO/FURNITURE DIV BRYSON	BRYSON WALK	BRYSON CITY	SWAIN	34.16	groundwater	organics
NONCD0001109	FRIENDLY CLEANERS	605 S. PENDER ST	WILSON	WILSON	34.14	soil	organics
NCD083673616	REEVES BROTHERS	RAILROAD AVE	RUTHERFORDTON	RUTHERFORD	34.10	soil	organics
NONCD0000042	SOUTHMET, INC.	NORTH GREENE STREET	GREENVILLE	PITT	34.04	known/suspected	
NCD000006361	SUPERIOR ELECTRO FINISHES	115 EAST POLO ROAD	WINSTON SALEM	FORSYTH	34.04	soil	metals
NONCD0002413	ROCKY POINT TRADING POST TCE	8160 US HWY 117S, ROCKY POINT	BURGAW	PENDER	33.99	groundwater	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001151	MATTHEWS BLDG SUPPLY/ESTUL TOOL	215 AMES ST	MATTHEWS	MECKLENBURG	33.98		
						groundwater	organics
						soil	organics
NCD986209575	CARDINAL CHEMICAL WAREHOUSE FIRE	NC 211 & NC 72	LUMBERTON	ROBESON	33.96		
						soil	pesticides
NONCD0001114	CONOVER METAL PRODUCTS	315 S MCLIN CREEK RD	CONOVER	CATAWBA	33.96		
						soil	metals
NONCD0001991	LEESONA - ALAMANCE CO PLANT -	2727 TUCKER ST. EXT	BURLINGTON	ALAMANCE	33.78		
						groundwater	organics
NONCD0000078	CAROLINA METAL AND ALLOYS	1016 E. SPRINGFIELD AVENUE	HIGH POINT	GUILFORD	33.72		
						soil	metals
NCD990715658	SOUTHERN MANUFACTURING, INC.	1000 SEABOARD ST	CHARLOTTE	MECKLENBURG	33.72		
						soil	inorganics
NONCD0001150	CHARLOTTE BATTERY	2926 YOUNGBLOOD ST	CHARLOTTE	MECKLENBURG	33.67		
						known/suspected	
NCD003196193	PIFER INDUSTRIES, INC.	2210 E PETTIGREW ST	DURHAM	DURHAM	33.67		
						known/suspected	
NCD003162500	CONSOLIDATED ENGRAVERS CORP.	311 E 12TH ST	CHARLOTTE	MECKLENBURG	33.51		
						groundwater	metals
						sediment	metals
						soil	organics
						soil	metals
						surface water	organics
						sediment	organics
						surface water	metals
						groundwater	organics
NCD065295495	TEXFI IMPRESSIONS	PALETOWN RD	GOLDSBORO	WAYNE	33.41		
						soil	organics
NONCD0000054	MOORES COMPANY	US 1 BUSINESS & SR 1001	HENDERSON	VANCE	33.35		
						soil	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD055550560	GULF ADHESIVES & RESINS/PERKINS	1717 WARD STREET	HIGH POINT	GUILFORD	33.33	groundwater soil	organics organics
NCD000281832	SANFORD PLATING COMPANY	SR 1466	SANFORD	LEE	33.32	soil soil	metals organics
NONCD0000097	MORRIS, NORMAN	HIGHWAY 87 NORTH	ELON COLLEGE	ALAMANCE	33.23	soil	metals
NONCD0001119	EDWARDS PROPERTY FOUNDRY SAND	10209 ROZZELLE'S FERRY RD	CHARLOTTE	MECKLENBURG	33.18	soil	metals
NCD054417308	COASTAL CHEMICAL CORP.	NC 42	CLAYTON	JOHNSTON	33.11	soil	pesticides
NONCD0001208	APAC-PRINCETON ASPHALT PLANT	1288 RAINS MILL RD	PRINCETON	JOHNSTON	33.08	soil groundwater	organics organics
NONCD0000096	MASON DRUM STORAGE	42 FIBERVILLE STREET	CANTON	HAYWOOD	32.99	known/suspected	
NCD981928385	JOHN DEERE TRACTOR	HWY 601 AND SR 1413	MOCKSVILLE	DAVIE	32.95	known/suspected	
NONCD0001164	COOPERAGE TRACT	NC 99 & US 264	BELHAVEN	BEAUFORT	32.94	groundwater groundwater	inorganics organics
NONCD0001123	RALEIGH TTA-SE PARCEL	S WEST ST & MORGAN ST	RALEIGH	WAKE	32.94	soil groundwater	organics organics
NCD072018252	GENERAL ELECTRIC CO/MED STEAM	OLD RALEIGH RD	DURHAM	DURHAM	32.88	groundwater	organics
NCD093783876	VANIER GRAPHICS CORPORATION	655 MEADOW RD	EDEN	ROCKINGHAM	32.86	groundwater soil	organics organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD980729479	CAROLAWN COMPANY	1426 W MOUNTAIN ST	KERNERSVILLE	FORSYTH	32.81	soil	organics
NONCD0001032	COCA COLA BOTTLING WORKS INC	HIGHWAY 17	NEW BERN	CRAVEN	32.59	groundwater	organics
NCD000623199	TEXACO INC/FAYETTEVILLE	992 SHAW MILL RD	FAYETTEVILLE	CUMBERLAND	32.56	groundwater	organics
NCD002388965	LACKAWANNA LEATHER CO., INC.	HWY 70A WEST	CONOVER	CATAWBA	32.48	groundwater	metals
NCD981472624	US 70 DRUM DUMP	US 70	MORGANTON	BURKE	32.41	soil	organics
NONCD0001036	JOYCETON WATER WORKS WELLS 2 & 9	N OF SWANSON RD	LENOIR	CALDWELL	32.38	groundwater	organics
NCD980502892	CREEK BRIDGE/BORDEN CHEMICAL	US HWY 24-87 (GROVE ST)	FAYETTEVILLE	CUMBERLAND	32.35	known/suspected	
NCD095470332	THONIT A SIMMONS COMPANY	11900 STEELE CREEK ROAD	CHARLOTTE	MECKLENBURG	32.33	soil soil	metals organics
NCD080885551	DAUGHERTY CHEMICAL COMPANY	307 WALKER STREET	DURHAM	DURHAM	32.27	soil	metals
NCD980848766	GIBBS ELECTROPLATING	5210/5216 HOVIS ROAD	CHARLOTTE	MECKLENBURG	32.27	soil	metals
NCD980847123	HURT RESIDENCE	HWY 64	MORGANTON	BURKE	32.27	soil	organics
NCD003183167	LONG MANUFACTURING	111 FAIRVIEW STREET	TARBORO	EDGECOMBE	32.13	soil	organics
NCD982098774	CAL-TONE PAINTS	5115 NEW BERN AVE	RALEIGH	WAKE	31.94	soil	organics
NCD991278680	SADOLIN PAINT PRODUCTS, INC.	3950 NEW WALKERTOWN RD	WINSTON-SALEM	FORSYTH	31.92	known/suspected	

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD003221868	CENTURY FURNITURE COMPANY	420 12TH ST NW	HICKORY	CATAWBA	31.90	soil	metals
NONCD0000084	THERMO PRODUCTS, INC.	800 JONES STREET	DENTON	DAVIDSON	31.77	soil	metals
						soil	organics
NCD980799019	CHEROKEE OIL	1201 BERRYHILL ROAD	CHARLOTTE	MECKLENBURG	31.76	soil	organics
						soil	metals
						surface water	metals
NONCD0000059	DAYCO COCHRAN LANDFILL	RT 1 HYATT CREEK ROAD	WAYNESVILLE	HAYWOOD	31.71	soil	organics
NCSFN0407143	AMERICAN ELEMENTS	500 WALLACE ST	FARMVILLE	PITT	31.68	soil	metals
NCD986180883	CCFC PESTICIDE DISPOSAL	607 HILLSBOROUGH STREET	OXFORD	GRANVILLE	31.67	known/suspected	
NCD980557847	KAISER ACME FARMARKET	SR 1870	RIEGELWOOD	COLUMBUS	31.60	groundwater	organics
						soil	pesticides
NONCD0001177	ALCOA-PINE RD RAVINE DISPOSAL	PINE RD		MONTGOMERY	31.53	soil	inorganics
						soil	metals
						soil	organics
						soil	cyanide
NCD980845119	BUCKHORN PESTICIDES	NC 581 & NC 42	WILSON	WILSON	31.36	soil	pesticides
						soil	organics
NCD003229762	STRUCTURAL WOODS PRESERVING CO.	HWY 22	COLERIDGE	RANDOLPH	31.34	soil	metals
						groundwater	metals
NCSFN0406924	VC CHEMICAL	STANBACK FERRY RD	WADESBORO	ANSON	31.34	soil	metals

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD000828566	TARTAN MARINE PROPERTY	NC HIGHWAY 77 & SR 2032	HAMLET	RICHMOND	31.33	soil	metals
NCD981863814	LANCASTER PLATING	802 EDWARDS ROAD	LILLINGTON	HARNETT	31.32	soil	metals
NONCD0001015	MARY CIRCLE BATTERY	ZION CHURCH & MARY CRL	CONCORD	CABARRUS	31.18	soil	metals
NCD045451473	ACE CHEMICAL CORPORATION	9801 YORK ROAD	CHARLOTTE	MECKLENBURG	31.05	soil groundwater	organics organics
NCD049845266	STANLEY CASE GOODS (FORMER)	HWY 211	WEST END	MOORE	31.01	groundwater	organics
NONCD0000019	SIR WALTER GUN CLUB	US 64	RALEIGH	WAKE	30.96	soil	metals
NONCD0002788	ALLOWAY RESIDENCE	405 PARADISE LANE	SHALLOTTE	BRUNSWICK	30.88	groundwater	organics
NONCD0000070	BENFIELD SANITATION SERVICE	1809 W FRONT ST	STATESVILLE	IREDELL	30.87	known/suspected	
NCD980843460	GRANT CREEK WWTP	CRUSE ROAD	SALISBURY	ROWAN	30.66	soil	organics
NCD003195963	WESTINGHOUSE ELEC METER & LIGHT	US 1 N	RALEIGH	WAKE	30.57	soil soil	organics metals
NONCD0001060	DIXIE MACHINE & TOOL CO	2204 PATTERSON ST	GREENSBORO	GUILFORD	30.46	soil	organics
NCD024740433	EC MANUFACTURING	413 N. POLK STREET	PINEVILLE	MECKLENBURG	30.45	soil	metals
NONCD0001033	AMERICAN CONTRACT COATINGS	HWY 55	APEX	WAKE	30.43	known/suspected	

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001067	CC DICKSON	1524 SOUTH BOULEVARD	CHARLOTTE	MECKLENBURG	30.43	soil	organics
						groundwater	organics
NCD003938586	CORNING GLASS WORKS	310 NORTH COLLEGE ROAD	WILMINGTON	NEW HANOVER	30.37	known/suspected	
NC0000998336	CP PROPERTIES	2350 BROWN ROAD	SANFORD	LEE	30.23	sediment	metals
						soil	metals
						soil	organics
NONCD0001595	DEANS PICKLES, FMR CATES	354 N. FAISON AVE.	FAISON	DUPLIN	30.23	groundwater	inorganics
NCD003186004	INTERNATIONAL PAPER/RICHMOND	2215 S. WILMINGTON STREET	RALEIGH	WAKE	30.10	soil	organics
						groundwater	organics
NONCD0001175	MIDTOWN SQUARE VALET DRY	401 S INDEPENDENCE BLVD	CHARLOTTE	MECKLENBURG	30.06	groundwater	organics
						soil	organics
NCD024762668	BUSH BROTHERS PLATING INC/GREER	107 NE MARKET ST	REIDSVILLE	ROCKINGHAM	30.05	known/suspected	
NCD981748403	HOME DEPOT-PRO CLEANERS	2310 N MAIN STREET	HIGH POINT	GUILFORD	30.05	groundwater	organics
NONCD0000072	LOWE'S PROPERTY	4891 LONG BEACH RD	SOUTHPORT	BRUNSWICK	30.02	soil	organics
NCD980557722	HARRISBURG BATTERY	HIGHWAY 49	HARRISBURG	CABARRUS	30.00	soil	metals
NCD067392175	TRAMCO, INC.	SR 1611	CONNELLY	BURKE	29.87	soil	organics
NCD057248759	PATCH RUBBER POND	GRACE BOULEVARD	ROANOKE RAPIDS	HALIFAX	29.82	soil	organics
NONCD0002781	ADAMS PAINTING SERVICE	722 WELLINGTON AVE	WILMINGTON	NEW HANOVER	29.71	known/suspected	

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD003213568	LIBERTY FURNITURE CORP/CHROMCRAFT	HWY 421	LIBERTY	RANDOLPH	29.60	soil	organics
NCD986170678	WOOD ROAD DRUM BURIAL	CIRCLE WOOD RD/SR 2641	GASTONIA	GASTON	29.44	known/suspected	
NCD049845548	REICHHOLD CHEMICAL, INC.	SR 1916	MONCURE	CHATHAM	29.33	soil	organics
NONCD0002863	BABY DIAPER SERVICE	1819 SPRING GARDEN ST	GREENSBORO	GUILFORD	29.31	soil groundwater groundwater	organics bases organics
NONCD0002280	PCS NITROGEN, FMRLY ARCADIAN	2830 HWY 421 NORTH	WILMINGTON	NEW HANOVER	29.09	groundwater	inorganics
NCD003218161	CORNELL-DUBILIER ELECTRONICS	2652 DALYRUMPLE STREET	SANFORD	LEE	29.02	groundwater soil	organics organics
NONCD0001106	MICROTRON ABRASIVES, INC	10242 RODNEY BLVD	PINEVILLE	MECKLENBURG	28.94	soil groundwater	organics organics
NCD991278714	CAROCHEM, INC.	540 GULF ST	DURHAM	DURHAM	28.72	soil	organics
NONCD0001050	LEXINGTON FURNITURE IND. PLNT #12	3301 COTTON GROVE LANE	LEXINGTON	DAVIDSON	28.59	soil	organics
NCD980843528	TOWN CREEK REGIONAL WWTP	HEILIGTOWN ROAD	SALISBURY	ROWAN	28.50	known/suspected	
NCD048184451	BURLINGTON HOME CHAIR	HIGHWAY 268	RONDA	WILKES	28.49	known/suspected	
NCD000828616	USS AGRI-CHEMICALS FARM SERVICE	HWY 701	WHITEVILLE	COLUMBUS	28.45	known/suspected	
NONCD0001805	EXXON PIPELINE	RIVER RD	LELAND	BRUNSWICK	28.37	groundwater	organics

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD003149291	GASTON COUNTY DYEING MACHINE CO.	HWY 27 EAST	MOUNT HOLLY	GASTON	28.34	groundwater	organics
NCD991277922	GASTON COUNTY DYEING MACHINE CO.	200 S MAIN ST	STANLEY	GASTON	28.34	groundwater	organics
NCD003186178	COASTAL CHEMICAL CORP.	EVANS ST EXT	GREENVILLE	PITT	28.33	soil	pesticides
NONCD0001985	LEBANON CHEMICAL CORPORATION	1665 HIGHWAY 64 EAST	PLYMOUTH	WASHINGTON	28.22	groundwater	inorganics
NCD991278581	BURLINGTON FURNITURE/LUMBER PL	US 64 EAST	LEXINGTON	DAVIDSON	28.12	known/suspected	
NCD980483275	HELENA CHEMICAL COMPANY	DENNIS STREET EXTENSION	ENFIELD	HALIFAX	28.04	soil soil soil	organics pesticides metals
NONCD0001149	VC CHEMICAL	2700 ANGIER AVE	DURHAM	DURHAM	27.95	soil soil	organics metals
NCD003151651	WILLARD SMELTING CO.	101 NEWBERN ST	CHARLOTTE	MECKLENBURG	27.86	soil	metals
NCD991278839	NORTH STATE CHEMICALS	6211 HUNT RD	PLEASANT	GUILFORD	27.60	soil groundwater soil	metals organics organics
NONCD0001030	BLR	2911 LEE AVENUE	SANFORD	LEE	27.50	groundwater soil	organics organics
NONCD0000013	CAROLINA HARDWOODS	158 FACTORY STREET	WILLIAMSTON	MARTIN	27.49	surface water	metals

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Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001166	CENTRAL GRAIN-MORGANS CORNER	1312 HASSELL RD	ELIZABETH CITY	PASQUOTANK	27.28	groundwater	metals
						groundwater	organics
						soil	inorganics
						soil	metals
						soil	organics
						groundwater	inorganics
NCD024770125	BURLINGTON FURNITURE	ATOAH STREET	ROBBINSVILLE	GRAHAM	27.10	soil	organics
NONCD0000091	DUKE POWER/WALNUT COVE	POWER HOUSE ROAD	WALNUT COVE	STOKES	26.95	known/suspected	
NCD024468597	CHARLOTTE STEEL DRUM	2900 WEST TRADE STREET	CHARLOTTE	MECKLENBURG	26.67	known/suspected	
NCD991278300	UNITED DRUM T/A RELIANCE UNIV.	214 BERKLEY ST	HIGH POINT	GUILFORD	26.55	groundwater	organics
						groundwater	metals
NCD003213881	BENDIX CORPORATION	I-85 INNES ST EXIT	SALISBURY	ROWAN	26.36	soil	metals
NCD986166288	WOODY'S TIRE FIRE	HIGHWAY 321	GASTONIA	GASTON	26.35	known/suspected	
NONCD0002819	PLANTER'S WAREHOUSE	1003 PIREWAY RD	TABOR CITY	COLUMBUS	26.34	groundwater	inorganics
NCD990868168	INMONT CORP/BASF CORPORATION	1701 W WESTINGHOUSE BLVD	CHARLOTTE	MECKLENBURG	26.22	soil	organics
						groundwater	organics
NONCD0002529	BASSETT FURNITURE-WEIMAN PLANT	1603 LEONARD ST	RAMSEUR	RANDOLPH	26.05	known/suspected	
NCD003218492	CAROLINA RUBBER HOSE COMPANY	1801 SOUTH RAILROAD	SALISBURY	ROWAN	26.04	soil	metals
						soil	organics
NCD003464765	VAUGHAN-BASSETT FURNITURE CO.	ROUTE 268 EAST	ELKIN	SURRY	25.93	soil	organics

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NONCD0001039	OVERCASH GRAVEL & GRADING CO. INC.	1150 SHELTON ROAD	CONCORD	CABARRUS	25.71	known/suspected	
NCD980602791	SALVAGE OIL OF AMERICA	1227 MCLEOD STREET	ROCKINGHAN	RICHMOND	25.68	soil	organics
NCD000822130	HARRELSON RUBBER COMPANY	HWY 220 SOUTH	ASHEBORO	RANDOLPH	25.45	known/suspected	
NCD003200656	FEATHER PROCESSORS, INC	HWY 117 NORTH	ROSE HILL	DUPLIN	25.30	soil	metals
NCD003148798	DAYCO CORP	BALSAM RD	WAYNESVILLE	HAYWOOD	25.26	soil groundwater	organics organics
NCSFN0406894	STALLINGS SALVAGE	SECREST AVE	MONROE	UNION	24.89	known/suspected	
NCD067191262	FIRESTONE TIRE AND RUBBER	HWY 301	WILSON	WILSON	24.45	soil	organics
NONCD0000048	WALKER DRUM DISPOSAL	WYATTS CHURCH GROVE ROAD	GOLD HILL	ROWAN	23.80	soil soil	organics metals
NCD077821296	SOUTHERN RESIN/US INDUSTRIES INC	1510 DENTON ROAD	THOMASVILLE	DAVIDSON	23.62	groundwater	organics
NCD077838589	THOMASVILLE FOREST PRODUCTS	CLARKSBURY CHRUCH ROAD	THOMASVILLE	DAVIDSON	23.10	soil	metals
NCD980838551	MCDOWELL FIREMAN ASSOCIATION	SR 1214 GREENLEE ROAD	MARION	MCDOWELL	23.09	known/suspected	
NCD096158696	BURLINGTON INDUSTRIES, INC.	6008 HIGH POINT RD	GREENSBORO	GUILFORD	22.43	groundwater soil soil groundwater	organics organics bases metals

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD071579528	FORBUSH METAL	SPEER BRIDGE ROAD	YADKINVILLE	YADKIN	21.90	soil	organics
						soil	cyanide
						soil	metals
NCS000000478	CROWDERS MOUNTAIN STATE PARK	CROWDERS MOUNTAIN STATE	GASTONIA	GASTON	21.57	known/suspected	
NCD003236841	WARLICK PAINT COMPANY	945 MONROE ST	STATESVILLE	IREDELL	21.47	known/suspected	
NCD986232213	SUMMIT RESOURCE MANAGEMENT	3501 GRIBBLE ROAD	STALLINGS	UNION	21.45	surface water	organics
						soil	inorganics
						soil	organics
NCD003223799	CLAYTON-MARCUS CO., INC.	HWY 127 N	BETHLEHEM	ALEXANDER	21.11	soil	organics
						soil	cyanide
						soil	metals
NCD054284518	STANDARD PACKAGING CORPORATION	HWY 73 W	MT GILEAD	MONTGOMERY	21.07	known/suspected	
NCD003214574	SPRUANCE SOUTHERN, INC.	HWY 8	WINSTON-SALEM	FORSYTH	20.81	known/suspected	
NCD046149019	HISTRAND CHEMICAL, INC.	HWY 9	LENOIR	CALDWELL	20.72	known/suspected	
NCD980559637	BEAUNIT CORP./DYING & FINISHING	LINEBERGER STREET	LOWELL	GASTON	19.99	known/suspected	
NONCD0002780	APAC-CLARKS ASPHALT PLANT	OLD US HWY 70	CLARKS	CRAVEN	19.82	soil	organics
NONCD0001005	TRANSEASTERN CORP.	509 S LODGE ST	WILSON	WILSON	19.56	known/suspected	
NCD048462881	ARMOLOY CO OF NC/HI-TECH	1603 SALISBURY ROAD	STATESVILLE	IREDELL	19.37	known/suspected	

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD003152659	REICHHOLD CHEMICAL, INC.	161 BUFFALO AVENUE	CONCORD	CABARRUS	19.32	known/suspected	
NCD053528170	LAURENS GLASS/BALL-INCON GLASS	US 1 SOUTH	HENDERSON	VANCE	19.23	groundwater	organics
NCD981921083	SWIFT ADHESIVES	9724 INDUSTRIAL DRIVE	PINEVILLE	MECKLENBURG	19.19	known/suspected	
NONCD0000014	BOISE CASCADE	SR 1916	MONCURE	CHATHAM	18.86	known/suspected	
NCD057037178	PFIZER INC/COTY DIVISION	COX MILL RD & HWY 42 E	SANFORD	LEE	18.48	soil	organics
NONCD0000092	FUNDER AMERICA	200 FUNDER RD	MOCKSVILLE	DAVIE	18.33	known/suspected	
NCD067178707	FAWN PLASTICS CO., INC.	RT 264 BUSINESS	MIDDLESEX	NASH	17.34	soil	organics
NONCD0002848	LOXCREEN	RT 501 S	ROXBORO	PERSON	16.41	known/suspected	
NONCD0000034	ASHEVILLE INDUSTRIES	20 GLEN BRIDGE RD/SR3495	ARDEN	BUNCOMBE	16.30	soil	organics
NCD071567259	WEYERHAEUSER CO/MONCURE	STATE ROAD 1916	MONCURE	CHATHAM	16.04	known/suspected	
NONCD0002498	SOUTHERN GRAPHICS SYSTEMS	2406 N. 23RD STREET	WILMINGTON	NEW HANOVER	15.92	groundwater	metals
NONCD0000053	CAROLINA MARBLE CO.	INDIAN MOUND ROAD	ALBEMARLE	STANLY	15.28	known/suspected	
NONCD0000099	PARTON'S MOTOR COMPANY	2800 SOUTH YORK ROAD	GASTONIA	GASTON	15.22	known/suspected	
NONCD0000082	CAPE FEAR CHEMICALS/HL BRICE	HWY 701 S	ELIZABETHTOWN	BLADEN	11.48	soil	pesticides

APPENDIX. INACTIVE HAZARDOUS WASTE SITES PRIORITY LIST (In Order By County)

Id Number	*Site Name*	*Site Address*	*City*		*Score*	*Medium*	*Contaminant*
NCD081333858	HOLSTON ENERGY INC/HOLSTON FUEL	HWY 19A/235 BYPASS	WAYNESVILLE	HAYWOOD	7.70	soil	organics

NCDENR
North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

To: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FISCAL RESEARCH
Mr. Mark Trogdon, Director, Fiscal Research Division

SENATE APPROPRIATIONS SUBCOMMITTEE ON NATURAL AND ECONOMIC RESOURCES
The Honorable Don East, Co-Chair
The Honorable David Rouzer, Co-Chair
The Honorable Brent Jackson, Co-Chair
The Honorable Harris Blake, Vice-Chair

HOUSE APPROPRIATIONS SUBCOMMITTEE ON NATURAL AND ECONOMIC RESOURCES
The Honorable Carolyn Justice, Co-Chair
The Honorable Roger West, Co-Chair
The Honorable Efton Sager, Vice-Chair

FROM: Kari Barsness KKB
Director of Legislative and Intergovernmental Affairs

SUBJECT: Bernard Allen Memorial Emergency Drinking Water Fund Report (Division of Waste Management)

DATE: October 22, 2012

Pursuant to G. S.87-98, the Division of Waste Management shall submit to the Environmental Review Commission a report on the Bernard Allen Memorial Emergency Drinking Water Fund by October 1st of each year. Please consider the Bernard Allen Memorial Emergency Drinking Water Fund 2012 Annual Report attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 707-8618 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Assistant Secretary for Environment Robin W. Smith
Dexter R. Matthews, Director, Division of Waste Management
Jennifer Hoffman, Fiscal Research Division
Timothy Dale, Fiscal Research Division
Mariah Matheson, Research Division

Annual Report to the Environmental Review Commission North Carolina General Assembly

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Bernard Allen Emergency Drinking Water Fund

(July 1, 2011 to June 30, 2012)

NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

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Executive Summary

The Bernard Allen Emergency Drinking Water Fund (Fund) was created in 2006 by the General Assembly to improve the state's response to groundwater contamination and to provide low- income households with a safe drinking water supply.

The Fund has three authorized uses: 1) to pay for notice to persons whose wells are at risk from groundwater contamination; 2) to pay the costs of testing private wells; and 3) to provide an alternate drinking water supply to well owners affected by contamination.

The Fund continues to help provide critical services for many citizens of North Carolina through paying for well testing, providing emergency bottled water and assisting in the payment of permanent waterline connections or point-of-entry filter systems. In FY 2011-12, the Fund's resources continued to focus primarily on providing alternate water to affected citizens and investigating potentially contaminated wells across the state through sampling. Twenty-four households received alternate water supplies this fiscal year using the Fund.

FY 2011-12 Activities Update

In FY 2011-12, the Bernard Allen Memorial Emergency Drinking Water Fund (Fund) has continued to focus primarily on three major priorities: 1) providing permanent alternate water sources to households with contaminated drinking water wells; 2) identifying sites in the state that may be eligible for funding for sampling or alternate water supplies under the program; and 3) testing private wells suspected of being contaminated. The activities conducted in FY 2011-12 are summarized below.

Alternate Water Provided

The Fund continued to provide bottled water to a resident in the southeastern area of Richmond County while the Fox Road Phase 2 waterline extension moved through the design and permitting process. Construction of the Fox Road Phase 2 extension of waterlines in Richmond County is planned to begin in fall 2012.

The Fund has continued to supply bottled water to six residences in Montgomery County while also assisting with extension of water lines to the homes (the Windblow Road waterline extension). The Fund has committed $60,000 to assist in installing waterlines. Construction of the Windblow Road waterline extension is also planned to begin in fall 2012.

The Fund connected three other residences to municipal water services in other areas of the state – one in Cleveland County, one in Gaston County and one in Wake County. Two of the contaminated wells that served these homes have been closed and the third is planned for closure for FY 2012-13. The Fund also paid to close 11 other contaminated wells at residences that had previously been connected to a public water system (one each in Gaston, Vance, Stokes, Guilford and Wake counties, two in Stanly County and four in Caswell County).

The Fund provided point-of-entry filter systems to seven other residences (one each in Richmond, Stokes, Union, Randolph and Guilford counties and two in Pender County). The Fund also provided maintenance for existing point-of-entry filter systems at seven other residences (one in Stokes County, two in Mecklenburg County, three in Randolph County and one in Person County).

Seventeen residences have received bottled water through the Fund in FY 2011-12.

- Richmond County 2
- Moore County 1
- Montgomery County 6
- Stokes County 1
- Guilford County 1
- Randolph County 1
- Catawba County 1
- Gaston County 1
- Rockingham County 1
- Wake County 2

Site Review and Research

The Inactive Hazardous Sites Branch has been researching a catalog of sites with drinking water wells known or suspected of being contaminated. Local government and other records are researched to determine if some of the affected residences have been connected to municipal water systems, to identify any other wells in the area that may potentially be affected, to identify potential sources of contamination and to determine ownership of affected residences. When the program identifies wells as being at risk of contamination, the wells are tested and staff work with owners and local governments on alternate water supplies. Note, however, that the Fund can only be used to assist homeowners who have an annual household income that does not exceed 300 percent of the poverty level. Approximately 49 site files, most with multiple residences and wells, were reviewed during this fiscal year. Review of each file includes the following:

- Historical information about previous sampling and work done on the site(s)
- Identification of locations of the affected properties
- Identification of additional properties using drinking water wells within 500 ft. and 1,000 ft. rings of potentially affected properties
- Identification of potential sources of contamination
- Location of public waterlines in the area, notation of properties that have been connected to the public water system.

Sampling of Private Wells

At the beginning of FY 2011-12, the Division of Waste Management's Inactive Hazardous Sites Branch had identified 152 sites with no clear responsible party for groundwater contamination affecting drinking water wells. Most sites involved multiple residences and drinking water wells. Existing groundwater data indicated contaminant levels varied from detection levels to levels exceeding the federal drinking water standards. It is not uncommon to have multiple wells with varying levels of contamination associated with the same site. Since contamination levels also change with time as groundwater

contamination migrates and the water table rises and falls, these wells need to be re-sampled periodically if they are not currently above federal drinking water standards and eligible for alternate water. Staff also identified 71 sites with wells located less than 500 feet from potential sources of contamination that are lacking a responsible party. These sites have one or more residential properties/wells associated with them and also need to be evaluated. The program plans to advance the rate of sampling water supply wells through contracting with environmental consulting firms.

During FY 2011-12, the Fund was used to sample 161 drinking water well samples from 29 sites across the state. Locations of the sites are shown below:

County	# of Sites	# of Wells
• Alamance	2	2
• Caswell	2	3
• Catawba	3	4
• Cleveland	1	2
• Durham	2	13
• Gaston	9	71
• Guilford	1	10
• Moore	1	1
• Pender	1	1
• Rockingham	1	23
• Rowan	2	8
• Wake	4	23

Summary of the Bernard Allen Memorial Emergency Drinking Water Fund

In FY 2011-12, the Fund received income from the Scrap Tire Tax and from interest. Expenditures from the Fund continue to primarily focus on assisting local government waterline projects, providing bottled water, sampling/analyzing drinking water wells for potential contamination, connecting residences to existing municipal water systems, installing point-of-entry filter systems, maintaining existing point-of-entry filter systems and properly closing contaminated wells.

A summary of the Fund expenditures can be found in the Accounting Summary on page 5. In FY 2012-13, the program plans to make use of contracting to expand the number of wells that can be tested beyond what the program staff is able to accomplish. The legislation in General Statute 87-98 allows $100,000 for administrative expenses associated with program implementation. A full-time and one or two part-time employees will continue to administer the program (contracts, screening properties for eligibility, evaluating areas for testing of water supply wells, arranging for alternate water) and to conduct certain sampling. Through file reviews, the Inactive Hazardous Sites Branch has found more than 700 sites (each site potentially having multiple wells) that contain detection of contaminants or wells in close proximity to contamination. Experience indicates about half of those sites will lack financially viable responsible parties.

Therefore, it is essential to expand the rate at which these wells are tested through private contracting.

While the end of FY 2011-12 fund balance is $1,007,959, there are several fund commitments. Waterline contracts in the amount of $290,000 are immediately pending. Approximately $130,000 per year is needed for the additional contracted well testing. The Fund also has commitments to continue to provide bottled water and to maintain treatments systems for homes with contaminated wells. Currently those charges amount to $36,500/year, but are growing. The Fund has laboratory testing contract commitments of $20,000 and planned well treatment system installations in the amount of $26,500. Revenue for waterlines must be accrued as these projects run from the tens of thousands of dollars to several hundreds of thousands of dollars depending on the size of the problem and engineering required. The Department of Environment and Natural Resources' (DENR) Groundwater Decision Support System is under development to centralize electronic groundwater data among DENR programs and share the information with other government agencies and the public. Funding will be designated in the amount of $500,000 from the Fund to assist with public notice by providing groundwater data electronically via the Internet.

Bernard Allen Memorial Emergency Drinking Water Fund

Accounting Summary
FY 2011 - 12

INCOME:

Description		*Amount*
Balance Forward	$	790,374.89
Scrap Tire Tax	$	414,318.24
Interest	$	6,561.84
Total Income	$	1,211,254.97

EXPENDITURES:

Description		*Amount*
Lab Testing	$	16,399.00
Bottled Water	$	6,507.95
Water Service Connections	$	7,458.00
Well Abandonments	$	13,552.50
Point of Entry Filter Systems	$	63,777.93
Sampling Equipment & Supplies	$	304.27
Staffing *	$	88,865.19
Other Operating Expenses	$	6,430.99
Total Expenses	$	203,295.83

Current Balance as of June 30, 2012 BALANCE:	**$**	**1,007,959.14**
Obligated to Contracts & Commitments	**$**	**1,003,000.00**
Effective Cash Balance	**$**	**4,959.14**

** Includes Sampling Prep, Research, Field Work and Approximately 10 Percent Fund Administration*

Conclusions

The Bernard Allen Emergency Drinking Water Fund continues to serve a valuable role for residents in North Carolina who have contaminated drinking water wells. The Fund's ability to pay for sampling/analyzing drinking water wells and providing notification to residents has been instrumental in helping the state respond to emergency situations statewide. The Fund's ability to provide bottled water to residents as a temporary water supply has helped as a short-term solution, giving time for the evaluation of longer-term alternatives. Prior to the creation of the Fund, the state had no source for providing emergency temporary water supplies in many situations. Future demands on the Fund are anticipated to increase, based on results from private well analysis. DENR will continue to evaluate the eligibility of projects that can be served by the Fund as demands change.

Based on experience implementing the Fund, the department believes that the following changes to General Statute 87-98 could provide a more effective response to contaminated drinking water wells.

1) Allow water supply wells to be tested more frequently than every three years if DENR needs to confirm a laboratory result or to more closely monitor a high-risk well or a well with a treatment system.

2) Increase the amount of funds that can be spent per household from $10,000 to $50,000. ($10,000 is insufficient in most cases for installation of waterlines. New wells most often cannot be installed because of the groundwater contamination in the area.)

3) Allow contamination from artificial sources to take priority over naturally occurring contamination for the provision of alternate water supplies. Thousands of wells in the state contain naturally occurring arsenic, lead, radon and other contaminants, and the Fund does not have the revenue to address all of these cases. The presence of natural contamination is similar to conditions an owner may face with well maintenance such as bacteria caused by poor casing condition, or low flow rate.

4) Specify that the $100,000 fund allowance to administer the program is an annual allowance. The program must have staff to implement contracting and to identify and research sites requiring action.

#15

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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COMMISSION CLERKS

November 15, 2012

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on October 11, 2012. All reports are available online on the Commission website: **(http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received)**. If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or **mariahm@ncleg.net** for assistance.

A. The following reports have been submitted and are being distributed in connection with today's agenda as follows.

1) Annual report on the Inactive Hazardous Sites Program. October 1, 2012. Statutory Authority: G.S. 130A-310.10. ***Agenda Item #8***

2) Annual report on the Bernard Allen Memorial Emergency Drinking Water Fund. October 1, 2012. Statutory Authority: G.S. 87-98(e). ***Agenda Item #8***

B. The following reports have been submitted and may be distributed in conjunction with a presentation at a future meeting of the Commission.

1) Department of Agriculture and Consumer Services.

Annual report on animal waste management performance standards for swine farms, the Lagoon Conversion Program, and the Swine Farm Waste Management System Conversion Account. October 1, 2012. Authority: S.L. 2007-523, Sec.2(f).

2) Utilities Commission

Annual report on the Renewable Energy and Energy Efficiency Portfolio Standard (REPS). October 1, 2012. Statutory Authority: G.S. 62-133.8(j).

3) Department of Environment and Natural Resources.

a. Annual report on acquisitions made from the Natural Heritage Trust Fund. October 1, 2012. Statutory Authority: G.S. 113-77.9(e), as amended by S.L. 2009-484, Sec. 14.

b. Annual report on DENR's activities related to the Mining and Energy Commission, the establishment of regulatory programs for the management of oil and gas exploration, and the development and use of horizontal drilling and hydraulic fracturing. October 1, 2012. Statutory Authority: G.S. 113-391(e).

c. Annual report on implementation of the Sedimentation Pollution Control Act of 1973. October 1, 2012. Statutory Authority: G.S. 113A-67.

d. Annual report on the effectiveness of the Brownfields Property Reuse Act. October 1, 2012. Statutory Authority: G.S. 130A-310.40.

e. Annual report on the cost of the Title V program. November 1, 2012. Statutory Authority: G.S. 143-215.3A(c).

f. Annual report on the evaluation on the Surface Water Identification Training and Certification Program. October 1, 2012. Statutory Authority: G.S. 143-214.25A.

g. Annual report on permitting and inspecting animal waste management systems/Animal Waste Compliance Report. October 1, 2012. Statutory Authority: G.S. 143-215.10M.

2011-2012

ENVIRONMENTAL REVIEW COMMISSION

MINUTES

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
December 13, 2012

The Environmental Review Commission (ERC or Commission) met on Thursday, December 13, 2012 at 9:30 a.m. in Room 643 of the Legislative Office Building. Senator Rouzer presided.

The following members were present: Chair, Senator David Rouzer, Co-Chair, Representative Mitch Gillespie, Co-Chair, Representative Ruth Samuelson, Representative William Brisson, Representative Joe Hackney, Representative Pat McElraft, Representative Chuck McGrady, Representative Roger West, Senator Fletcher Hartsell, Jr. and Senator Brent Jackson. Mr. Jeff Hudson, Ms. Jennifer McGinnis, and Mr. Jeff Cherry, Commission Counsels; Ms. Jennifer Mundt, Commission Analyst; Ms. Mariah Matheson, Commission Assistant; and Ms. Sarah Neunzig, Commission Clerk. The following Sargent-at-Arms were present: Joe Crook, Reggie Sills, Ed Kesler and Steve Wilson. Attachment #1 and #2.

On November 20, 2012 and December 11, 2012 notices were sent to members and interested parties via e-mail. A copy of the notices is included in the attachments to these minutes as Attachment #3 and Attachment #4. Copies of the agenda for the meeting, the reports memorandum and visitor registration sheets are included in the attachments to these minutes as Attachment #5, #6 and Attachment #7, respectively.

Call to order and introductory remarks

Senator Rouzer called the meeting to order and welcomed members, staff, and visitors in attendance.

Senator Rouzer recognized his Co-Chair, Representative Gillespie and Co-Chair, Representative Samuelson, for introductory remarks. He then recognized Mr. Jeff Hudson, Commission Counsel, to provide an overview of the meeting agenda. Mr. Hudson reviewed the agenda and what was to be discussed during the meeting.

Senator Rouzer then asked if there were any questions and seeing none he proceeded.

Approval of past minutes

Senator Rouzer requested a motion to approve the minutes. Representative McGrady made the motion to accept the minutes. The Commission as a whole supported the motion and accepted the October 11, 2012 and November 15, 2012 minutes; Attachments #8 and #9.

Annual report on the Mining and Energy Commission

Senator Rouzer recognized Mr. Jim Womack, Chairman of the Mining and Energy Commission, to give a quarterly update and the annual report of the commission. He gave his presentation with the aid of a PowerPoint which is included as Attachment #10 and a memorandum from DENR as Attachment #11.

Representative Sameulson asked Mr. Womack to give a more detailed overview of the commission's appropriations request. Mr. Womack responded that in the recurring funds they need four additional positions filled which total $219,413 as well as operating funds for the commission which total $238,921. In nonrecurring funds, they need a one-time expenditure for furniture, computers, etc., which would total $65,500. In total, for FY2013-2014 and FY2014-2015 the commission would need $523,834.

Air Toxics Study Report

Senator Rouzer recognized Ms. Sheila Holman, Director of the Department of Air Quality for DENR. She gave her presentation with the aid of a PowerPoint which is included as Attachment #12 and memorandums from

DENR on the air toxics reforms recommendations and their report on inspections, audits, and examinations as Attachments #13 and #14, respectively.

Representative Gillespie asked about the exemptions regarding natural gas wells and combustion units. He wanted to know if there would be an air toxics violation when drillers flare methane after finding a pocket of natural gas. Ms. Holman responded that a flare would not be considered a combustion unit. She will review the recommendations for exclusion and get back with the chairs and the Mining and Energy Commission with their findings and new recommendations, if any.

Representative Samuelson asked if the downward trend in the presence of air toxins in North Carolina has any correlation to the economy. Ms. Holman responded that a small portion of the downward trend is due to plant closures, but the majority is due to the increased air toxins regulations and the plants following these new regulations.

Solid Waste Permit Study Report

Senator Rouzer recognized Mr. Michael Scott, Section Chief of the Solid Waste Section, Division of Waste Management, DENR. He gave his presentation with the aid of a PowerPoint which is included as Attachments #15 along with a memorandum from DENR giving recommendations on solid waste fee adjustments as Attachment #16.

Representative Samuelson asked about the difference between the two time frames of permitting, 5 and 10 year. Mr. Scott explained if an entity chose the 10-year permit, some consultants expect a cost savings due to the mobilization cost of obtaining the permit. Another factor is the longer permit time allows a 5-year review, which allows the entity to not feel as though they are always in a permitting cycle.

Representative Samuelson asked if the changed definition of a major modification was excluded, what would happen to the permitting process. Mr. Scott gave a hypothetical scenario explaining the entity would have to file for a permit amendment, which results in a higher cost to the entity. Some changes will require an amendment to the permit, but in an attempt to lower costs they are going to offer the major modification as well.

Representative Brisson asked what kind of impact this will have on the cities and counties that have contracts with landfills. Specifically, he wanted to know if the fee is based on 100,000 tons per year, overall tonnage, or just a one-time fee. Mr. Scott replied the Division has focused on the impact to local governments while most of the discussion has been from the private sector. They are not proposing any fee changes on the current 5-year permit, so there should be no impact; if the county chose the 10-year permit they would have to conduct their own cost analysis to determine if there is a potential cost savings.

Representative Brisson asked a follow-up question regarding whether the change in the permit fee schedule was revenue neutral. He then asked specifically about the large landfill in Sampson County and its permitting volume, and if the additional cost would be passed to the consumer. Mr. Scott stated that Sampson County is in the category of 'greater than 100,000 tons per year', thus they pay the current fee of $30,000 every 5 years. The reasoning is because their tonnage is in that specific category and all the fees paid go into the solid waste program account. In the recommendations, the 5-year or 10-year permits result in the entity paying the same amount.

Representative Samuelson asked about the differences in types of landfills, specifically industrial landfills. Mr. Scott explained that sanitary landfills include municipal solid waste landfills, construction demolition landfills, and industrial landfills. In North Carolina, there are 16 industrial landfills, mostly for the power industry, coal ash, pulp and paper, and one specifically for battery products.

Senator Jackson asked why the upfront fee for a 10-year permit is more expensive than 5-year permit. Mr. Scott responded the reasoning is due to using the current staff for both 5 and 10-year permits, whereas the 10-year permit requires more up front work by his staff than the 5-year permit. This change does not propose any

additional permitting staff; moreover it is a representative of the work that needs to be done and the funds necessary to carry out the work to perform these tasks.

Senator Jackson asked a follow-up question of why there is more work for a 10-year permit than a 5-year permit. Mr. Scott explained that staff, when working on a 5-year permit, looksat an engineering design, soil, and a geological study. For example, they could be dealing with regional landfills of 200+ acres. They are referring to it as if the staff would be reviewing all of the information for the facility at the onset of the permit. As one could imagine, doing this work for a 10-year phased construction will be higher than that of a 5-year phased construction.

Senator Jackson asked Mr. Scott how many industry representatives had been involved in discussions of proposed fees. Mr. Scott responded the group was made up of seven people. He stated they are also sending this information to additional people in private industry as well. To date, they have not received a lot of feedback about the 10-year permits. He did explain most of the facilities they are dealing with are multi-million dollar operations, and a difference of $28,000 is not a lot in the larger scope of their business.

Commission Report and Legislative Recommendations to the 2013 General Assembly

Senator Rouzer told the committee will review some proposed legislation and have Mr. Jeff Hudson review each section for the committee. They will then vote on each section individually. Ms. Jennifer McGinnis and Ms. Jennifer Mundt also gave some overview of the proposed legislation for the committee. The legislative recommendations discussed below are included as Attachment #17.

Adjust Landfill Permit Fee Timing

Mr. Hudson discussed and gave an overview of the proposed legislation to the committee; Senator Rouzer then asked for a motion from the commission.

Representative Samuelson moved for a favorable report to the General Assembly.

Senator Jackson asked about the fee schedule for 5 and 10-year permits and stated he did not believe the intent of the law was being executed.

Representative Gillespie responded to Senator Jackson, stating there has not been any opposition to the schedule and after much research he feels it should be recommended to have the opportunity to be debated in House and Senate committees during the next session.

Senator Rouzer brought the motion to a voice vote; all members were in favor, except Senator Jackson who voted 'no'.

DENR Support for Regional Water Supply System

Mr. Hudson discussed and gave an overview of the next portion of proposed legislation to the committee. In addition to the proposed legislation, a bill draft for water legislation is included as Attachment #18.

Representative Hackney asked if this new process make a voluntary action now mandatory. Ms. Robin Smith responded by stating the department has reviewed the language and does not have any problems. She added, the underlying structure of that provision means that the department has already participated in the identification of the preferred alternative.

Representative McGrady moved for a favorable report to the General Assembly. Senator Rouzer asked for any further discussion. The motion was brought to a voice vote; all members were in favor, except Representative Hackney who voted 'no'.

Bernard Allen Fund Modification

Representative Samuelson asked if we are using the full amount of the Bernard Allen Fund. Mr. Dexter Matthews responded stating they are having difficulty expending the funds because of the restrictions in the statute. The

proposal will allow them to expend the funds where they need, if local governments do not want to extend service to areas for a few residences.

Senator Rouzer asked for any discussion. Representative Gillespie moved for a favorable report to the General Assembly; the committee passed the motion unanimously.

Representative Gillespie gave background information, stating that the state has had a long-standing issue of trying to clean up orphan sites. He made a motion to recommend to the General Assembly an appropriation of $500,000 for cleanup of orphan sites and alternative drinking water. Currently, the program has $400,000 from the scrap tire tax. The State has approximately 324 sites, increasing by 55 sites per year. He estimates the additional appropriation would address about 25 sites per year.

Representative Samuelson commented about the confusion they had about the Bernard Allen Fund at previous meetings. She asked if Mr. Matthews could discuss fund Representative Gillespie's motion would address. Mr. Matthews explained the two funds: The Bernard Allen Fund provides water to low-income families, where the Inactive Hazardous Waste Fund goes beyond water. The particular fund that Representative Gillespie is referring to is the Inactive Hazardous Waste Fund.

Mr. Hudson reminded the commission that because there is no document before the members stating the request, it will be included as a separate recommendation in the final report.

Amend Environmental Laws 2013

Ms. Jennifer McGinnis explained this recommendation to the commission.

Representative Samuelson asked where the language came from and Ms. McGinnis responded saying it came from DENR.

Senator Rouzer asked for any discussion; seeing none, Representative Samuelson moved for a favorable report to the General Assembly. The commission approved the motion unanimously.

Uranium Mining Resolution

Ms. Jennifer Mundt discussed the letter and the instruction to draft the letter from the November ERC meeting. The proposed letter is included at Attachment #19.

Representative Samuelson stated that the legislative process in Virginia is ahead of North Carolina's legislative process and we want to make sure that the Virginia General Assembly is aware of our concerns while they are considering the issue of allowing uranium mining.

Representative McGrady asked if the resolution references the Roanoke River Basin Bi-State Commission. Mr. Hudson responded that the Commission was dormant for a number of years after it was established, but that it has recently become more active, perhaps due to this issue.

Representative McGrady thanked the leadership for their work on this and made a motion for a favorable recommendation of the resolution and letter.

Sedimentation Control/Financial Assurance

Ms. Jennifer McGinnis explained this recommendation.

Representative Gillespie discussed that the commission should not move forward with this, because their intent was to only move forward with unanimous decisions. He asked that they use it for informational purposes only to members.

Ms. Lisa Martin from the Homebuilders Association was then recognized to speak. She told the members of the commission that on behalf of North Carolina homebuilders they are opposed to the proposal. There is a situation in

the mountains in which the builder went bankrupt. However, this doesn't apply to all builders and this would negatively impact all builders for the actions of a few.

Representative Gillespie then stated to the commission that he had met with DENR regarding water legislation for regulatory reform. They are trying to figure out how to move forward with the issue and he will be filing a placeholder bill that will be worked out in the months in the future.

Senator Rouzer asked if any members had comments. Seeing none he moved to the next item.

Environmental Review Commission Report to the 2013 Regular Session

Representative Samuelson made a motion to approve the report, which was approved unanimously.

Commission discussion and announcements

Senator Rouzer thanked the members and staff and opened the floor for comments from the commission.

Representative Gillespie introduced Emily Wilson, a new House policy advisor on Speaker Tillis' staff. Representative Gillespie then gave an overview of his work on the water legislation he had mentioned earlier in the meeting and his outlook for this legislation.

Senator Rouzer recognized both Ms. Robin Smith and Ms. Kari Barsness and thanked them for their service given their upcoming departures. He then took a moment to thank the members for their service on the ERC as well as stated his appreciation to have the opportunity to serve as co-chair, and looks forward to working with them well into the future.

Adjournment

The meeting was adjourned at 11:25PM.

Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Attest:

Sarah Neunzig, Committee Clerk

ERC Committee Attachments

1	Member Attendance
2	Sergeants at Arms
3	Meeting Notice
4	Meeting Reminder
5	Agenda
6	Reports Memorandum
7	Visitor Registration Sheets (5)
8	October Meeting Minutes
9	November Meeting Minutes
10	Mining and Energy Commission Quarterly Update
11	Annual Report for the Mining and Energy Commission
12	NC Toxic Air Pollutant Reports
13	Air Toxics Reforms Recommendations
14	Air Toxics Report on Inspections, Audits and Examinations
15	Solid Waste Permit Study Report Presentation
16	DENR Recommendations on Solid Waste Fee Adjustments
17	Environmental Review Commission Report to the 2013 Session of the General Assembly
18	Bill Draft 2013-TPz-2 [v.6]; Short Title: DENR Support for Regional Water Supply System
19	Opposition to possible uranium mining in Virginia letter to Virginia Governor

ATTENDANCE

Environmental Review Commission

DATES	12/13/18														
Sen. David Rouzer (Chair)	✓														
Rep. Mitch Gillespie (Co-Chair)	✓														
Rep. Ruth Samuelson (Co-Chair)	✓														
Sen. Stan Bingham															
Sen. Dan Clodfelter															
Sen. Fletcher Hartsell	✓														
Sen. Brent Jackson	✓														
Sen. Bill Rabon															
Sen. Michael Walters															
Rep. William Brisson	✓														
Rep. Joe Hackney	✓														
Rep. Carolyn Justice															
Rep. Pat McElraft	✓														
Rep. Chuck McGrady	✓														
Rep. Roger West	✓														
Staff:															
Jeff Hudson	✓														
Jennifer McGinnis	✓														
Jennifer Mundt	✓														
Mariah Matheson	✓														

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General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
SENATOR DAVID ROUZER

REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

MEMBERS
SENATOR STAN BINGHAM
SENATOR DANIEL G. CLODFELTER
SENATOR DON EAST
SENATOR FLETCHER L. HARTSELL, Jr.
SENATOR BRENT JACKSON
SENATOR BILL RABON
SENATOR MICHAEL P. WALTERS

REPRESENTATIVE WILLIAM D. BRISSON
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JEFF CHERRY
COMMISSION COUNSEL

JENNIFER R. F. MUNDT
COMMISSION ANALYST

MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

November 20, 2012

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Sarah Neunzig, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at 9:30 a.m. on Thursday, December 13, 2012, in Room 643 of the Legislative Office Building, Raleigh, North Carolina.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Sarah Neunzig, Commission Clerk, at (919) 733-5748.

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
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SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

December 10, 2012

TO: Members of the Environmental Review Commission
Interested Parties

FROM: Jeff Hudson, Commission Counsel
Sarah Neunzig, Commission Clerk

RE: Notice of Meeting

The Environmental Review Commission will meet at 9:30 a.m. on Thursday, December 13, 2012, in Room 643 of the Legislative Office Building, Raleigh, North Carolina. The agenda for the meeting is expected to include a report on the activities of the Mining and Energy Commission, a report on recent amendments to the State air toxics program and recommendations for further changes, a report on the fee schedule for permits for sanitary landfills and transfer stations and recommendations for adjustments to the fee schedule in response to recently enacted legislation that extended the duration of those permits, and Commission consideration of legislative proposals for the 2013 Regular Session. Please note this agenda is tentative and subject to change.

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, at (919) 733-2578, or Sarah Neunzig, Commission Clerk, at (919) 733-5748.

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

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MARIAH B. MATHESON
COMMISSION ASSISTANT

CINDY HOBBS
SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

AGENDA

9:30 a.m. Thursday, December 13, 2012
Room 643 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Senator David Rouzer, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Approval of the minutes for the October 11 and November 15, 2012 meetings of the Commission *(5 minutes)*

5. Annual report on the activities of the Mining and Energy Commission (G.S. 113-391(e)) *(30 minutes)*
   Jim Womack, Chair
   Mining and Energy Commission

6. Presentation on the reports required by the State Air Toxics Program Reform legislation (Sections 3 and 4, S.L. 2012-91) *(20 minutes)*
   Sheila Holman, Director
   Division of Air Quality, Department of Environment and Natural Resources (DENR)

7. Presentation on the study of fee schedules for permits for sanitary landfills and transfer stations (Section 15.1, S.L. 2012-187) *(15 minutes)*
   Michael Scott, Chief, Solid Waste Section
   Division of Waste Management, DENR

8. Commission consideration of its legislative recommendations and report to the 2013 Regular Session of the 2013 General Assembly

   - Adjust Landfill Permit Fee Timing
   - DENR Support for Regional Water Supply System
   - Bernard Allen Fund Modifications
   - Amend Environmental Laws 2013
   - Uranium Mining Resolution
   - Sedimentation Control/Financial Assurance
   - Environmental Review Commission Report to the 2013 Regular Session of 2013 General Assembly

9. Commission discussion and announcements

10. Adjourn

ADDITIONAL INFORMATION:

Persons having questions about the Commission meeting or other matters related to the Commission may contact Jeff Hudson or Jennifer McGinnis, Commission Counsels, or other Commission staff at (919) 733-2578 or may visit the Commission's website at:
http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
Raleigh, North Carolina

CO-CHAIRS
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REPRESENTATIVE MITCH GILLESPIE
REPRESENTATIVE RUTH SAMUELSON

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SARAH NEUNZIG
SUSAN PHILLIPS
COMMISSION CLERKS

December 13, 2012

MEMORANDUM

To: Members of the Environmental Review Commission
From: Mariah Matheson, Commission Assistant
Re: Disposition of Reports

The following reports have been submitted to the Environmental Review Commission (Commission) since the last reports distribution on November 15, 2012. All reports are available online on the Commission website: **(http://www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=12&sFolderName=\ERC Reports Received)**. If you would like a hardcopy of one of these reports, please contact Mariah Matheson at (919) 733-2578 or **mariahm@ncleg.net** for assistance.

A. The following reports have been submitted and are being distributed in connection with today's agenda as follows.

Department of Environment and Natural Resources.

a. Annual report on the activities of the Mining and Energy Commission. October 1, 2012. Statutory Authority: G.S. 113-391(e). ***Agenda Item #5***

b. Report on air toxics reform recommendations under the State Air Toxics Program Reforms Act of 2012. December 1, 2012. Authority: S.L. 2012-91, Sec. 3. ***Agenda Item #6***

c. Annual report on the implementation of the State Air Toxics Program Reform Act of 2012. December 1, 2012. Authority: S.L. 2012-91, Sec. 4. ***Agenda Item #6***

d. Report on recommendations on solid waste permit fee adjustments. December 1, 2012. Authority: S.L. 2012-187, Sec. 15.1. ***Agenda Item #7***

B. The following reports have been submitted and may be distributed in conjunction with a presentation at a future meeting of the Commission.

Department of Environment and Natural Resources.

a. Annual report on the status of leaking petroleum underground storage tanks, the State cleanup fund, and the Groundwater Protection Loan Fund. November 1, 2012. Statutory

Authority: G.S. 143-215.94M, as amended by S.L. 2002-148, Sec. 7 and S.L. 2012-200, Sec. 23.

b. Annual report on fish kills in the previous year. December 1, 2012. Statutory Authority: G.S. 143B-279.7(c).

c. Annual report on the State Water Infrastructure Fund. November 1, 2012. Statutory Authority: G.S. 159G-26.

VISITOR REGISTRATION SHEET

Environmental Review Commission — 12-13-12

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Mike Abraizuskas	DENR-DAQ
Sheila Holman	NCDENR-DAQ
Trina Ozer	NCDENR
Robin Smith	DENR
Kari Barsness	DENR
Tom Beason	EDF
Jackson Cozart	NSS
Nadia Luhr	NC Conservation Network
Brooks Pearson	SELC
Dave Horne	S.A.

VISITOR REGISTRATION SHEET

Environmental Review Commission — 12-13-12

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Dexter Matthews	DENR - Division of Waste Management
Charlotte Jesneck	DENR - DWM
Jim Batteson	DENR - DWM
Michael Scott	DENR - DWM
ED Mussler	DENR - DWM
Bill Cary	DENR Gen. Counsel
FRANCES M NEWBOLD	DENR - DEMLR
W.E. Toby Vinson, Jr.	DENR - DEMLR
TRACY DAVIS	DENR - DEMLR
WALT HAVEN	DENR - DEMLR
Carter Shore	Smith + Gardner Inc.

VISITOR REGISTRATION SHEET

Environmental Review Commission — 12-13-12

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
[signature]	Agricultural Alliance of N.C.
George Everett	Duke Energy
MICK GREESON	DUKE ENERGY
PRESTON HOWARD	MCIC
JOHN GOODMAN	NC CHAMBER
Lu-Ann [signature]	CSS
Heather Barnett	Ward & Smith
Nancy Thompson	Weyerhaeuser

VISITOR REGISTRATION SHEET

Environmental Review Commission — 12-13-12

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Anca Grecav	OSBM
Ellis Powell	CAPA
Sharon Miller	CUCA
Vernon Cox	MCFCS
Erin Wynia	NCLM
Glenn Dunn	Poyner Spruill LLP
Kenneth Waldroup	City of Raleigh
Andrew Blackburn	Southern Strategy Group
George Smith	Nexsen Pruet
[illegible]	NP
MINA Shehee	DHHS

VISITOR REGISTRATION SHEET

Environmental Review Commission — 12-13-12

Name of Committee — **Date**

VISITORS: PLEASE SIGN IN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY AND ADDRESS
Joy Hicks	NCDA&CS
[illegible]	[illegible]
Beth Warren	AG's Office
Neldon Jones	[illegible]
[illegible]	[illegible]
Ken Melton	K.M.A.
Andy Chase	KMA
[illegible] Ranson	NCRMA
Lisa Martin	NC Home Builders
Doug Lassiter	NC Septic Tank Assoc
Jay Stem	NCAA

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
October 11, 2012

The Environmental Review Commission (ERC or Commission) met on Thursday, October 11, 2012 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Samuelson presided.

The following members were present: Representative Mitch Gillespie Co-Chair, Senator Stan Bingham, Senator Fletcher Hartsell, Senator Brent Jackson, Representative William Brisson, Representative Joe Hackney, Representative Carolyn Justice, and Representative Chuck McGrady. Also present were: Mr. Jeff Hudson, Ms. Jennifer McGinnis, and Mr. Peter Ledford, Commission Counsels; Ms. Mariah Matheson, Research Assistant; Ms. Susan Phillips, Commission Clerk; and Sergeants-at-Arms John Brandon, Martha Gadison, Steve Wilson, Anderson Meadows and Billy Fritcher.

On August 30, 2012, notice was sent to members and interested parties via e-mail. A copy of this notice is incorporated into these minutes as Attachment #1. Copies of the agenda for the meeting and visitor registration sheets are incorporated into these minutes as Attachment #2 and Attachment #3.

Call to order and introductory remarks

Representative Samuelson called the meeting to order and welcomed members, staff, and visitors in attendance. There were no introductory remarks made by the Commission Co-Chairs. Representative Samuelson recognized Jeff Hudson, Commission Counsel, for an overview of the meeting.

Quarterly Report by the Environmental Management Commission (EMC)

Representative Samuelson recognized Stephen T. Smith, Chairman, Environmental Management Commission (EMC), to make his presentation on the quarterly reports on the operations, activities, programs, and progress of the Environmental Management Commission from January 2012 through September 2012. These three reports are included in these minutes as Attachments #4, #5, and #6. Mr. Smith reviewed the highlights of the quarterly reports.

Senator Jackson asked which states were represented at the North Carolina Forum on Nutrient Over-Enrichment.

Mr. Smith said that presenters came from Florida, Mid-Atlantic, and the New England states. Mr. Smith offered to provide the Commission with the forum agenda and a list of the speakers (Attachments #7 and #8).

Representative Gillespie asked if the EMC has considered allowing selective timber cutting within a buffer if performed under the supervision of a forestry official.

Mr. Smith indicated that the EMC has not discussed this issue yet.

Ms. Robin Smith, Assistant Secretary of Environment and Natural Resources said that she would make a note of this and respond back to Representative Gillespie directly.

Representative Gillespie asked for information on the 303(d) list.

Mr. Smith replied that the 303(d) list is a section of the Clean Water Act. Periodically the State surveys waters to determine which waters should be designated as impaired. The Clean Water Act requires that a list of impaired waters be prepared and sent to the United States Environmental Protection Agency (U.S. EPA). The U.S. EPA either approves or disapproves the list and from that list each state develops a strategy to deal with those surface waters and the extent of their impairment.

Representative Gillespie asked how ecological flow is considered when creating a 303(d) list.

Mr. Smith responded that ecological flow is not considered when determining if a water body is classified as impaired under the 303(d) list. Ecological flow is a separate issue.

Representative Gillespie asked how the EMC creates a list of impaired waters and what methodology/criteria do they use to determine if a water body is impaired.

Mr. Smith replied that the methodology was developed by the Department of Environment and Natural Resources (DENR).

Rep. Gillespie asked that Ms. Smith speak to the methodology.

Ms. Smith said that there is not a single methodology for a single pollutant. For example mercury pollution is determined in a different way versus other metals. There are also water quality standards for most pollutants for North Carolina streams. The determination of impairment is based on the sampling set. Ms. Smith noted that the Division of Water Quality staff is more familiar with this subject and can make a future presentation to the Commission.

Representative Gillespie said that the Commission could hear a presentation on ecological flow in the November meeting.

Representative Gillespie asked if the General Assembly directed the EMC to prioritize and identify these impaired waters and create the methodology. According to Representative Gillespie, the statute directs the EMC to perform this function, not DENR.

Ms. Smith replied that she was not aware of any legislative direction with respect to impaired water designations. It was Ms. Smith's understanding that DENR is responding to the requirements of the Clean Water Act. There are State laws that direct DENR to act on a priority basis on certain types of programs. For example, DENR has very specific direction to act based on human health and environmental risks and prioritize contaminated sites.

Representative Gillespie directed Ms. Smith to G.S. 143B-282 where it reads that the EMC shall implement provisions of this subsection and will identify and prioritize the impaired waters. The EMC has recently requested public comment as to whether or not they should perform this task when the General Assembly has already directed the EMC to. Upon receiving the information from DENR, the EMC should identify and prioritize these waters.

Ms. Smith replied that these may be two separate issues. One issue is the designation of the waters as impaired. This is a technical determination of whether that water body is meeting water quality standards or not.

With regard to the EMC, the EMC is the body with the authority to address those impairments, but the designation as an impaired water is just a listing. The designation is based on water quality monitoring and is a list of impaired waters based on water quality data. It is the EMC's role to adopt standards or programs to address the impairment. Ms. Smith referred to Mr. Smith for additional comment.

Mr. Smith said that there are a number of things that the General Assembly has given the EMC statutory authority to do. One, for instance, is issuing air quality and water quality permits. Years ago the EMC delegated the permitting authority to staff because the EMC doesn't have the technical expertise or manpower to deal with the permit applications received. The actual review of permit applications, including both air and water, and issuance of those permits is a staff function. The development of the methodology for the 303(d) list has been delegated by the EMC to staff. It is highly scientific and technical. As the EMC has looked at the Statewide Total Daily Maximum Load (TDML) for mercury, the EMC had questions about the methodology. This has led the EMC to consider the statute and the extent to which the EMC should reassert itself into the development of the methodology for the 303(d) list. The EMC believes that a good first step is to ask for public comment. The EMC received an excellent set of comments from Progress Energy. However, the EMC cannot perform the entire methodology development. If the EMC needs to be involved in the development process, how much and to what extent? How much should the staff be delegated and what should the EMC do?

Representative Gillespie asked if the EMC vote on whether to delegate the development process to the State and then go to public comments.

Mr. Smith replied that it is likely that the EMC will ask for public comment as to the EMC's involvement in the development of methodology. Mr. Smith anticipates that the EMC will consider the extent to which the EMC should be directly involved with the methodology or if it should remain a staff function. The EMC will delegate to staff the portions that the EMC is not able to handle, which will be the bulk of it. There is also a question as to the extent to which the EMC engages in oversight of the process. The EMC believes that the best way to start the process is to ask for public comment, because there are people who have studied TDMLs, 303(d) lists, and methodologies for their careers. Some of whom are in the regulated community, the academic community, and State government.

Representative Hackney asked which statute Representative Gillespie was referring to.

Representative Gillespie referenced G.S. 143B-282(c) and (d). Representative Gillespie acknowledged that the EMC does not likely have the expertise needed for the development of the methodology for the 303(d) list, however, he asked if the EMC should vote and decide whether or not to delegate this function.

Representative Brisson asked about the report on the reclassification for water supply intake. Representative Brisson noted that the EMC did not specify the conditions of the river, for example, phosphorous levels. If shown, what percentage is due to city development versus agricultural development? Who is the high contributor?

Mr. Smith said that these changes were only related to public water intake, which is the local government's ability to take water out of the stream and is only for designation intake purposes. With regard to the quality of the streams, the EMC will send the Commission the requested river basin-wide report and the major contributors.

Representative Samuelson asked if there was any good news to report in changes in water quality.

Mr. Smith said that DENR issues a report every three years.

Senator Bingham asked Mr. Smith for a report on Polychlorinated Biphenyls (PCBs) in the Yadkin and Badin rivers.

Mr. Smith said that he would provide it to the Commission, which is included as Attachment #9.

Annual State Water Supply Plan Report

Representative Samuelson recognized Mr. Thomas A. Reeder, Director of the Division of Water Resources (DWR), DENR. Mr. Reeder presented the Annual State Water Supply Plan Report to the Commission. A copy of the presentation is included in the attachments to these minutes as Attachments #10 and 11#. At the conclusion of his presentation the members asked questions.

Mr. Reeder noted that there are several dozen water systems in the State that cannot account for 31% to 50% of their water and that there are several water systems that will require an interbasin transfer (IBT) by 2050.

Representative Gillespie asked if Mr. Reeder would provide a list of the water systems that will need IBTs by 2050.

Mr. Reeder said that he would provide the Commission with the specific water systems at the ERC meeting in November.

Representative McGrady asked if there was any linkage between the 37 water systems in the State that can't account for 31-50% of their water supply and the geographical location of those systems. Is this problem more prevalent in the mountain areas.

Mr. Reeder said that the water loss is partially due to geography, as the mountain region of the State may be subject to more water loss. Water must be pumped at increased pressures through mountainous terrain. In addition to geography, Mr. Reeder said that improper metering, antiquated systems, and lack of staff could contribute to pervasive water loss. Mr. Reeder noted that none of the major water systems have this problem.

Senator Hartsell asked if Mr. Reeder and DWR has been following the L&S Water Power, Inc. v. Piedmont Triad Regional Water Authority case pending before the North Carolina Supreme Court. If so, has DWR intervened.

Mr. Reeder replied that the Attorney General's office is following it and DWR has not intervened.

Senator Bingham asked if rising water levels in the aquifers will continue. If so, does that mean that the aquifers could return to 100%.

Mr. Reeder replied said that yes it could.

Senator Bingham asked about salt water incursion in the aquifers.

Mr. Reeder said that once salt water incursion occurs it is almost impossible to overcome the problems created. Nano filters and desalination are possibilities, but both processes are very expensive. North Carolina needs to use aquifers in a sustainable fashion so the aquifer does not depressurize.

Representative Samuelson asked how pressure can be increased in an aquifer.

Mr. Reeder explained how an aquifer works. The more water stored in an aquifer the more pressure it will have. As it recharges through rain water the pressure goes up.

Senator Bingham asked if some of these water systems have leakages. Could this be improved with efficiencies.

Mr. Reeder said that some water infrastructure in the State is so old that all water systems in North Carolina have leakages due to age. A lot of leakages occur because the water systems do not have the resources to manage their systems.

Representative Samuelson asked Mr. Reeder to describe the differences between the OASIS model versus the CHEOPS model. South Carolina is using the OASIS model, whereas the CHEOPS model is used for the Catawba river basin.

Mr. Reeder asked Mr. Tom France, Deputy Director of DWR for input. Mr. France replied that DWR is using CHEOPS model for the Catawba river basin and North and South Carolina, but once the updates are done both states are going to convert to the OASIS model for the future.

Representative Samuelson asked if the City of Raleigh can reallocate water quality storage into water supply storage.

Mr. Reeder replied that that is what the model allows DWR to do. DWR contacted the Army Corps of Engineers (Corps) and asked if DWR can do a reallocation study. The Corps is receptive. DWR is in the initial phase of beginning that study.

Report on the 2011 Agriculture Water Use Survey

Representative Samuelson recognized Mr. Vernon Cox, Environmental Programs Specialist of the Department of Agriculture and Consumer Services, to present a report on the 2011 Agriculture Water Use Survey. Mr. Cox's presentation is included as Attachments #12 and #13.

Senator Bingham asked about aquaculture withdrawals.

Mr. Cox explained that most of those withdrawals are for trout production throughout the State.

Senator Bingham said he did not think aquaculture would be counted as a withdrawal, as it's considered a flow-through.

Mr. Cox said that it is consistent with what DWR considers a withdrawal, similar to hydroelectric.

Senator Jackson asked if agriculture water use was 1% of the total State water usage.

Mr. Cox said that number was accurate.

Presentation on the State Erosion and Sedimentation Control Program

Representative Samuelson recognized Ms. Robin Smith and Mr. Tracey Davis, Division of Energy, Mineral and Land Resources, DENR, for a presentation on the State erosion and sedimentation control program. Mr. Davis' presentation is included in these minutes as Attachment #14.

Representative Gillespie asked about local programs delegated by the State and their schedule.

Mr. Davis replied that they are on a review schedule of every two years, if a problem is found they are placed on probation and the reviews are more frequent. If problems persist the State takes the program back.

Representative Gillespie asked if the Department has considered streamlining the review process using licensed engineers as opposed to unlicensed engineers.

Mr. Davis replied that a study was done several years ago. Plans submitted by licensed engineers were no better than plans submitted by unlicensed engineers. Mr. Davis explained the express permitting process and the benefit it offers. Mr. Davis indicated that DENR typically reviews plans within 20 days. DENR is educating the engineers and non-engineers on the requirements.

Representative McGrady noted that a higher percentage of mountain counties and jurisdictions have delegated programs.

Mr. Davis replied that most of the larger municipalities want to have control over their program. Some of the smaller municipalities do not. It's open to any county who wants to propose a plan. Mr. Davis is not sure why there are more delegated programs in the mountain areas rather than in the piedmont.

Representative McGrady observed that the State program is failing and the recommendations offered to help fix the program are not enough. There are not enough staff and funds to do the job. Representative McGrady asked about the State program's responsiveness. There needs to be a systematic look at this program.

Representative Hackney noted that there cannot be a successful sedimentation program without the staff to inspect the sites. The legislature has cut the program's staff.

Representative McGrady agreed with Representative Hackney with regard to the reduction of staff.

Plastics Recycling

Representative Samuelson recognized several people to discuss plastics recycling. Mr. Scott B. Mouw, Chief-Community and Business Assistance Section, Division of Environmental Assistance and Outreach, DENR, presented an update on the degradable plastic study. Attachment #15.

Senator Bingham asked about page nine of Mr. Mouw's presentation. What is the difference between high-density polyethylene (HDPE) and polyethylene terephthalate (PET) plastic bottles. Is the weight measurement in tons or pounds.

Mr. Mouw said that PET is mostly plastic bottles such as soda bottles and water bottles or single serve drink bottles. HDPE has the ability to have handles, such as milk bottles and laundry detergent bottles. The weight is measured in tons.

Senator Bingham asked if DENR considered placing a deposit on these bottles.

Mr. Mouw replied that DENR doesn't have an opinion on deposits. Ten states have deposits now. Some communities in North Carolina have incentive based programs to encourage recycling of bottles. One bottling company does a lot of work with some of the larger municipalities to give people incentives to recycle.

Representative Samuelson stated that Coca Cola did this in Charlotte.

Representative Hackney said that there has been an increase in jobs in the plastic recycling industry in recent years.

Mr. Mouw said that North Carolina has had major investments in plastic bottle reclamation. Plastic bottle recycling has doubled in the past five to six years. Every time DENR does a study on plastic bottle recycling they note a 5% increase in plastic reclamation jobs.

Next, Mr. Scott Booth, Chief Operating Officer, Envision Plastics, made a presentation about Envision Plastics and how they recycle polyolefin resins. His presentation is included in these minutes as Attachment #16.

Senator Bingham asked if Envision was able to recycle bottles that had contaminants, like motor oil, pesticides, or hazardous waste.

Mr. Booth said that plastic bottles with contaminants occasionally get mixed in with other bottles. It is a small percentage and not a huge problem. Envision deals with plastics coming from the consumer waste stream, so they do not usually deal with hazardous waste. Also, Envision Plastics has their own wastewater treatment system.

Senator Bingham asked how Envision Plastics separates plastics by color.

Mr. Booth said that they separate the colors through a flake process. For example, there are a whole rainbow of colors that can create the color blue.

Mr. Chris Bradley, Vice President of Operations, Clear Path Recycling, gave a presentation on degradable additives as a threat to plastics recycling. His presentation is included in these minutes as Attachment #17.

Representative Hackney asked what level of degradable plastic additives would contaminate the waste stream.

Mr. Bradley replied that 100 parts per million could be tolerated. Mr. Bradley said that there haven't been any studies done to verify this.

Senator Bingham asked about recycling feedstocks.

Mr. Bradley said that the plastic feedstocks are for Clear Path Recycling's customers.

Mr. Terry Turner, Product Development Manager, Unifi Inc, gave a presentation about Unifi and their product Repreve, which is a synthetic yarn. His presentation is included in these minutes as Attachment #18.

Senator Bingham asked if ultraviolet (UV) light adversely affects their product.

Mr. Turner replied that in cases of excess exposure to UV light there is an additive for UV protection.

Senator Bingham asked if Unifi makes some of the lumber products shown in the presentation.

Mr. Turner replied that a lot of the lumber products are mixed plastics and lumber fiber, so Unifi prefers not to use lumber products.

Dr. Charles J. Lancelot, Executive Director of the Plastics Environmental Council, spoke about inert biodegradable plastics in the recycling stream. His comments are included in these minutes as Attachments #19 and #20.

Senator Bingham asked if there are polyethylene products that are permanent.

Dr. Lancelot replied that most polyethylene products are permanent unless you add a degradable additive to them. There are polyethylene products used for military purposes that are not degradable.

Disposition of Reports Attachment #21

Commission discussion and announcements

Representative Samuelson offered to the Commission members some correspondence she received from Mr. Mike Pucci, Chairman, North Carolina Coalition Against Uranium Mining. This is included in these minutes as Attachment #22. Representative Samuelson advised the Commission that the next meeting would be on Thursday, November 15th at 9:30 am.

There being no further business, the meeting was adjourned at 1:10 PM.

Co-Chair Senator David Rouzer

Co-Chair Representative Mitch Gillespie

Co-Chair Representative Ruth Samuelson

Susan D. Phillips, Commission Clerk

MINUTES
ENVIRONMENTAL REVIEW COMMISSION
November 15, 2012

The Environmental Review Commission (ERC or Commission) met on Thursday, November 15, 2012 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Gillespie presided.

The following members were present: Chair, Representative Mitch Gillespie Co-Chair, Representative Ruth Samuelson, Senator Fletcher Hartsell, Senator Brent Jackson, Representative William Brisson, Representative Carolyn Justice and Representative Chuck McGrady. Mr. Jeff Hudson, Commission Counsel, Ms. Jennifer Mundt, and Ms. Jennifer McGinnis, Commission Analyst, Ms. Mariah Matheson, Research Assistant, Mr. Peter Ledford, Attorney and Mr. Jeff Cherry, Bill Drafting Attorney; and Ms. Sarah Neunzig, Commission Clerk, Sargent-at-Arms. Attachment #1 and #2.

On October 29, 2012 and November 8, 2012, notices was sent to members and interested parties via e-mail. Copies of the notices are included in the attachments to these minutes as Attachment#3 and #4. Copies of the agenda for the meeting and visitor registration sheets are included in the attachments to these minutes as Attachment #5 and Attachment #6, respectively.

Call to order and introductory remarks

Representative Gillespie called the meeting to order and welcomed members, staff, and visitors in attendance. He recognized Ms. Robin Smith from DENR and her planned retirement. She gave a few words and was recognized by the members and visitors.

Representative Gillespie then recognized his Co-Chair, Representative Samuelson, for introductory remarks. He then recognized Mr. Jeff Hudson, Commission Counsel, to provide an overview of the meeting agenda. Mr. Hudson reviewed the agenda: Development and prioritization of the State's impaired waters, Determinations for development of hydrologic models of ecological flow, Uranium mining in Virginia and its potential impacts on North Carolina, Update on the L&S Hydro v Piedmont Triad Regional Water Authority litigation, and the annual report on the Inactive Hazardous Sites Program.

Representative Gillespie then asked if there were any questions and seeing none he proceeded.

Presentation on development on prioritization of the State's list of impaired waters

Representative Gillespie recognized Mr. Chuck Wakild, Director of the Division of Water Quality, Department of Environment and Natural Resources (DENR). He gave a basic explanation through the use of his PowerPoint presentation of the "303(d) List" Process. A copy of the presentation is included in the attachments to these minutes as Attachment #7. Mr. Wakild asked if members had questions.

Representative Samuelson asked about municipal water quality standards and their relation to the state's standards. Mr. Wakild responded that the results reported to the EPA are based on the state standards, regardless of any additional or different municipal standards.

Representative Samuelson asked a follow-up question if there are any municipalities or counties that have more strict water quality standards than the state standards. Mr. Wakild responded that to his knowledge there are none stricter than the state's regulations. The qualifications in obtaining a permit are based on state standards, not municipal or county.

Representative Justice mentioned the 35 sampling sites along the Cape Fear River that are maintained through University of North Carolina at Wilmington (UNCW) and wanted to know if the data from those sites are included in his data. Mr. Wakild responded that these sites' information is included in this evaluation process.

Representative Justice followed up by explaining that some of these sites were started by a combination of local government support and private industry funding. The data found by these private industries might help us identify potential future industry along our rivers without harm to our water quality.

Representative Gillespie asked the result of the vote on the changes to the 303(d) list process from EMC. Mr. Wakild stated he believed it was a unanimous vote, but he will follow up with confirmation.

Representative Samuelson asked whom are the interested parties and how does the agency know if they are reviewing and commenting on the processes. Mr. Wakild stated that the most interested parties are people with permits, with a general concern about water quality, environmentalists and municipalities. The most interested parties have been utilities and local governments. These parties are kept abreast of their information via list serves and public notices on their website.

Representative Brisson asked how the state maintains the data from the large number of sites across the state. Mr. Wakild explained there is an ambient network across the state, where several hundred sites are visited by a DWQ person once a month. Other sites are visited once a year and some every five years. The frequency of visits is dependent upon the parameters which the Division is looking into or researching. He also explained that some private industries are taking their wastewater discharge and sending their samples to a private lab or do it in house at their own cost. They will then send this data to the agency for additional data collection. Other entities that do their own research also contribute to the state's data such as universities, other agencies, and the US Geological Survey. When the data is presented to the public it is shown in five year slices including the data from each of these sources across the state.

Representative Brisson followed-up by asking if all bodies of water are governed by the federal guidelines and if the state exceeds these guidelines. Mr. Wakild explained the federal Clean Water Act was established and allowed each state to create its own guidelines. North Carolina did that and our standards were approved by the EPA.

Senator Hartsell asked what verification DENR has used to state "NO" as the response to the question if any state land is involved in the Yadkin River. He asked Mr. Wakild to provide the Commission some verification how DENR has proved that this is not state-owned land.

Senator Jackson asked how to compare the state's guidelines with the neighboring states to North Carolina. Mr. Wakild responded that in the major areas they are similar and easily comparable. He will provide a copy of that information to all Commission members.

Presentation on ecological flow determinations for development of hydrologic models

Representative Gillespie recognized Mr. Thomas Reeder, Director of the Division of Water Resources, DENR to speak on ecological flows and their multiple uses throughout the state. The PowerPoint presentation is included as Attachments #8 and #9 respectively.

Representative Gillespie asked Mr. Reeder to discuss the Science Advisory Board meetings and is there time and opportunity for public. Mr. Reeder stated that they are publicly streamed on website and are kept for the public.

Representative Gillespie asked when grants are given for water supply and if points are given to these facilities. Mr. Reeder responded that yes, priority points are given.

Senator Hartsell asked what the percentage of use is in a typical municipal system. Mr. Reeder responded that there are some systems in NC that draw water and then go to a septic system, which is 100% water loss. The average typical municipal system with sewer system returns around 60% of the water into the sewer system. This percentage will vary from city to city; the agency is routinely communicating and collecting data regarding water loss. If we find a certain city is losing more than normal, the agency will assist with that municipality.

Representative Justice asked what the priority points do and their purpose. Mr. Reeder responded that there is an application for the Drinking Water Assistance Program, and there are routinely more requests than money available. So priority points are assigned to aid in the ranking system to determine which get assistance and have a higher need than others.

Representative McGrady asked if part of the problem of water loss in the mountain area is due to the topography. Mr. Reeder agreed and said topography contributed to water loss. He also stated there are multiple small towns in the mountains that have old infrastructure which contributes to water loss due to their water leaks. Yes, it is contributing to their water loss. Lots of old infrastructure and water leaks without funds to fix and causing large amounts of water loss. The pressure changes and hills contribute to loss too.

Uranium mining in Virginia and its potential impact on North Carolina

Representative Gillespie recognized Mr. Thomas Reeder, Director of the Division of Water Resources, DENR. Mr. Reeder addressed the location of the mining in Virginia, the current mining ban in Virginia, and North Carolina's actions to date, Attachment #10.

Representative Gillespie asked if this information has been included in the transition documents to the new governor and General Assembly members. Ms. Robin Smith commented and said she cannot remember if this was included, if she finds that it was not, she will be sure to send a separate document to highlight the importance of this issue.

Representative Samuelson asked if Mr. Reeder can send his report to the incoming congressional delegation so they can meet with the delegation from Virginia. She then posed a question to Chair Gillespie if the Commission can help in recommending something to the 2013 General Assembly members and the governor.

Representative Gillespie directed staff to prepare a letter to send to the State's Congressional delegation and a joint resolution to consider for recommendation to the 2013 Session of the General Assembly to oppose lifting the current ban on uranium mining.

Report on the L&S Hydro v Piedmont Triad Regional Water Authority

Representative Gillespie introduced Mr. Richard Whisnant, Associate Professor of Public Law and Government from the School of Government at the University of North Carolina at Chapel Hill. His remarks are included in the minutes as Attachment #11.

Representative Samuelson asked about permitting for large water users and if he can clarify how this works. Mr. Whisnant explained that some permit the withdrawer of water and some permit the user of the water. Every state looks at it differently and some do it both ways. The user that pulls the water from the stream, whether it a municipality or not, is responsible for the water use, the example given was the City of Charlotte.

Representative McGrady questioned the legal theory of eminent domain for water rights. Mr. Whisnant gave his opinion that the Court of Appeals looked at the laws from the 1970s and saw that they treat the parties of eminent domain differently in relation to property rights. He feels they want to spread the cost over everybody upstream for the one that is injured downstream.

Annual Report on the Inactive Hazardous Sites Program

Representative Gillespie introduced Mr. Dexter Matthews, Director of the Division of Water Management in DENR. Mr. Matthews gave his overview of the program and some recommendations and highlighting a site outside Wake Forest that is a good example of what they are dealing with across the state. His presentation is included in the minutes as Attachment #12, #13 and #14.

Ms. Jennifer McGinnis asked if Mr. Matthews would provide the staff with his recommendations.

Representative Justice questioned the increase in money to extend the water lines and if it would benefit others in the community or is the benefit confined to the one house that was improved. Mr. Matthews responded that water lines can be extended and neighbors can benefit from extension of lines.

Representative Samuelson asked about the changes and amounts of the Bernard Allen Fund. If the legislature changed the amounts and it decreases the number, what impact would that have on the success of the Fund and if there should be a concern about abuse of the program, which would then cause them to legislate limits? Mr. Matthews suggests that there should be a level that is allowed per household. The change would allow his agency to spend more on isolated instances where more remote wells are located. He assured the Commission that the funds are all being used every year and there are many sites, and that some high risk sites that are not being visited due to funding limitations.

Representative Samuelson, follow-up question concerning recent legislation which stated a risk based cleaned up should be implemented, did this legislation help. Mr. Matthews responded that it has not helped this program directly.

Representative Samuelson, follow-up, regarding a constituent complaint about continual paperwork after they received a 'no further action' notice. Mr. Matthews will look into it specifically, the only way it would continue is if there are land use restrictions in place on the property.

Disposition of Reports, Attachment #15

Commission discussion and announcements

Representative Gillespie thanked the members and staff, and announced the next meeting to be held in December, the specific date to be sent to the Commission members when final. Recommendations from the ERC on how the General Assembly will move forward during the next session. The Chair requested members are to bring their recommendations or deletions to the December meeting for their input.

Adjournment

Representative Gillespie adjourned the meeting at 12:25PM.

Chair Representative Mitch Gillespie

Co-Chair Senator David Rouzer

Co-Chair Representative Ruth Samuelson

Attest:

Cindy Hobbs, Committee Clerk

NC Mining and Energy Commission

Quarterly Update for: Environmental Review Commission Dec 13, 2013

Presented by:
Commissioner Jim Womack, Chairman
North Carolina Mining & Energy Commission

NCDENR

Reporting

- **Annual and quarterly reports to the Joint Legislative Commission on Energy Policy and the Environmental Review Commission**
  - First annual report provided by October 1, 2012
  - First quarterly report is due by January 1, 2013

    (In Preliminary Draft Now)

NCDENR

Standing Committees

- **Two standing committees established by Senate Bill 820:**
  - Committee on Mining
  - Committee on Civil Penalty Remissions

NCDENR

Additional Standing Committees

- **Environmental Standards**
  - Hydrogeological investigations, collection of baseline data, well siting, setbacks, fracturing fluids, etc.
- **Water and Waste Management**
  - Limits on water use, water and wastewater management plan, waste disposal, etc.
- **Administration of Oil & Gas**
  - Pre-drilling activities, well construction, record keeping, well spacing, etc.
- **Rules**
  - Rules properly formatted, integrated

NCDENR

Study Groups

- Funding Levels and Sources
- Local Government Regulation
- Compulsory Pooling

NCDENR

Stakeholder Group

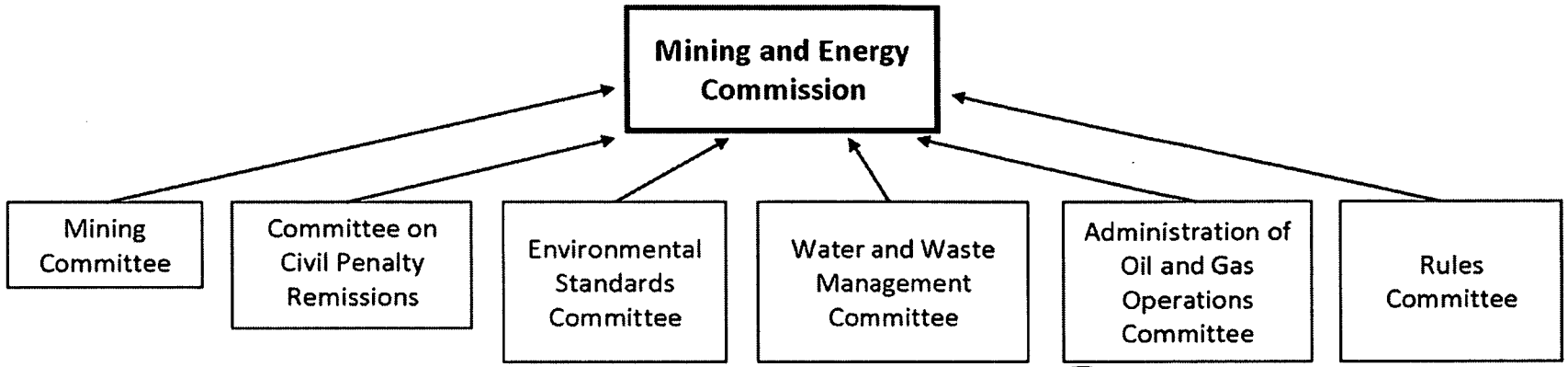
- A group of individuals who represent the various stakeholder interests related to oil and gas management in North Carolina
- Meetings would occur as needed, perhaps every other month, starting with an orientation
- Meetings could be less frequent if the MEC does not need input at a particular stage in the process

NCDENR

Stakeholder Group (continued)

- To make discussions productive, membership would be limited to 20 to 25 people
- Group would disband once rules are adopted and regulatory program is established

NCDENR



Study #1: Funding Levels and Potential Funding Sources

Includes: MEC members, DENR, DOT, N.C. League of Municipalities (NCLM), N.C. Association of County Commissioners (NCACC)

Study #2: Local Government Regulation

Includes: MEC members, DENR, NCLM, NCACC

Study #3: Compulsory Pooling

Includes: MEC members, DENR, Department of Justice

Stakeholder Group

- Members of the MEC
- DENR staff to take notes and facilitate
- 2 representatives of municipalities in the Triassic Basin
- 2 representatives of counties in the Triassic Basin
- 1 county health director from the Triassic Basin
- 3 environmental interest representatives
- 1 agricultural interest representative
- 1 from Consumer Protection Section of the Department of Justice
- 1 representative of Rural Advancement Foundation International-USA
- 1 representative from American Petroleum Institute
- 1 representative from America's Natural Gas Alliance
- 3 scientific and technical experts
- 1 each from the Divisions of Air Quality; Energy, Mineral and Land Resources; Waste Management; Water Quality; and Water Resources
- 1 each from the Department of Transportation, Department of Health and Human Services, Department of Labor, Department of Commerce, Division of Emergency Management, Department of Agriculture and Consumer Services, and Wildlife Resources Commission

MEC Meetings To Date:

- **September 6, 2012** *(orientation meeting)*
- **September 28, 2012** *(committee structure)*
- **November 2, 2012** *(operating procedures and committee and study group appointments)*
- **Next meeting:**
  - Committees & Study Groups* meet December 18
  - Mining & Energy Commission meets December 19

**Compulsory Pooling Study Group meets after MEC Dec 19*

NCDENR

2013 MEC Meeting Schedule:

- January 24-25
- March 7-8
- May 2-3
- June 6-7
- July 25-26
- September 5-6 (Final Meeting Before Study Group Reports Due)
- October 24-25
- December 5-6

NCDENR

Ongoing Actions

- Hiring 3 DENR Staff to Support Committees in the Rulemaking Process
- Changes in Commission Membership
- Expansion Budget Request
- Communication
- Education & Web Publishing
- Public Relations

NCDENR

To stay abreast of the activities of the Mining and Energy Commission

Join the Shale Gas Listserv at:
http://lists.ncmail.net/mailman/listinfo/denr.shale.gas
Or
Visit the Mining and Energy Commission web page at:

http://portal.ncdenr.org/web/mining-and-energy-commission/home

NCDENR

Questions?

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NCDENR



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chairman
The Honorable Mitch Gillespie, Co-Chairman
The Honorable Ruth Samuelson, Co-Chairman

JOINT LEGISLATIVE COMMISSION ON ENERGY POLICY
c/o The Honorable Phil Berger, President Pro Tempore of the Senate
c/o The Honorable Thom Tillis, Speaker of the House

SENATE APPROPRIATIONS SUBCOMMITTEE ON NATURAL AND ECONOMIC RESOURCES
The Honorable Don East, Co-Chairman
The Honorable Brent Jackson, Co-Chairman
The Honorable David Rouzer, Co-Chairman
The Honorable Harris Blake, Vice Chairman

HOUSE APPROPRIATIONS SUBCOMMITTEE ON NATURAL AND ECONOMIC RESOURCES
The Honorable Carolyn Justice, Chairman
The Honorable Roger West, Chairman
The Honorable Efton Sager, Vice Chairman

FISCAL RESEARCH DIVISION
Mark Trogdon, Director

FROM: Robin Smith
Assistant Secretary for the Environment

SUBJECT: Annual Report on Activities Conducted Pursuant to S.L. 2012-143

DATE: October 10, 2012

Pursuant to General Statue 113-391(e), the Division of Energy, Mineral and Land Resources shall submit to the Environmental Review Commission, the Joint Legislative Commission on Energy Policy, the Senate and House of Representatives Appropriations Subcommittees on Natural and Economic Resources, and the Fiscal Research Division of the General Assembly a report on its activities conducted pursuant to Session Law 2012-143 on or before October 1st of

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
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each year. Please consider the Annual Report on Activities Conducted Pursuant to S.L. 2012-143 attached as the formal submission of this report.

If you have any questions or need additional information, please contact me by phone at (919) 707-8619 or via e-mail at Robin.W.Smith@ncdenr.gov.

cc: Kari Barsness, Director of Legislative Affairs
Tracy Davis, Director, Division of Energy, Mineral and Land Resources
Kristin Walker, Fiscal Research Division
Lanier McRee, Fiscal Research Division
Mariah Matheson, Research Division

N.C. Department of Environment and Natural Resources

Annual Report on Activities Conducted Pursuant to Session Law 2012-143

Oct. 5, 2012

Session Law 2012-143 was ratified on July 2, 2012, and directed the Department of Environment and Natural Resources to undertake a number of responsibilities, including:

1. Staffing the newly created North Carolina Mining and Energy Commission, a group of 15 members tasked with establishing a modern regulatory program for the management of oil and gas exploration and development in the State by Oct. 1, 2014;
2. Administering and enforcing laws developed under S.L. 2012-143;
3. Assisting the Mining and Energy Commission in the development of three studies by Oct. 1, 2013:
    i. Appropriate levels of funding and potential sources for that funding, including permit fees, bonds, taxes and impact fees, necessary to support local governments impacted by the industry and associated activities; address expected infrastructure impacts, including, but not limited to, repair of roads damaged by truck traffic and heavy equipment; cover any costs to the State for administering an oil and gas regulatory program, including remediation and reclamation of drilling sites when necessary due to abandonment or insolvency of an oil or gas operator or other responsible party; and any other issues that may need to be addressed in the Commission's determination.
    ii. The issue of local government regulation of oil and gas exploration and development activities, and the use of horizontal drilling and hydraulic fracturing for that purpose.
    iii. Current North Carolina law and the laws of others states on the issue of compulsory pooling.
4. Coordinate the adoption of rules required to be adopted by Oct. 1, 2014, by the Mining and Energy Commission, the Environmental Management Commission and the Commission for Public Health. These rules must be adopted in an open and collaborative process that includes input from scientific and advisory groups, consultation with numerous stakeholders and broad public participation.
5. Identify the location of all water supplies, including wells, on a property on which drilling operations are proposed to occur. When requested by a surface owner, the Department must sample wells located on their property, in lieu of sampling conducted by the oil or gas developer or operator (with reimbursement to the Department provided by the oil or gas developer or operator).
6. In consultation with the N.C. Department of Justice, Consumer Protection Division, establish and maintain a registry of landmen operating in North Carolina.

Since S.L. 2012-143 became law, the Department has conducted the following activities:

- Contacted members of the Mining and Energy Commission and organized an orientation meeting for Sept. 6, 2012. An agenda and minutes from this meeting are included as attachments to this report.
- Assisted the Commission in its second meeting, held Sept. 28, 2012.
- Provided support to the Commission.
- Developed a draft work plan for the Commission, a proposed standing committee structure, and a meeting schedule. These items were presented at the Commission's second meeting on Sept. 28, 2012.
- Met with staff from the N.C. League of Municipalities and the N.C. Association of County Commissioners to discuss ways to involve stakeholders in the development of rules and to work cooperatively on the studies that address issues of interest to local government.
- Started the process of hiring three positions authorized in the Appropriations Act of 2012 to support the work of the Commission. As of Sept. 25, one of the three positions (an Environmental Senior Specialist) has been posted. The other two positions (an Environmental Supervisor III and a Hydrogeologist) have more recently received the final budget and personnel approvals and will be posted by Oct. 5, 2012.
- Developed a registry of landmen and an application for registration.

#12

NC Toxic Air Pollutant Reports
(pursuant to Session Law 2012-91)

North Carolina Division of Air Quality

Environmental Review Commission Meeting
December 13, 2012

Air Toxics – Summary

Section 1

- Exempts sources subject to certain federal regulations
- Codifies "Director's Call" provision

Section 2

- Requires rule amendments

Section 3

- Requires review of rules and their implementation

Section 4

- Requires reports on implementation of this act

Air Toxics – Section 4

- Requires DAQ report to the ERC on the implementation of this Act
  - December 1, 2012, 2013 and 2014
  - The report shall include an analysis of air toxic emission changes and a summary of results of the Division's analysis of air quality impacts.

Implementation of Air Toxics Legislation

- June 28, 2012-October 28, 2012
- 12 of 115 (10.4%) applications triggered DAQ review
- Analysis of review

Emission Analysis	Rely on Previous Modeling Analysis	Facility Voluntarily Submitted Modeling	Director's Call
4	6	2	0

Implementation of Air Toxics Legislation

- **Pollutants commonly encountered during review:**

Toxic Air Pollutant	Number of Instances >1
Formaldehyde	5
Arsenic	4
Beryllium	4
Cadmium	4
Nickel	4
Manganese	4
Benzene	2
Fluorides	2

NC Air Toxics Emissions

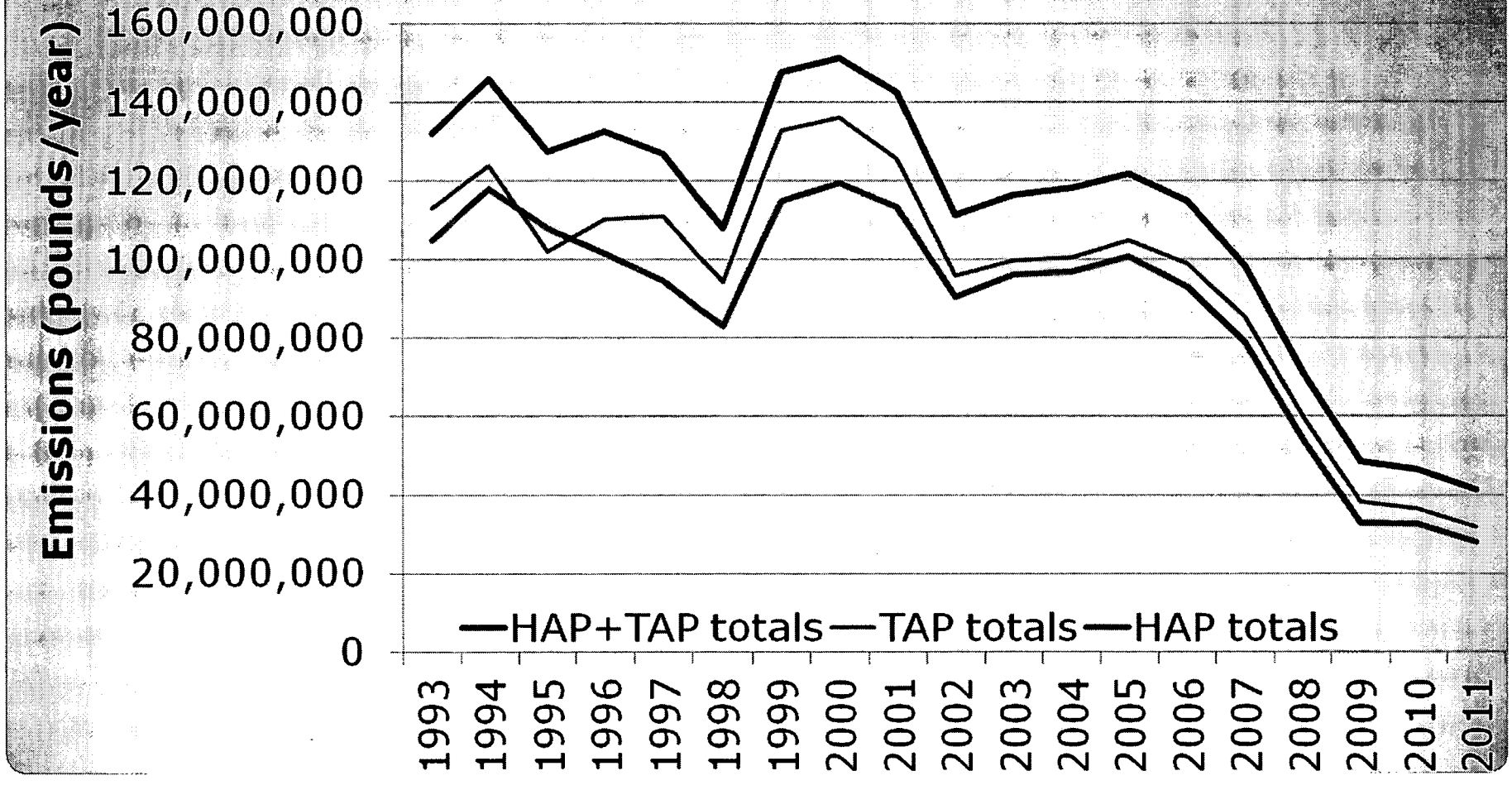
	CY2009	CY2010	CY2011
TAP Only (pounds/yr)	38,142,325	36,385,525	31,712,917
HAP Only (pounds/yr)	32,774,769	32,604,346	27,977,691
HAP + TAP (pounds/yr)	48,493,673	46,497,405	41,410,502

TAP = 97 Toxic Air Pollutants regulated by NC State Air Toxics Rule
HAP = 187 Hazardous Air Pollutant regulated under 40 CFR Part 61 & 63
HAP + TAP = 111 unique HAPS added to the 97 TAPs.

Note: CY2011 represents emissions reported for 2011 operating year or the most currently reported year. Emissions inventories for several facilities have yet to be reviewed and/or submitted.

Source: Annual toxic air emissions reported by North Carolina facilities to the Division of Air Quality

Trends in NC Air Toxics



Source: Annual toxic air emissions reported by North Carolina facilities to the Division of Air Quality

Air Toxics – Section 3

- Requires DAQ to review the State air toxics rules and their implementation to determine whether changes could:
  - Reduce unnecessary regulatory burden
  - Increase the efficient use of DAQ resources while maintaining protection of public health
- Conduct the review in consultation with interested parties
- Report the results of the review and include recommendations to the ERC by 12/1/12

Recommendations for Rule Changes

1. Develop an additional set of emissions thresholds for pollutants coming from unobstructed vertical stacks
2. Exempt natural gas and propane combustion units
3. Exempt emergency engines
4. Eliminate SIC call
5. Clarify use of actual rate of emissions
6. Remove the term "unadulterated wood" from rules

1. Develop additional toxic permitting emission thresholds

- Develop an additional set of emissions thresholds for pollutants coming from unobstructed vertical stacks
  - Additional thresholds may be 5-7 times higher than current thresholds
  - Health based standards stay the same.

Impact:

- Fewer facilities modeling

2. Exempt natural gas and propane combustion units

- US EPA has exempted certain gas-fired combustion units from federal air toxics rules. Another federal rule only prescribes work practice standards on affected units.

- Toxic air emissions from these sources are well below the TPERs.

Impact:

- Up to 150 facilities have sources that may qualify for this exemption.

3. Exempt emergency engines

- US EPA federal air toxics rules apply to all emergency engines and only prescribe work practice standards.
- Used temporarily in emergency situations.
- Small.
- Few hours of operation.
- Peak shaving engines are not considered emergency engines.

Impact:

- Up to 150 facilities have sources that may qualify for this exemption.

4. Eliminate SIC call

- 15A NCAC 02Q .0705 provides a mechanism for the Director to require all facilities under the same four-digit Standard Industrial Classification (SIC) to submit an application to comply with the NC air toxics rules.
- The existing Director's Call rule and SL 2012-91 provide adequate authority to address any unacceptable risks to human health from any facility.

5. Clarify use of actual rate of emissions

- Clarify in the rule to ensure that DAQ is implementing it consistently.

6. Remove term "unadulterated wood" from rules

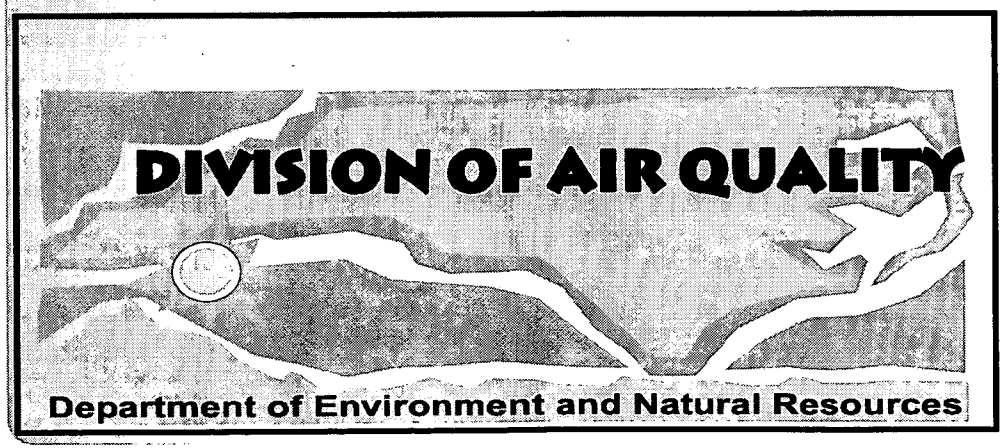
- **Elimination of this term will prevent confusion with definitions for combustion sources in federal rules.**

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NCDENR
North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FROM: Kari Barsness KKB
Director of Legislative and Intergovernmental Affairs

SUBJECT: Air Toxics Reforms Recommendations

DATE: December 4, 2012

Section 3 of Session Law 2012-91 requires the Division of Air Quality to determine whether changes could be made to the state air toxics rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of division resources while maintaining protection of public health. The division shall report the results of its review, including recommendations to the Environmental Review Commission no later than December 1, 2012. Please see the attached information to satisfy this reporting requirement.

If you have any questions or need additional information, please contact me by phone at (919) 707-8618 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Robin Smith, Assistant Secretary for Environment
Sheila Holman, Division of Air Quality
Jennifer Hoffmann, Fiscal Research Division
Mariah Matheson, Research Division

Review of the North Carolina Air Toxics Rules

A Report to the
Environmental Review Commission

Submitted by the Department of Environment and Natural Resources
Division of Air Quality

This report is submitted pursuant to the requirement of Section 3 of Session Law 2012-91, House Bill 952.

December 1, 2012

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EXECUTIVE SUMMARY

Session Law 2012-91 provides an exemption from North Carolina's air toxics rules for certain sources of toxic air pollutants as long as the Division of Air Quality (DAQ) determines that the emissions from that facility will not pose an unacceptable risk to human health. Additionally, Section 3 of the session law requires DAQ to review the existing air toxics rules and make recommendations to the Environmental Review Commission by December 1, 2012, on whether further changes could be made that would reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining public health protections. This report addresses the Section 3 requirements and identifies six recommendations that have been developed through a stakeholder process.

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INTRODUCTION

The state air toxics rules administered by the Division of Air Quality (DAQ) were established in the early 1990s in the absence of an effective federal program to protect citizens from adverse health effects from exposure to toxic air pollutants. In the 20-plus years since, the United States Environmental Protection Agency (USEPA) has issued more than 100 national air toxics standards. The federal standards for existing sources of pollution represent stringent control levels reflecting the 12-percent best-performing units across the nation. For new sources, the federal standards require emissions control currently achieved by the best-controlled similar source. As a result of state and federal actions, toxic air emissions in North Carolina decreased by 62 percent between 1998 and 2011. Facilities required to comply with federal standards rarely have had to install additional pollution control equipment to meet the state air toxics rules.

In 2012, the General Assembly amended the statutes that authorize the state air toxics rules (See Appendix A). Session Law 2012-91 provides an exemption to the air toxics rules for any air emission source that is subject to any requirement under either:

- Regulations established by the USEPA that require sources of toxic air pollutants to control emissions of toxic air pollutants through the use of maximum achievable control technologies or generally available control technologies.
- State permits that establish case-by-case emission limits for toxic air pollutants pursuant to Section 112(j) of the Clean Air Act, which requires states to establish toxic emission standards when EPA fails to do so for a given industrial sector.

The session law, however, requires DAQ to review permit applications that result in a net increase in toxic air pollutants to ensure the emissions will not pose an unacceptable risk to human health. If DAQ finds that emissions from a facility will pose an unacceptable risk to human health, the facility must comply with state air toxics rules even if it falls within one of the two exempt categories.

Additionally, Section 3 of the session law requires DAQ to review the existing air toxics rules and make recommendations by December 1, 2012, on whether changes could be made that would reduce unnecessary regulatory burden and increase the efficient use of division resources while maintaining public health protections. The review and set of recommendations contained in this report are pursuant to Section 3 of S.L. 2012-91.

CURRENT AIR TOXICS RULES

The state air toxics rules administered by the Division of Air Quality (DAQ) were established in the early 1990s in the absence of an effective federal program to protect citizens from adverse health effects from exposure to toxic air pollutants. North Carolina's health risk-based air toxics rules provide for local scale evaluation of the maximum impact of air toxic emissions from a facility at or beyond its property boundary through site-specific emissions estimates and modeling. It is designed to protect public health by minimizing exposure to (and the resulting risk from) toxic air pollutants emitted from the entire facility.

The rules are designed around a set of Acceptable Ambient Level (AAL) guidelines. "Acceptable" in this context is intended to be a level "below the concentration that would produce adverse health effects in sensitive subgroups of the general population." Regulated pollution sources are required by North Carolina air toxics rules to reduce emissions of toxic air pollutants below those levels that are predicted to exceed the AAL beyond their property line. The rules allow the use of computer-based air dispersion models to compare the impact of toxic air pollutant emissions to the appropriate AAL.

Currently, the Secretary of Environment and Natural Resources maintains a scientific body of experts known as the Science Advisory Board (NCSAB) whose job it is to continually review the scientific information that forms the basis of the AALs. As this information changes, the NCSAB recommends updates to the AALs. The NCSAB reviews are focused on recommending safe exposure concentrations for toxic air pollutants that allow an ample margin of safety for people with potential exposures. The NCSAB is composed of eight individuals, appointed to four-year terms, having expertise in environmental health, occupational and pediatric medicine, toxicology, risk assessment, exposure assessment, epidemiology and biostatistics. The NCSAB meets regularly to perform risk assessments on toxic air pollutants emitted in North Carolina. Its final recommendations are considered by DAQ in drafting rules for AAL concentrations for 97 toxic air pollutants. Any changes to the AALs go through the normal rulemaking process with the Environmental Management Commission making the final decision.

Determining what exposure level to a toxic air pollutant is acceptable is very challenging. The approach used by health assessment professionals is to carefully study what is known about a pollutant in order to determine if it is a carcinogen or not. Next they identify the lowest level known to harm people or the highest level at which health effects are not observed. Then, from one of these starting points, several safety factors may be used to reduce that level in order to protect sensitive people such as children or asthmatics, or to account for other possible adverse health effects that have not been fully studied. In general, larger safety factors are used when less is known about the health impacts of a chemical. For example, if an adverse health effect is observed in a study of human adult males, then in order to protect children, the level that caused harm in the adults is reduced using safety factors that address differences in body mass or gender. In the some cases, evidence of toxic effects in animals can be extrapolated to humans after making adjustments for differences in physiology, breathing patterns or other factors. The use of safety factors is a standard approach employed by health professionals in federal, state and academic institutions when determining safe exposure levels. It is especially valuable when there are gaps in scientific data.

For toxic air pollutants that are known to cause cancer, risk assessment methods assume by default that no exposure is without at least some risk. In these cases, the conventional scientific approach is to set exposure guidelines at levels that represent extremely low risk. This is especially true for those chemicals that are known to cause cancer in humans, such as benzene. In these cases, the standard convention used by academia and state and federal health protection programs is to establish an exposure level based on a concept of excess or additional cancers not to exceed "one in a million." So, for toxic air pollutants that are known human carcinogens, AALs are set such that they represent a "one in a million" excess cancer risk. Using this approach, if one million people were exposed to this level continuously, then statistically one additional person would be expected to develop cancer from this exposure over and above the "usual" cancer rate expected in a population. Similarly, the excess cancer risk is less restrictive for those chemicals that are known to cause cancer in animals, but evidence in humans is incomplete.

The North Carolina air toxics rules approach protection of public health differently than the United States Environmental Protection Agency's (USEPA) regulations for toxic air pollution. In the 1990 Clean Air Act Amendments, Congress directed USEPA to use a technology-based approach to significantly reduce emissions of air toxics from major stationary sources of air pollution, followed by a risk-based approach to address any remaining, or residual risks. Under the technology-based approach, USEPA develops standards for controlling the emissions of air toxics from each major type of source within an industry group. These standards, known as Maximum Achievable Control Technology (MACT) standards and Generally Available Control Technology (GACT) standards are based on emission levels that are already being achieved by the better-controlled and lower-emitting sources in an industry. The USEPA has issued all of the technology based standards (although a few are being reconsidered), and is in the process of addressing residual risks from each of the source categories. To date, USEPA has issued 40 percent of the residual risk regulations.

The state program evaluates actual toxic air emissions at the property boundary – where those emissions affect other businesses and residences. Often times, installing the technologies required under the federal rules allows a facility to also meet the state health-based standard at its property boundaries. When that is the case, the state program does not require any further action. Other times, those levels exceed the public health guideline at the property boundary even after the facility has installed technology required under the federal rule. In those cases, the state program works with the facility to identify other measures that can lower the level of toxic air pollutants.

The state rules that set forth the control of toxic air pollutants to protect human health (including the AALs) are found in the North Carolina Administrative Code at 15A NCAC 02D .1100 (Control of Toxic Air Pollutants). The state rules that set forth the permitting requirements for sources of toxic air pollutants are found at 15A NCAC 02Q .0700 (Toxic Air Pollutant Procedures). Both sections can be found in Appendix B and C, respectively.

THE REVIEW PURSUANT TO SECTION 3 OF S.L. 2012-91

Upon the enactment of S.L. 2012-91, DAQ began the process of reviewing the air toxics rules in 15A NCAC 02D .1100 and 02Q .0700 to determine whether changes could be made to the rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining public health protections. The law also instructed DAQ to conduct this review in consultation with interested parties.

The DAQ began meeting with its management team in early July 2012 to discuss an approach for the Section 3 review. The first step included survey discussions with three DAQ workgroups – Permitting, Compliance and the Maximum Achievable Control Technology Implementation group. The goal was to get the staff members that have worked on implementing the rules for many years to share their experiences and identify possible changes that would be consistent with the requirements of Section 3. Next, DAQ management asked stakeholders for ideas on what changes could be made to the air toxics rules consistent with the requirements of Section 3. One such opportunity was during DAQ's August 2012 Outside Involvement Committee Meeting – a diverse stakeholder group that meets quarterly to receive updates on the complex and ever-changing nature of air quality regulations and issues. The group regularly includes representatives from industry, consultants and the environmental community.

On September 7, 2012, DAQ announced a stakeholder meeting for September 25, 2012 to specifically take comments on changes that could be made to the existing North Carolina air toxics rules. Further, DAQ accepted written comments on this matter from September 7, 2012, through October 9, 2012.

Approximately 30 individuals attended the September 25, 2012, stakeholder meeting representing the full spectrum of interested parties - industry, consultants and the environmental community. The DAQ presented seven concepts during the meeting for the purposes of stimulating thought and discussion on what changes might be possible that fit the criteria laid out in Section 3 of the law. Those concepts evolved out of DAQ's experience implementing the air toxics rules and from comments from the regulated community through the years. By the time the written comment period had ended, DAQ received 18 written comments. See Appendix D for a summary of comments and Appendix E for the actual comments.

RECOMMENDATIONS

After carefully considering all of the input received since S.L. 2012-91 became law, DAQ has determined that several changes could be made to the air toxics rules to reduce unnecessary regulatory burden and increase the efficient use of DAQ resources while maintaining protection of public health.

1. **Develop an additional set of toxic permitting emission rates (TPERs) in 15A NCAC 02Q .0711 for situations where air pollutant emission release points at a given facility are non-obstructed and vertically oriented.**

   The TPER is used in the first step of evaluating a facility's toxic air emissions. The facility-wide emissions level is simply compared to the TPER for a given toxic air pollutant to determine whether further analysis (modeling) is necessary. One can think of this as a simple screening step. The TPER is a conservatively set threshold below which, even under the worst case air pollutant dispersion conditions, impacts at the property boundary would not be expected to approach the health based AALs.

   The DAQ's experience with modeling analyses indicates that in some cases facility emissions need to be 100 times the TPER to actually exceed the health based AAL at the property boundary. This significant gap between the TPER threshold for modeling of toxic air emissions and actual emissions at the property boundary occurs most often at facilities where emissions are released through an unobstructed, vertical smokestack. DAQ's recent examination of actual stack exit velocities – the speed at which air emissions leave the stack and disperse (a critical variable in estimating air pollution impacts) – shows the lowest value at current NC facilities to be in the 1.5 meter per second (m/s) range for unobstructed vertical stacks. By comparison, the current value used to establish the TPERs is 0.01 m/s. While this value represents a reasonable worst case scenario for horizontally oriented stacks and for some stacks obstructed by rain caps, it is not a reasonable value for an unobstructed vertical stack.

   The change being proposed by DAQ does not change the AAL; the health-based standard would remain the same. The DAQ proposes to develop a separate set of screening thresholds for analyzing toxic air pollutants emitted from unobstructed vertical stacks at a facility. The DAQ estimates that at a minimum, one-third of all facilities subject to the air toxics rules could use this additional set of TPERs. The DAQ anticipates that use of the new TPERS would relieve a number of those facilities from the need to model toxic air emissions.

2. **Exempt natural gas and propane fired boilers from state air toxics permitting when the aggregate allowable heat input value of such sources is less than 450 million British thermal units per hour (mmbtu/hr) and those sources are the only sources of benzene emissions at the facility.**

   The proposed threshold-based exemption to the air toxics permitting rules for some natural gas and propane fired boilers is based on several points. First, DAQ's analysis of

natural gas and propane fired boilers indicates that boilers with a heat input value less than 450 mmbtu/hr do not exceed the TPER for any toxic air pollutant. Larger boilers have the potential to exceed the TPER for benzene. Since total emissions at a facility with multiple natural gas or propane fired boilers, a mix of natural gas or propane fired boilers, or other sources of benzene may exceed the TPER, DAQ proposes to limit the exemption to natural gas and propane fired boilers that: 1) represent the only source of benzene emissions at a facility; and 2) have an aggregate allowable heat input value less than 450 mmbtu/hr.

Second is a consideration of how USEPA has treated natural gas and propane fired boilers in two federal air toxics rules. Neither the Generally Available Control Technology (GACT) rule for industrial and institutional boilers nor the Maximum Achievable Control Technology (MACT) rule for electric generating units imposes any requirements for natural gas or propane fired boilers. In developing those rules, USEPA found the public health risks from toxic air pollutants emitted by these types of boilers to be negligible.

DAQ estimates that approximately 150 facilities have sources that may qualify for this proposed threshold-based exemption.

3. **Exempt emergency engines from air toxics permitting when the aggregate capacity of such sources is less than 4,843 horsepower (HP) and those sources are the only sources of formaldehyde at the facility.**

The DAQ recommends a threshold-based exemption to the air toxics permitting rules for emergency engines. The DAQ recommends defining emergency engines consistently with how USEPA has defined them in 40 CFR 63, Subpart ZZZZ. These engines are designed for use in emergency situations to produce power for critical equipment when the normal power source is interrupted, or pump water in the case of a fire, flood or other emergency situation. As a result, the engines are used infrequently and generally operate less than 50 hours per year. The DAQ's analysis of emergency engines indicates that emergency engines below 4,843 horsepower do not exceed the TPERs for any toxic air pollutant. An emergency engine above that horsepower threshold has the potential to exceed the hourly TPER for formaldehyde. Since total emissions at a facility with multiple emergency engines or other sources of formaldehyde may exceed the TPER, DAQ proposes to limit the exemption to emergency engines that: 1) represent the only source of formaldehyde at a facility; and 2) in the aggregate, total less than 4,843 horsepower. The DAQ estimates that approximately 150 facilities have sources that may qualify for this exemption.

4. **Do not retain the Standard Industrial Classification (SIC) Call rule.**

The air toxics rules provide a mechanism for the DAQ director to require all facilities under the same four-digit Standard Industrial Classification (SIC) to submit an application to comply with the air toxics rules. The DAQ does not believe it is necessary

to retain this capability since the existing Director's Call rule and S.L. 2012-91 provide adequate authority to address any unacceptable risks to human health from any facility.

5. **Clarify the use of actual rate of emissions in the air toxics rules.**

   The DAQ recommends the use of the term "actual rate of emissions" as defined in 15A NCAC 02Q .0703 for purposes of determining whether a permit to emit toxic air pollutants is required. This term is used in several of the air toxics rules when describing the air toxics permitting process. However, it is not clear in rule 15A NCAC 02Q .0711 where a reference to permitted rate of emissions exists. DAQ recommends clarifying in rule 15A NCAC 02Q .0711, that any facility's "actual rate of emissions" is to be used when comparing to the toxic air pollutant permitting emissions rates (TPER).

6. **Remove the term "unadulterated wood" from the air toxics rules.**

   The DAQ recommends simplifying the air toxics rules by removing the term "unadulterated wood." The term is used in the definition of combustion sources in 15A NCAC 02Q .0703. The DAQ does not believe it is necessary to retain a distinction between types of wood when defining combustion sources. The federal regulations that were published on March 21, 2011, that classify any combusted material (including wood) as either a fuel or solid waste make further distinctions in the state rules unnecessary.

The DAQ plans to initiate the administrative rule-making process in January 2013 to incorporate the changes outlined above and exemptions included in Section 1 of S.L. 2012-91.

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011

SESSION LAW 2012-91
HOUSE BILL 952

AN ACT TO EXEMPT FROM STATE AIR TOXICS EMISSIONS CONTROLS THOSE SOURCES OF EMISSIONS THAT ARE SUBJECT TO CERTAIN FEDERAL EMISSIONS REQUIREMENTS, TO DIRECT THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES TO REQUIRE PERMIT CONDITIONS THAT ELIMINATE UNACCEPTABLE RISKS TO HUMAN HEALTH, TO DIRECT THE DIVISION OF AIR QUALITY TO REVIEW THE STATE AIR TOXICS PROGRAM, AND TO REQUIRE REPORTS ON THE IMPLEMENTATION OF THIS ACT, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 143-215.107(a) reads as rewritten:

"(a) Duty to Adopt Plans, Standards, etc. – The Commission is hereby directed and empowered, as rapidly as possible within the limits of funds and facilities available to it, and subject to the procedural requirements of this Article and Article 21:

...

(5) To develop and adopt emission control standards as in the judgment of the Commission may be necessary to prohibit, abate, or control air pollution commensurate with established air quality standards. ~~This subdivision does not apply to that portion of the National Emission Standards for Hazardous Air Pollutants for asbestos that governs demolition and renovation as set out in 40 C.F.R. § 61.141, 61.145, 61.150, and 61.154 (1 July 1993 edition).~~The Department shall implement rules adopted pursuant to this subsection as follows:

a. Except as provided in sub-subdivision b. of this subdivision, rules adopted pursuant to this subdivision that control emissions of toxic air pollutants shall not apply to an air emission source that is any of the following:

1. Subject to an applicable requirement under 40 C.F.R. Part 61, as amended.
2. An affected source under 40 C.F.R. Part 63, as amended.
3. Subject to a case-by-case maximum achievable control technology (MACT) permit requirement issued by the Department pursuant to 42 U.S.C. § 7412(j), as amended.

b. Upon receipt of a permit application for a new source or facility, or for the modification of an existing source or facility, that would result in an increase in the emission of toxic air pollutants, the Department shall review the application to determine if the emission of toxic air pollutants from the source or facility would present an unacceptable risk to human health. Upon making a written finding that a source or facility presents or would present an unacceptable risk to human health, the Department shall require the owner or operator of the source or facility to submit a permit application for any or all emissions of toxic air pollutants from the facility that eliminates the unacceptable risk to human health. The written finding may be based on modeling, epidemiological studies, actual monitoring data, or other information that indicates an unacceptable

health risk. When the Department requires the owner or operator of a source or facility to submit a permit application pursuant to this sub-subdivision, the Department shall report to the Chairs of the Environmental Review Commission on the circumstances surrounding the permit requirement, including a copy of the written finding.

...."

SECTION 2. The Environmental Management Commission shall amend its rules adopted pursuant to G.S. 143-215.107(a) so that they are consistent with the provisions of Section 1 of this act.

SECTION 3. The Division of Air Quality of the Department of Environment and Natural Resources shall review toxic air pollutant rules adopted pursuant to G.S. 143-215.107(a) and the implementation of those rules to determine whether changes could be made to the rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining protection of public health. The Division shall conduct this review in consultation with interested parties. The Division shall report the results of its review, including recommendations, if any, to the Environmental Review Commission no later than December 1, 2012.

SECTION 4. The Division of Air Quality in the Department of Environment and Natural Resources shall report on the implementation of this act to the Environmental Review Commission no later than December 1 for the years 2012, 2013, and 2014. The report shall include an analysis of air toxic emissions changes and a summary of results of the Division's analysis of air quality impacts.

SECTION 5. This act is effective when it becomes law.

In the General Assembly read three times and ratified this the 21st day of June, 2012.

s/ Walter H. Dalton
President of the Senate

s/ Thom Tillis
Speaker of the House of Representatives

s/ Beverly E. Perdue
Governor

Approved 1:34 p.m. this 28th day of June, 2012

SECTION .1100 - CONTROL OF TOXIC AIR POLLUTANTS

15A NCAC 02D .1101 PURPOSE

This Section sets forth the rules for the control of toxic air pollutants to protect human health.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(1),(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. May 1, 1990.*

15A NCAC 02D .1102 APPLICABILITY

(a) The toxic air pollutant rules in this Section apply to all facilities that emit a toxic air pollutant that are required to have a permit under 15A NCAC 2Q .0700.

(b) Sources at facilities subject to this Section shall comply with the requirements of this Section as well as with any applicable requirements in Sections .0500, .0900, and .1200 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(1),(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. May 1, 1990;
Amended Eff. July 1, 1998; December 1, 1991.

15A NCAC 02D .1103 DEFINITION

For the purpose of this Section, the following definitions apply:

(1) "Asbestos" means asbestos fibers as defined in 40 CFR 61.141.

(2) "Bioavailable chromate pigments" means the group of chromium (VI) compounds consisting of calcium chromate (CAS No.13765-19-0), calcium dichromate (CAS No. 14307-33-6), strontium chromate (CAS No. 7789-06-2), strontium dichromate (CAS No. 7789-06-2), zinc chromate (CAS No. 13530-65-9), and zinc dichromate (CAS No. 7789-12-0).

(3) "CAS Number" means the Chemical Abstract Service registry number identifying a particular substance.

(4) "Chromium (VI) equivalent" means the molecular weight ratio of the chromium (VI) portion of a compound to the total molecular weight of the compound multiplied by the associated compound emission rate or concentration at the facility.

(5) "Non-specific chromium (VI) compounds" means the group of compounds consisting of any chromium (VI) compounds not specified in this Section as a bioavailable chromate pigment or a soluble chromate compound.

(6) "Cresol" means o-cresol, p-cresol, m-cresol or any combination of these compounds.

(7) "GACT" means any generally available control technology emission standard applied to an area source or facility pursuant to Section 112 of the federal Clean Air Act.

(8) "Hexane isomers except n-hexane" means 2-methyl pentane, 3-methyl pentane, 2,2-dimethyl butane, 2,3-dimethyl butane, or any combination of these compounds.

(9) "MACT" means any maximum achievable control technology emission standard applied to a source or facility pursuant to Section 112 of the federal Clean Air Act.

(10) "Nickel, soluble compounds" means the soluble nickel salts of chloride ($NiCl_2$, CAS No. 7718-54-9), sulfate ($NiSO_4$, CAS No. 7786-81-4), and nitrate ($Ni(NO_3)_2$, CAS No. 13138-45-9).

(11) "Polychlorinated biphenyls" means any chlorinated biphenyl compound or mixture of chlorinated biphenyl compounds.

(12) "Soluble chromate compounds" means the group of chromium (VI) compounds consisting of ammonium chromate (CAS No. 7788-98-9), ammonium dichromate (CAS No. 7789-09-5), chromic acid (CAS No. 7738-94-5), potassium chromate (CAS No. 7789-00-6), potassium dichromate (CAS No. 7778-50-9), sodium chromate (CAS No. 7775-11-3), and sodium dichromate (CAS No. 10588-01-9).

(13) "Toxic air pollutant" means any of those carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants listed in Rule .1104 of this Section.

History Note: *Authority G.S. 143-213; 143-215.3(a)(1); 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. May 1, 1990;
Amended Eff. April 1, 2001; July 1, 1998.

15A NCAC 02D .1104 TOXIC AIR POLLUTANT GUIDELINES

A facility shall not emit any of the following toxic air pollutants in such quantities that may cause or contribute beyond the premises (adjacent property boundary) to any significant ambient air concentration that may adversely affect human health. In determining these significant ambient air concentrations, the Division shall be guided by the following list of acceptable ambient levels in milligrams per cubic meter at 77° F (25° C) and 29.92 inches (760 mm) of mercury pressure (except for asbestos):

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
acetaldehyde (75-07-0)				27
acetic acid (64-19-7)				3.7
acrolein (107-02-8)				0.08
acrylonitrile (107-13-1)		0.03	1	
ammonia (7664-41-7)				2.7
aniline (62-53-3)			1	
arsenic and inorganic arsenic compounds	2.3×10^{-7}			
asbestos (1332-21-4)	2.8×10^{-11} fibers/ml			
aziridine (151-56-4)		0.006		
benzene (71-43-2)	1.2×10^{-4}			
benzidine and salts (92-87-5)	1.5×10^{-8}			
benzo(a)pyrene (50-32-8)	3.3×10^{-5}			
benzyl chloride (100-44-7)			0.5	
beryllium (7440-41-7)	4.1×10^{-6}			
beryllium chloride (7787-47-5)	4.1×10^{-6}			
beryllium fluoride (7787-49-7)	4.1×10^{-6}			
beryllium nitrate (13597-99-4)	4.1×10^{-6}			
bioavailable chromate pigments, as chromium (VI) equivalent	8.3×10^{-8}			
bis-chloromethyl ether (542-88-1)	3.7×10^{-7}			
bromine (7726-95-6)				0.2
1,3-butadiene (106-99-0)	4.4×10^{-4}			
cadmium (7440-43-9)	5.5×10^{-6}			
cadmium acetate (543-90-8)	5.5×10^{-6}			
cadmium bromide (7789-42-6)	5.5×10^{-6}			
carbon disulfide (75-15-0)		0.186		
carbon tetrachloride (56-23-5)	6.7×10^{-3}			
chlorine (7782-50-5)		0.0375		0.9
chlorobenzene (108-90-7)		2.2		
chloroform (67-66-3)	4.3×10^{-3}			
chloroprene (126-99-8)		0.44	3.5	
cresol (1319-77-3)			2.2	
p-dichlorobenzene (106-46-7)				66
dichlorodifluoromethane (75-71-8)		248		
dichlorofluoromethane (75-43-4)		0.5		
di(2-ethylhexyl)phthalate (117-81-7)		0.03		
dimethyl sulfate (77-78-1)		0.003		
1,4-dioxane (123-91-1)		0.56		

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
epichlorohydrin (106-89-8)	8.3×10^{-2}			
ethyl acetate (141-78-6)			140	
ethylenediamine (107-15-3)		0.3	2.5	
ethylene dibromide (106-93-4)	4.0×10^{-4}			
ethylene dichloride (107-06-2)	3.8×10^{-3}			
ethylene glycol monoethyl ether (110-80-5)		0.12	1.9	
ethylene oxide (75-21-8)	2.7×10^{-5}			
ethyl mercaptan (75-08-1)			0.1	
fluorides		0.016	0.25	
formaldehyde (50-00-0)				0.15
hexachlorocyclopentadiene (77-47-4)		0.0006	0.01	
hexachlorodibenzo-p-dioxin (57653-85-7)	7.6×10^{-8}			
n-hexane (110-54-3)		1.1		
hexane isomers except n-hexane				360
hydrazine (302-01-2)		0.0006		
hydrogen chloride (7647-01-0)				0.7
hydrogen cyanide (74-90-8)		0.14	1.1	
hydrogen fluoride (7664-39-3)		0.03		0.25
hydrogen sulfide (7783-06-4)		0.12		
maleic anhydride (108-31-6)		0.012	0.1	
manganese and compounds		0.031		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		0.0006		
manganese tetroxide (1317-35-7)		0.0062		
mercury, alkyl		0.00006		
mercury, aryl and inorganic compounds		0.0006		
mercury, vapor (7439-97-6)		0.0006		
methyl chloroform (71-55-6)		12		245
methylene chloride (75-09-2)	2.4×10^{-2}		1.7	
methyl ethyl ketone (78-93-3)		3.7		88.5
methyl isobutyl ketone (108-10-1)		2.56		30
methyl mercaptan (74-93-1)			0.05	
nickel carbonyl (13463-39-3)		0.0006		
nickel metal (7440-02-0)		0.006		
nickel, soluble compounds, as nickel		0.0006		
nickel subsulfide (12035-72-2)	2.1×10^{-6}			
nitric acid (7697-37-2)				1
nitrobenzene (98-95-3)		0.06	0.5	
n-nitrosodimethylamine (62-75-9)	5.0×10^{-5}			
non-specific chromium (VI) compounds, as chromium (VI) equivalent	8.3×10^{-8}			
pentachlorophenol (87-86-5)		0.003	0.025	
perchloroethylene (127-18-4)	1.9×10^{-1}			

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
phenol (108-95-2)			0.95	
phosgene (75-44-5)		0.0025		
phosphine (7803-51-2)				0.13
polychlorinated biphenyls (1336-36-3)	8.3×10^{-5}			
soluble chromate compounds, as chromium (VI) equivalent		6.2×10^{-4}		
styrene (100-42-5)			10.6	
sulfuric acid (7664-93-9)		0.012	0.1	
tetrachlorodibenzo-p-dioxin (1746-01-6)	3.0×10^{-9}			
1,1,1,2-tetrachloro-2,2,- difluoroethane (76-11-9)		52		
1,1,2,2-tetrachloro-1,2- difluoroethane (76-12-0)		52		
1,1,2,2-tetrachloroethane (79-34-5)	6.3×10^{-3}			
toluene (108-88-3)		4.7		56
toluene diisocyanate, 2,4- (584-84-9) and 2,6- (91-08-7) isomers		0.0002		
trichloroethylene (79-01-6)	5.9×10^{-2}			
trichlorofluoromethane (75-69-4)			560	
1,1,2-trichloro-1,2,2- trifluoroethane (76-13-1)				950
vinyl chloride (75-01-4)	3.8×10^{-4}			
vinylidene chloride (75-35-4)		0.12		
xylene (1330-20-7)		2.7		65

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. May 1, 1990;*
Amended Eff. September 1, 1992; March 1, 1992;
Temporary Amendment Eff. July 20, 1997;
Amended Eff. March 1, 2010; June 1, 2008; April 1, 2005; April 1, 2001; July 1, 1998.

15A NCAC 02D .1105 FACILITY REPORTING, RECORDKEEPING

The Director may require, according to Section .0600 of this Subchapter, the owner or operator of a source subject to this Section to monitor emissions of toxic air pollutants, to maintain records of these emissions, and to report these emissions. The owner or operator of any toxic air pollutant emission source subject to the requirements of this Section shall comply with the monitoring, recordkeeping, and reporting requirements in Section .0600 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(4),(5); 143B-282;*
Eff. May 1, 1990;
Amended Eff. April 1, 1999; October 1, 1991.

15A NCAC 02D .1106 DETERMINATION OF AMBIENT AIR CONCENTRATION

(a) Modeling shall not be used for enforcement. Modeling shall be used to determine process operational and air pollution control parameters and emission rates for toxic air pollutants to place in the air quality permit for that facility that will prevent any of the acceptable ambient levels in Rule .1104 of this Section from being exceeded, with such exceptions as may be allowed under 15A NCAC 2Q .0700. Enforcing these permit stipulations and conditions shall be the mechanism used to ensure that the requirements of Rule .1104 of this Section, with such exceptions as may be allowed by 15A NCAC 2Q .0700, are met.

(b) The owner or operator of the facility may request the Division to perform a modeling analysis of the facility or provide the analysis himself. If the owner or operator of the facility requests the Division to perform the modeling analysis, he shall provide emissions rates, stack parameters, and other information that the Division needs to do the modeling. The data that the owner or operator of the facility provides the Division to use in the model or in deriving the data used in the model shall be the process, operational and air pollution control equipment parameters and emission rates that will be contained in the facility=s permit. If the Division=s initial review of the modeling request indicates extensive or inappropriate use of state resources or if the Division=s modeling analysis fails to show compliance with the acceptable ambient levels in Rule .1104 of this Section, the modeling demonstration becomes the responsibility of the owner or operator of the facility.

(c) When the owner or operator of the facility is responsible for providing the modeling demonstration and the data used in the modeling, the owner or operator of the facility shall use in the model or in deriving data used in the model the process operational and air pollution control equipment parameters and emission rates that will be contained in his permit. Sources that are not required to be included in the model will not be included in the permit to emit toxic air pollutants.

(d) For the following pollutants, modeled emission rates shall be based on the highest emissions occurring in any single 15 minute period. The resultant modeled 1-hour concentrations shall then be compared to the applicable 1-hour acceptable ambient levels to determine compliance. These pollutants are:

(1) acetaldehyde (75-07-0)
(2) acetic acid (64-19-7)
(3) acrolein (107-02-8)
(4) ammonia (7664-41-7)
(5) bromine (7726-95-6)
(6) chlorine (7782-50-5)
(7) formaldehyde (50-00-0)
(8) hydrogen chloride (7647-01-0)
(9) hydrogen fluoride (7664-39-3)
(10) nitric acid (7697-37-2)

(e) The owner or operator of the facility and the Division may use any model allowed by 40 CFR 51.166(l) provided that the model is appropriate for the facility being modeled. The owner or operator or the Division may use a model other than one allowed by 40 CFR 51.166(l) provided that the Director determines that the model is equivalent to the model allowed by 40 CFR 51.166(l). Regardless of model used, the owner or operator and the Division shall model for cavity effects and shall comply with the modeling requirements for stack height set out in Rule .0533 of this Subchapter.

(f) Ambient air concentrations are to be evaluated for annual periods over a calendar year, for 24-hour periods from midnight to midnight, and for one-hour periods beginning on the hour.

(g) The owner or operator of the facility shall identify each toxic air pollutant emitted and its corresponding emission rate using mass balancing analysis, source testing, or other methods that the Director may approve as providing an equivalently accurate estimate of the emission rate.

(h) The owner or operator of the facility shall submit a modeling plan to the Director and shall have received approval of that plan from the before submitting a modeling demonstration to the Director. The modeling plan shall include:

(1) a diagram of the plant site, including locations of all stacks and associated buildings;
(2) on-site building dimensions;
(3) a diagram showing property boundaries, including a scale, key and north indicator;
(4) the location of the site on a United States Geological Survey (USGS) map;
(5) discussion of good engineering stack height and building wake effects for each stack;
(6) discussion of cavity calculations, impact on rolling and complex terrain, building wake effects, and urban/rural considerations;
(7) discussion of reasons for model selection;
(8) discussion of meteorological data to be used;
(9) discussion of sources emitting the pollutant that are not to be included in the model with an explanation of why they are being excluded (i.e. why the source will not affect the modeling analysis); and

(10) any other pertinent information.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. May 1, 1990;
Amended Eff. July 1, 1998.

15A NCAC 02D .1107 MULTIPLE FACILITIES

(a) If an acceptable ambient level in Rule .1104 of this Section is exceeded because of emissions of two or more facilities and if public exposure is such that the commission has evidence that human health may be adversely affected, then the Commission shall require the subject facilities to apply addition controls or to otherwise reduce emissions. The type of evidence that the Commission shall consider shall include one or more of the following:

(1) emission inventory,
(2) ambient monitoring,
(3) modeling, or
(4) epidemiological study.

(b) The allocation of the additional reductions shall be based on the relative contributions to the pollutant concentrations unless the owners or operators agree otherwise.

(c) The owner or operator of a facility shall not be required to conduct the multi-facility ambient impact analysis described in Paragraph (a) of this Rule. This type of analysis shall be done by the Division of Air Quality. In performing its analysis, the Division shall:

(1) develop a modeling plan that includes the elements set out in Paragraph (f) of Rule .1106 of this Section;
(2) use for the source modeling parameters, the modeling parameters used by the owner or operator of the source in his modeling demonstration, or if a modeling demonstration has not been done or if a needed parameter has not been used in the modeling demonstration, parameters contained in, or derived from data contained in, the source's permit;
(3) use a model allowed by Paragraph (c) of Rule .1106 of this Section;
(4) model for cavity effects and comply with the modeling requirements for stack height set out in Rule .0533 of this Section;
(5) use the time periods required by Paragraph (d) of Rule .1106 of this Section; and
(6) only consider impacts of a facility=s emissions beyond the premises of that facility.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282;*
Eff. May 1, 1990;
Amended Eff. July 1, 1998.

15A NCAC 02D .1108 MULTIPLE POLLUTANTS

If the Commission has evidence that two or more toxic air pollutants being emitted from a facility or combination of facilities act in the same way to affect human health so that their effects may be additive or enhanced and that public exposure is such that human health may be adversely affected, then the Commission will consider developing acceptable ambient levels for the combination of toxic air pollutants or other appropriate control measures.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282; Eff. May 1, 1990.*

15A NCAC 02D .1109 112(J) CASE-BY-CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

(a) Applicability. This Rule applies only to sources of hazardous air pollutants required to have a permit under 15A NCAC 02Q .0500 and as described in 40 CFR 63.50. This Rule does not apply to research or laboratory activities as defined in Paragraph (b) of this Rule.

(b) Definitions. For the purposes of this Rule, the definitions in 40 CFR 63.2, 63.51, 15A NCAC 02Q .0526, and the following definitions apply:

(1) "Affected source" means the collection of equipment, activities, or both within a single contiguous area and under common control that is in a Section 112(c) source category or subcategory that the Administrator has failed to promulgate an emission standard by the Section 112(j) deadline, and that is addressed by an applicable MACT emission limitation established pursuant to 40 CFR Part 63 Subpart B;

(2) "Control technology" means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants including measures that:
- (A) reduce the quantity, or eliminate emissions, of such pollutants through process changes, substitution of materials, or other modifications;
- (B) enclose systems or processes to eliminate emissions;
- (C) collect, capture, or treat such pollutants when released from a process, stack, storage, or fugitive emission point;
- (D) are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 USC 7412(h); or
- (E) are a combination of Parts (A) through (D) of this definition.

(3) "EPA" means the United States Environmental Protection Agency or the Administrator of U.S. Environmental Protection Agency.

(4) "Hazardous air pollutant" means any pollutant listed under Section 112(b) of the federal Clean Air Act.

(5) "MACT" means maximum achievable control technology.

(6) "Maximum achievable control technology" means:
- (A) for existing sources,
  - (i) a MACT standard that EPA has proposed or promulgated for a particular category of facility or source,
  - (ii) the average emission limitation achieved by the best performing 12 percent of the existing facilities or sources for which EPA has emissions information if the particular category of source contains 30 or more sources, or
  - (iii) the average emission limitation achieved by the best performing five facilities or sources for which EPA has emissions information if the particular category of source contains fewer than 30 sources, or
- (B) for new sources, the maximum degree of reduction in emissions that is deemed achievable but not less stringent than the emission control that is achieved in practice by the best controlled similar source.

(7) "MACT floor" means:
- (A) for existing sources:
  - (i) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which EPA has emissions information) excluding those sources that have, within 18 months before the emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, or would comply if the source is not subject to such standard, with the lowest achievable emission rate (as defined in Section 171 of the federal Clean Air Act) applicable to the source category or subcategory for categories and subcategories with 30 or more sources; or
  - (ii) the average emission limitation achieved by the best performing five sources (for which EPA has emissions or could reasonably obtain emissions information), in the category or subcategory, for categories or subcategories with fewer than 30 sources;
- (B) for new sources, the emission limitation achieved in practice by the best controlled similar source.

(8) "New affected source" means the collection of equipment, activities, or both, that constructed after the issuance of a Section 112(j) permit for the source pursuant to 40 CFR 63.52, is subject to the applicable MACT emission limitation for new sources. Each permit shall define the term "new affected source," that will be the same as the "affected source" unless a different collection is warranted based on consideration of factors including:
- (A) Emission reduction impacts of controlling individual sources versus groups of sources;
- (B) Cost effectiveness of controlling individual equipment;
- (C) Flexibility to accommodate common control strategies;
- (D) Cost/benefits of emissions averaging;
- (E) Incentives for pollution prevention;
- (F) Feasibility and cost of controlling processes that share common equipment (e.g., product recovery devices); and
- (G) Feasibility and cost of monitoring,.

(9) "New facility" means a facility for which construction is commenced after the Section 112(j) deadline, or after proposal of a relevant standard under Section 112(d) or (h) of the Federal Clean Air Act, whichever comes first.

(10) "Research or laboratory activities" means activities whose primary purpose is to conduct research and development into new processes and products; where such activities are operated under the supervision of technically trained personnel and are not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner; and where the source is not in a source category specifically addressing research or laboratory activities, that is listed pursuant to Section 112(c)(7) of the Clean Air Act.

(11) "Section 112(j) deadline" means the date 18 months after the date for which a relevant standard is scheduled to be promulgated under 40 CFR Part 63, except that for all major sources listed in the source category schedule for which a relevant standard is scheduled to be promulgated by November 15, 1994, the Section 112(j) deadline is November 15, 1996, and for all major sources listed in the source category schedule for which a relevant standard is scheduled to be promulgated by November 15, 1997, the Section 112(j) deadline is December 15, 1999.

(12) "Similar source" means that equipment or collection of equipment that, by virtue of its structure, operability, type of emissions and volume and concentration of emissions, is substantially equivalent to the new affected source and employs control technology for control of emissions of hazardous air pollutants that is practical for use on the new affected source.

(c) Missed promulgation dates: 112(j). If EPA fails to promulgate a standard for a category of source under Section 112 of the Federal Clean Air Act by the date established pursuant to Sections 112(e)(1) or (3) of the federal Clean Air Act, the owner or operator of any source in such category shall submit, within 18 months after such date, a permit application, in accordance with the procedures in 15A NCAC 02Q .0526, to the Director and to EPA to apply MACT to such sources. Sources subject to this Paragraph shall be in compliance with this Rule within three years from the date that the permit is issued.

(d) New facilities. The owner or operator of any new facility that is a major source of hazardous air pollutants (HAP) that is subject to this Rule shall apply MACT in accordance with the provisions of Rule .1112 of this Section, 15A NCAC 02Q .0528, and 02Q .0526(e)(2).

(e) Case-by-case MACT determination. The Director shall determine MACT according to 40 CFR 63.55(a).

(f) Monitoring and recordkeeping. The owner or operator of a source subject to this Rule shall install, operate, and maintain monitoring capable of detecting deviations from each applicable emission limitation or other standards with sufficient reliability and timeliness to determine continuous compliance over the applicable reporting period. Such monitoring data may be used as a basis for enforcing emissions limitations established under this Rule.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5), (10);*
Temporary Adoption Eff. March 8, 1994 for a period of 180 days or until the permanent rule is effective, whichever is sooner;
Eff. July 1, 1994;
Amended Eff. February 1, 2004; July 1, 1998; July 1, 1996.

15A NCAC 02D .1110 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

(a) With the exception of Paragraph (b) of this Rule, sources subject to national emission standards for hazardous air pollutants promulgated in 40 CFR Part 61 shall comply with emission standards, monitoring and reporting requirements, maintenance requirements, notification and record keeping requirements, performance test requirements, test method and procedural provisions, and any other provisions, as required therein, rather than with any otherwise-applicable Rule in Section .0500 of this Subchapter that would be in conflict therewith.

(b) Along with the notice appearing in the North Carolina Register for a public hearing to amend this Rule to exclude a standard from this Rule, the Director shall state whether or not the national emission standards for hazardous air pollutants promulgated under 40 CFR Part 61, or part thereof, shall be enforced. If the Commission does not adopt the amendment to this Rule to exclude or amend the standard within 12 months after the close of the comment period on the proposed amendment, the Director shall begin enforcing that standard when 12 months has elapsed after the end of the comment period on the proposed amendment.

(c) New sources of volatile organic compounds that are located in an area designated in 40 CFR 81.334 as nonattainment for ozone or an area identified in accordance with 15A NCAC 02D .0902 as in violation of the ambient air quality standard for ozone shall comply with the requirements of 40 CFR Part 61 that are not excluded by this Rule, as well as with any applicable requirements in Section .0900 of this Subchapter.

(d) All requests, reports, applications, submittals, and other communications to the administrator required under Paragraph (a) of this Rule shall be submitted to the Director of the Division of Air Quality rather than to the Environmental Protection Agency; except that all such reports, applications, submittals, and other communications to the administrator required by 40 CFR 61.145 shall be submitted to the Director, Division of Epidemiology.

(e) In the application of this Rule, definitions contained in 40 CFR Part 61 shall apply rather than those of Section .0100 of this Subchapter.

(f) 15A NCAC 02Q .0102 and .0302 are not applicable to any source to which this Rule applies. The owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or .0500.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107 (a)(5); 150B-21.6;*
Eff. July 1, 1996;
Amended Eff. June 1, 2008; July 1, 1997.

15A NCAC 02D .1111 MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

(a) With the exception of Paragraph (b) or (c) of this Rule, sources subject to national emission standards for hazardous air pollutants for source categories promulgated in 40 CFR Part 63 shall comply with emission standards, monitoring and reporting requirements, maintenance requirements, notification and record keeping requirements, performance test requirements, test method and procedural provisions, and any other provisions, as required therein, rather than with any otherwise-applicable rule in Section .0500 of this Subchapter which would be in conflict therewith.

(b) The following are not included under this Rule:

(1) approval of state programs and delegation of federal authorities (40 CFR 63.90 to 63.96, Subpart E); and

(2) requirements for control technology determined for major sources in accordance with Clean Air Act Sections 112(g) and 112(j) (40 CFR 63.50 to 63.57, Subpart B).

(c) Along with the notice appearing in the North Carolina Register for a public hearing to amend this Rule to exclude a standard from this Rule, the Director shall state whether or not the national emission standard for hazardous air pollutants for source categories promulgated under 40 CFR Part 63, or part thereof, shall be enforced. If the Commission does not adopt the amendment to this Rule to exclude or amend the standard within 12 months after the close of the comment period on the proposed amendment, the Director shall begin enforcing that standard when 12 months has elapsed after the end of the comment period on the proposed amendment.

(d) New sources of volatile organic compounds that are located in an area designated in 40 CFR 81.334 as nonattainment for ozone or an area identified in accordance with 15A NCAC 02D .0902 as being in violation of the ambient air quality standard for ozone shall comply with the requirements of 40 CFR Part 63 that are not excluded by this Rule as well as with any applicable requirements in Section .0900 of this Subchapter.

(e) All requests, reports, applications, submittals, and other communications to the administrator required under Paragraph (a) of this Rule shall be submitted to the Director of the Division of Air Quality rather than to the Environmental Protection Agency; except that all such reports, applications, submittals, and other communications to the administrator required by 40 CFR Part 63, Subpart M for dry cleaners covered under Chapter 143, Article 21A, Part 6 of the General Statutes shall be submitted to the Director of the Division of Waste Management.

(f) In the application of this Rule, definitions contained in 40 CFR Part 63 shall apply rather than those of Section .0100 of this Subchapter when conflict exists.

(g) 15A NCAC 02Q .0102 and .0302 are not applicable to any source to which this Rule applies if the source is required to be permitted under 15A NCAC 02Q .0500, Title V Procedures. The owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or .0500. Sources that have heretofore been exempted from needing a permit and become subject to requirements promulgated under 40 CFR 63 shall apply for a permit in accordance to 15A NCAC 02Q .0109.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5); 150B-21.6;*
Eff. July 1, 1996;
Amended Eff. January 1, 2007; April 1, 1997.

15A NCAC 02D .1112 112(G) CASE BY CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

(a) Applicability. This Rule applies to the construction or reconstruction of major sources of hazardous air pollutants unless:
- (1) the major source has been specifically regulated or exempted from regulation under:
  - (A) Rule .1109 or .1111 of this Section; or
  - (B) a standard issued pursuant to Section 112(d), 112(h), or 112(j) of the federal Clean Air Act and incorporated in another Subpart of 40 CFR Part 63; or
- (2) the owner or operator of such major source has received all necessary air quality permits for such construction or reconstruction project before July 1, 1998.

(b) Exclusions. The requirements of this Rule shall not apply to:
- (1) electric utility steam generating units unless and until such time as these units are added to the source category list pursuant to Section 112(c)(5) of the federal Clean Air Act.
- (2) stationary sources that are within a source category that has been deleted from the source category list pursuant to Section 112(c)(9) of the federal Clean Air Act.
- (3) research and development activities.

(c) Definitions. For the purposes of this Rule, the following definitions apply:
- (1) "Affected source" means the stationary source or group of stationary sources that, when fabricated (on site), erected, or installed meets the definition of "construct a major source" or the definition of "reconstruct a major source" contained in this Paragraph.
- (2) "Affected States" means all States or local air pollution agencies whose areas of jurisdiction are:
  - (A) contiguous to North Carolina and located less than D=Q/12.5 from the facility, where:
    - (i) Q = emissions of the pollutant emitted at the highest permitted rate in tons per year, and
    - (ii) D = distance from the facility to the contiguous state or local air pollution control agency in miles; or
  - (B) within 50 miles of the permitted facility.
- (3) "Available information" means, for purposes of identifying control technology options for the affected source, information contained in the following information sources as of the date of approval of the MACT determination by the Division:
  - (A) a relevant proposed regulation, including all supporting information;
  - (B) background information documents for a draft or proposed regulation;
  - (C) data and information available from the Control Technology Center developed pursuant to Section 113 of the federal Clean Air Act;
  - (D) data and information contained in the Aerometric Informational Retrieval System including information in the MACT data base;
  - (E) any additional information that can be expeditiously provided by the Division and EPA; and
  - (F) for the purpose of determinations by the Division, any additional information provided by the applicant or others, and any additional information considered available by the Division.
- (4) "Construct a major source" means:
  - (A) To fabricate, erect, or install at any greenfield site a stationary source or group of stationary sources which is located within a contiguous area and under common control and which emits or has the potential to emit 10 tons per year of any HAP's or 25 tons per year of any combination of HAP, or
  - (B) To fabricate, erect, or install at any developed site a new process or production unit which in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, unless the process or production unit satisfies Subparts (i) through (vi) of this Paragraph:
    - (i) All HAP emitted by the process or production unit that would otherwise be controlled under the requirements of this Rule will be controlled by emission control equipment which was previously installed at the same site as the process or production unit;
    - (ii) The Division:
      - (I) has determined within a period of five years prior to the fabrication, erection, or installation of the process or production unit that the existing emission control equipment represented best available control technology (BACT) under Rule .0530 of this Subchapter or lowest achievable emission rate (LAER) under Rule .0531 of this Subchapter for the category of pollutants which includes those HAP's to be emitted by the process or production unit; or

(II) determines that the control of HAP emissions provided by the existing equipment will be equivalent to that level of control currently achieved by other well-controlled similar sources (i.e., equivalent to the level of control that would be provided by a current BACT, LAER, or MACT determination under Rule .1109 of this Section);

(iii) The Division determines that the percent control efficiency for emissions of HAP from all sources to be controlled by the existing control equipment will be equivalent to the percent control efficiency provided by the control equipment prior to the inclusion of the new process or production unit;

(iv) The Division has provided notice and an opportunity for public comment concerning its determination that criteria in Subparts (i), (ii), and (iii) of this Subparagraph apply and concerning the continued adequacy of any prior LAER, BACT, or MACT determination under Rule .1109 of this Section;

(v) If any commenter has asserted that a prior LAER, BACT, or MACT determination under Rule .1109 of this Section determination is no longer adequate, the Division has determined that the level of control required by that prior determination remains adequate; and

(vi) Any emission limitations, work practice requirements, or other terms and conditions upon which the above determinations by the Division are predicated will be construed by the Division as applicable requirements under Section 504(a) of the federal Clean Air Act and either have been incorporated into an existing permit issued under 15A NCAC 2Q .0500 for the affected facility or will be incorporated into such permit upon issuance.

(5) "Control technology" means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants including measures that:

(A) reduce the quantity of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modifications;

(B) enclose systems or processes to eliminate emissions;

(C) collect, capture or treat such pollutants when released from a process, stack, storage or fugitive emissions point;

(D) are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 U.S.C. 7412(h); or

(E) are a combination of Parts (A) through (D) of this definition.

(6) "Electric utility steam generating unit" means any fossil fuel fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A unit that co-generates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electric output to any utility power distribution system for sale shall be considered an electric utility steam generating unit.

(7) "Greenfield site" means a contiguous area under common control that is an undeveloped site.

(8) "HAP" means hazardous air pollutants.

(9) "Hazardous air pollutant" means any pollutant listed under Section 112(b) of the federal Clean Air Act.

(10) "List of source categories" means the source category list required by Section 112(c) of the federal Clean Air Act.

(11) "MACT" means maximum achievable control technology.

(12) "Maximum achievable control technology emission limitation for new sources" means the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of reduction in emissions that the permitting authority, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by the constructed or reconstructed major source.

(13) "Process or production unit" means any collection of structures or equipment, that processes, assembles, applies, or otherwise uses material inputs to produce or store an intermediate or final product. A single facility may contain more than one process or production unit.

(14) "Reconstruct a major source" means the replacement of components at an existing process or production unit that in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, whenever:

(A) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit; and

(B) It is technically and economically feasible for the reconstructed major source to meet the applicable maximum achievable control technology emission limitation for new sources established under this Subpart.

(15) "Research and development activities" means activities conducted at a research or laboratory facility whose primary purpose is to conduct research and development into new processes and products, where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for sale or exchange for commercial profit, except in a de minimis manner.

(16) "Similar source" means a stationary source or process that has comparable emissions and is structurally similar in design and capacity to a constructed or reconstructed major source such that the source could be controlled using the same control technology.

(d) Principles of MACT determinations. The following general principles shall be used to make a case-by-case MACT determination concerning construction or reconstruction of a major source under this Rule:

(1) The MACT emission limitation or MACT requirements recommended by the applicant and approved by the Division shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Division.

(2) Based upon available information, the MACT emission limitation and control technology (including any requirements under Subparagraph (3) of this Paragraph) recommended by the applicant and approved by the Division shall achieve the maximum degree of reduction in emissions of HAP that can be achieved by utilizing those control technologies that can be identified from the available information, taking into consideration the costs of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements associated with the emission reduction.

(3) The owner or operator may recommend a specific design, equipment, work practice, or operational standard, or a combination thereof, and the Director may approve such a standard if the Division specifically determines that it is not feasible to prescribe or enforce an emission limitation under the criteria set forth in Section 112(h)(2) of the federal Clean Air Act.

(4) If the EPA has either proposed a relevant emission standard pursuant to Section 112(d) or 112(h) of the federal Clean Air Act or adopted a presumptive MACT determination for the source category that includes the constructed or reconstructed major source, then the MACT requirements applied to the constructed or reconstructed major source shall have considered those MACT emission limitations and requirements of the proposed standard or presumptive MACT determination.

(e) Effective date of MACT determination. The effective date of a MACT determination shall be the date of issuance of a permit under procedures of 15A NCAC 2Q .0300 or .0500 incorporating a MACT determination.

(f) Compliance date. On and after the date of start-up, a constructed or reconstructed major source that is subject to the requirements of this Rule shall be in compliance with all applicable requirements specified in the MACT determination.

(g) Compliance with MACT determinations. The owner or operator of a constructed or reconstructed major source that:

(1) is subject to a MACT determination shall comply with all requirements set forth in the permit issued under 15A NCAC 2Q .0300 or .0500, including any MACT emission limitation or MACT work practice standard, and any notification, operation and maintenance, performance testing, monitoring, reporting, and recordkeeping requirements; or

(2) has obtained a MACT determination shall be deemed to be in compliance with Section 112(g)(2)(B) of the federal Clean Air Act only to the extent that the constructed or reconstructed major source is in compliance with all requirements set forth in the permit issued under 15A NCAC 2Q .0300 or .0500. Any violation of such requirements by the owner of operator shall be deemed by the Division and by EPA to be a violation of the prohibition on construction or reconstruction in Section 112(g)(2)(B) of the federal Clean Air Act for whatever period the owner or operator is determined to be in violation of such requirements, and shall subject the owner or operator to appropriate enforcement action under the General Statutes and the federal Clean Air Act.

(h) Requirements for constructed or reconstructed major sources subject to a subsequently promulgated MACT standard or MACT requirement. If EPA promulgates an emission standard under Section 112(d) or 112(h) of the federal Clean Air Act or the Division issues a determination under Rule .1109 of this Section that is applicable to a stationary source or group of sources that would be deemed to be a constructed or reconstructed major source under this Rule:

(1) before the date that the owner or operator has obtained a final and legally effective MACT determination under 15A NCAC 2Q .0300 or .0500, the owner or operator of the source(s) shall comply with the

promulgated standard or determination rather than any MACT determination under this Rule by the compliance date in the promulgated standard; or

(2) after the source has been subject to a prior case-by-case MACT under this Rule, and the owner or operator obtained a final and legally effective case-by-case MACT determination prior to the promulgation date of such emission standard, the Division shall (if the initial permit has not yet been issued under 15A NCAC 2Q .0500) issue an initial permit that incorporates the emission standard or determination, or shall (if the initial permit has been issued under 15A NCAC 2Q .0500) revise the permit according to the reopening procedures in 15A NCAC 2Q .0517, Reopening for Cause, whichever is relevant, to incorporate the emission standard or determination.

(i) Compliance with subsequent 112(d), 112(h),or 112(j) standards. EPA may include in the emission standard established under Section 112(d) or 112(h) of the federal Clean Air Act a specific compliance date for those sources that have obtained a final and legally effective MACT determination under this Rule and that have submitted the information required by 40 CFR 63.43 to EPA before the close of the public comment period for the standard established under section 112(d) of the federal Clean Air Act. Such date shall assure that the owner or operator shall comply with the promulgated standard as expeditiously as practicable, but not longer than eight years after such standard is promulgated. In that event, the Division shall incorporate the applicable compliance date in the permit issued under 15A NCAC 2Q .0500. If no compliance date has been established in the promulgated 112(d) or 112(h) standard or determination under Rule .1109 of this Section, for those sources that have obtained a final and legally effective MACT determination under this Rule, then the Director shall establish a compliance date in the permit that assures that the owner or operator shall comply with the promulgated standard or determination as expeditiously as practicable, but not longer than eight years after such standard is promulgated or a determination is made under Rule .1109 of this Section.

(j) Revision of permit to incorporate less stringent control. Notwithstanding the requirements of Paragraph (h) of this Rule, if the Administrator of EPA promulgates an emission standard under Section 112(d) or Section 112(h) of the federal Clean Air Act or the Division issues a determination under Rule .1109 of this Section that is applicable to a stationary source or group of sources that was deemed to be a constructed or reconstructed major source under this Rule and that is the subject of a prior case-by-case MACT determination pursuant to 40 CFR 63.43, and the level of control required by the emission standard issued under Section 112(d) or 112(h) or the determination issued under Rule .1109 of this Section is less stringent than the level of control required by any emission limitation or standard in the prior MACT determination, the Division is not required to incorporate any less stringent terms of the promulgated standard in the permit issued under 15A NCAC 2Q .0500 applicable to such source(s) and may consider any more stringent provisions of the prior MACT determination to be applicable legal requirements when issuing or revising such an operating permit.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5),(10);*
Eff. July 1, 1998.

SECTION .0700 - TOXIC AIR POLLUTANT PROCEDURES

15A NCAC 02Q .0701 APPLICABILITY

(a) With the exceptions in Rule .0702 of this Section, no person shall cause or allow any toxic air pollutant named in 15A NCAC 02D .1104 to be emitted from any facility into the atmosphere at a rate that exceeds the applicable rate(s) in Rule .0711 of this Section without having received a permit to emit toxic air pollutants as follows:

(1) new facilities according to Rule .0704 of this Section;
(2) existing facilities according to Rule .0705 of this Section;
(3) modifications according to Rule .0706 of this Section.

(b) The Division shall assess risks from all existing exempt combustion sources using exposure and risk assessment methodologies and information and report findings to the EMC no later than July 1, 2014, and every five years thereafter. Based on these findings, the EMC shall determine if amendments to this Section are appropriate and necessary.

(c) Facilities required to comply with MACT standards under 15A NCAC 02D .1109, .1111, or .1112 or 40 CFR Part 63 shall be deemed in compliance with this Subchapter and 15A NCAC 02D .1100 unless the Division determines that modeled emissions result in one or more acceptable ambient levels in 15A NCAC 02D .1104 being exceeded. This review shall be made according to the procedures in 15A NCAC 02D .1106. Once a facility demonstrates compliance with the acceptable ambient levels in 15A NCAC 02D .1104, future demonstrations shall only be required on a five-year basis. When an acceptable ambient level for a toxic air pollutant in 15A NCAC 02D .1104 is changed, any condition that has previously been put in a permit to protect the previous acceptable ambient level for that toxic air pollutant shall not be changed until the permit is renewed, at which time the owner or operator of the facility shall submit an air toxic evaluation showing that the new acceptable ambient level will not be exceeded.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; February 1, 2005.

15A NCAC 02Q .0702 EXEMPTIONS

(a) A permit to emit toxic air pollutants shall not be required under this Section for:

(1) residential wood stoves, heaters, or fireplaces;

(2) hot water heaters that are used for domestic purposes only and are not used to heat process water;

(3) maintenance, structural changes, or repairs that do not change capacity of that process, fuel-burning, refuse-burning, or control equipment, and do not involve any change in quality or nature or increase in quantity of emission of any regulated air pollutant or toxic air pollutant;

(4) housekeeping activities or building maintenance procedures, including painting buildings, resurfacing floors, roof repair, washing, portable vacuum cleaners, sweeping, use and associated storage of janitorial products, or non-asbestos bearing insulation removal;

(5) use of office supplies, supplies to maintain copying equipment, or blueprint machines;

(6) paving parking lots;

(7) replacement of existing equipment with equipment of the same size, type, and function if the new equipment:

(A) does not result in an increase to the actual or potential emissions of any regulated air pollutant or toxic air pollutant;

(B) does not affect compliance status; and

(C) fits the description of the existing equipment in the permit, including the application, such that the replacement equipment can be operated under that permit without any changes to the permit;

(8) comfort air conditioning or comfort ventilation systems that do not transport, remove, or exhaust regulated air pollutants to the atmosphere;

(9) equipment used for the preparation of food for direct on-site human consumption;

(10) non-self-propelled non-road engines, except generators, regulated by rules adopted under Title II of the federal Clean Air Act;

(11) stacks or vents to prevent escape of sewer gases from domestic waste through plumbing traps;

(12) use of fire fighting equipment;

(13) the use for agricultural operations by a farmer of fertilizers, pesticides, or other agricultural chemicals containing one or more of the compounds listed in 15A NCAC 02D .1104 if such compounds are applied according to agronomic practices acceptable to the North Carolina Department of Agriculture;

(14) asbestos demolition and renovation projects that comply with 15A NCAC 02D .1110 and that are being done by persons accredited by the Department of Health and Human Services under the Asbestos Hazard Emergency Response Act;

(15) incinerators used only to dispose of dead animals or poultry as identified in 15A NCAC 02D .1201(c)(4) or incinerators used only to dispose of dead pets as identified in 15A NCAC 02D .1208(a)(2)(A);

(16) refrigeration equipment that is consistent with Section 601 through 618 of Title VI (Stratospheric Ozone Protection) of the federal Clean Air Act, 40 CFR Part 82, and any other regulations promulgated by EPA under Title VI for stratospheric ozone protection, except those units used as or with air pollution control equipment;

(17) laboratory activities:

(A) bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments;

(B) bench scale experimentation, chemical or physical analyses, training or instruction from nonprofit, non-production educational laboratories;

(C) bench scale experimentation, chemical or physical analyses, training or instruction from hospital or health laboratories pursuant to the determination or diagnoses of illnesses; and

(D) research and development laboratory activities that are not required to be permitted under Section .0500 of this Subchapter provided the activity produces no commercial product or feedstock material;

(18) combustion sources as defined in 15A NCAC 02Q .0703 except new or modified combustion sources permitted on or after July 10, 2010.

The DAQ shall review and recommend to the EMC no later than July 1, 2014, and every five years thereafter, whether the exemption shall remain in place or be removed.

(19) storage tanks used only to store:
  (A) inorganic liquids with a true vapor pressure less than 1.5 pounds per square inch absolute;
  (B) fuel oils, kerosene, diesel, crude oil, used motor oil, lubricants, cooling oils, natural gas, liquefied petroleum gas, or petroleum products with a true vapor pressure less than 1.5 pounds per square inch absolute;

(20) dispensing equipment used solely to dispense diesel fuel, kerosene, lubricants or cooling oils;

(21) portable solvent distillation systems that are exempted under 15A NCAC 02Q .0102(c)(1)(I).

(22) processes:
  (A) electric motor burn-out ovens with secondary combustion chambers or afterburners;
  (B) electric motor bake-on ovens;
  (C) burn-off ovens for paint-line hangers with afterburners;
  (D) hosiery knitting machines and associated lint screens, hosiery dryers and associated lint screens, and hosiery dyeing processes where bleach or solvent dyes are not used;
  (E) blade wood planers planing only green wood;
  (F) saw mills that saw no more than 2,000,000 board feet per year provided only green wood is sawed;
  (G) perchloroethylene drycleaning processes with 12-month rolling total consumption of:
    (i) less than 1366 gallons of perchloroethylene per year for facilities with dry-to-dry machines only;
    (ii) less than 1171 gallons of perchloroethylene per year for facilities with transfer machines only; or
    (iii) less than 1171 gallons of perchloroethylene per year for facilities with both transfer and dry-to-dry machines;

(23) wood furniture manufacturing operations as defined in 40 CFR 63.801(a) that comply with the emission limitations and other requirements of 40 CFR Part 63 Subpart JJ, provided that the terms of this exclusion shall not affect the authority of the Director under 15A NCAC 02Q .0712;

(24) wastewater treatment systems at pulp and paper mills for hydrogen sulfide and methyl mercaptan only;

(25) gasoline dispensing facilities or gasoline service station operations that comply with 15A NCAC 02D .0928 and .0932 and that receive gasoline from bulk gasoline plants or bulk gasoline terminals that comply with 15A NCAC 02D .0524, .0925, .0926, .0927, .0932, and .0933 via tank trucks that comply with 15A NCAC 02D .0932;

(26) the use of ethylene oxide as a sterilant in the production and subsequent storage of medical devices or the packaging and subsequent storage of medical devices for sale if the emissions from all new and existing sources at the facility described in 15A NCAC 02D .0538(d) are controlled at least to the degree described in 15A NCAC 02D .0538(d) and the facility complies with 15A NCAC 02D .0538(e) and (f);

(27) bulk gasoline plants, including the storage and handling of fuel oils, kerosenes, and jet fuels but excluding the storage and handling of other organic liquids, that comply with 15A NCAC 02D .0524, .0925, .0926, .0932, and .0933; unless the Director finds that a permit to emit toxic air pollutants is required under Paragraph (b) of this Rule or Rule .0712 of this Section for a particular bulk gasoline plant; or

(28) bulk gasoline terminals, including the storage and handling of fuel oils, kerosenes, and jet fuels but excluding the storage and handling of other organic liquids, that comply with 15A NCAC 02D .0524, .0925, .0927, .0932, and .0933 if the bulk gasoline terminal existed before November 1, 1992; unless:
  (A) the Director finds that a permit to emit toxic air pollutants is required under Paragraph (b) of this Rule or Rule .0712 of this Section for a particular bulk gasoline terminal, or
  (B) the owner or operator of the bulk gasoline terminal meets the requirements of 15A NCAC 02D .0927(i).

(b) Emissions from the activities identified in Subparagraphs (a)(25) through (a)(28) of this Rule shall be included in determining compliance with the toxic air pollutant requirements in this Section and shall be included in the permit if necessary to assure compliance. Emissions from the activities identified in Subparagraphs (a)(1) through (a)(24) of this Rule shall not be included in determining compliance with the toxic air pollutant requirements in this Section.

(c) The addition or modification of an activity identified in Paragraph (a) of this Rule shall not cause the source or facility to be evaluated for emissions of toxic air pollutants.

(d) Because an activity is exempted from being required to have a permit does not mean that the activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; April 1, 2005; July 1, 2002; July 1, 2000.

15A NCAC 02Q .0703 DEFINITIONS

For the purposes of this Section, the following definitions apply:

(1) "Actual rate of emissions" means:

(a) for existing sources:

(i) for toxic air pollutants with an annual averaging period, the average rate or rates at which the source actually emitted the pollutant during the two-year period preceding the date of the particular modification and that represents normal operation of the source. If this period does not represent normal operation, the Director may allow the use of a different, more representative, period.

(ii) for toxic air pollutants with a 24-hour or one-hour averaging period, the maximum actual emission rate at which the source actually emitted for the applicable averaging period during the two-year period preceding the date of the particular modification and that represents normal operation of the source. If this period does not represent normal operation, the Director may require or allow the use of a different, more representative, period.

(b) for new or modified sources, the average rate or rates, determined for the applicable averaging period(s), that the proposed source will actually emit the pollutant as determined by engineering evaluation.

(2) "Applicable averaging period" means the averaging period for which an acceptable ambient limit has been established by the Commission and is listed in 15A NCAC 02D .1104.

(3) "Bioavailable chromate pigments" means the group of chromium (VI) compounds consisting of calcium chromate (CAS No.13765-19-0), calcium dichromate (CAS No. 14307-33-6), strontium chromate (CAS No. 7789-06-2), strontium dichromate (CAS No. 7789-06-2), zinc chromate (CAS No. 13530-65-9), and zinc dichromate (CAS No. 7789-12-0).

(4) "CAS Number" means the Chemical Abstract Service registry number identifying a particular substance.

(5) "Chromium (VI) equivalent" means the molecular weight ratio of the chromium (VI) portion of a compound to the total molecular weight of the compound multiplied by the associated compound emission rate or concentration at the facility.

(6) "Combustion sources" means boilers, space heaters, process heaters, internal combustion engines, and combustion turbines, which burn only unadulterated wood or unadulterated fossil fuel. It does not include incinerators, waste combustors, kilns, dryers, or direct heat exchange industrial processes.

(7) "Creditable emissions" means actual decreased emissions that have not been previously relied on to comply with Subchapter 15A NCAC 02D. All creditable emissions shall be enforceable by permit condition.

(8) "Cresol" means o-cresol, p-cresol, m-cresol, or any combination of these compounds.

(9) "Evaluation" means:

(a) a determination that the emissions from the facility, including emissions from sources exempted by Rule .0702 (a) (24) through (27) of this Section, are less than the rate listed in Rule .0711 of this Section; or

(b) a determination of ambient air concentrations as described under 15A NCAC 02D .1106, including emissions from sources exempted by Rule .0702 (24) through (27) of this Section.

(10) "GACT" means any generally available control technology emission standard applied to an area source or facility pursuant to Section 112 of the federal Clean Air Act.

(11) "Hexane isomers except n-hexane" means 2-methyl pentane, 3-methyl pentane, 2,2-dimethyl butane, 2,3-dimethyl butane, or any combination of these compounds.

(12) "MACT" means any maximum achievable control technology emission standard applied to a source or facility pursuant to Section 112 federal Clean Air Act.

(13) "Maximum feasible control" means the maximum degree of reduction for each pollutant subject to regulation under this Section using the best technology that is available taking into account, on a case-by-case basis, human health, energy, environmental, and economic impacts and other costs.

(14) "Modification" means any physical changes or changes in the methods of operation that result in a net increase in emissions or ambient concentration of any pollutant listed in Rule .0711 of this Section or that result in the emission of any pollutant listed in Rule .0711 of this Section not previously emitted.

(15) "Net increase in emissions" means for a modification the sum of any increases in permitted allowable and decreases in the actual rates of emissions from the proposed modification from the sources at the facility for which the air permit application is being filed. If the net increase in emissions from the proposed modification is greater than zero, all other increases in permitted allowable and decreases in the actual rates of emissions at the facility within five years immediately preceding the filing of the air permit application for the proposed modification that are otherwise creditable emissions may be included.

(16) "Nickel, soluble compounds" means the soluble nickel salts of chloride ($NiCl_2$, CAS No. 7718-54-9), sulfate ($NiSO_4$, CAS No. 7786-81-4), and nitrate ($Ni(NO_3)_2$, CAS No. 13138-45-9).

(17) "Non-specific chromium (VI) compounds" means the group of compounds consisting of any chromium (VI) compounds not specified in this Section as a bioavailable chromate pigment or a soluble chromate compound.

(18) "Polychlorinated biphenyls" means any chlorinated biphenyl compound or mixture of chlorinated biphenyl compounds.

(19) "Pollution prevention plan" means a written description of current and projected plans to reduce, prevent, or minimize the generation of pollutants by source reduction and recycling and includes a site-wide assessment of pollution prevention opportunities at a facility that addresses sources of air pollution, water pollution, and solid and hazardous waste generation.

(20) "SIC" means standard industrial classification code.

(21) "Soluble chromate compounds" means the group of chromium (VI) compounds consisting of ammonium chromate (CAS No. 7788-98-9), ammonium dichromate (CAS No. 7789-09-5), chromic acid (CAS No. 7738-94-5), potassium chromate (CAS No. 7789-00-6), potassium dichromate (CAS No. 7778-50-9), sodium chromate (CAS No. 7775-11-3), and sodium dichromate (CAS No. 10588-01-9).

(22) "Toxic air pollutant" means any of those carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants listed in 15A NCAC 02D .1104.

(23) "Unadulterated wood" means wood that is not painted, varnished, stained, oiled, waxed, or otherwise coated or treated with any chemical. Plywood, particle board, and resinated wood are not unadulterated wood.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. April 1, 2001.

15A NCAC 02Q .0704 NEW FACILITIES

(a) This Rule applies only to facilities that begin construction after September 30, 1993.

(b) The owner or operator of a facility that:

(1) is required to have a permit because of applicability of a Section in Subchapter 2D of this Chapter other than Section .1100 of Subchapter 2D of this Chapter except for facilities whose emissions of toxic air pollutants result only from sources exempted under Rule .0102 of this Subchapter;

(2) has one or more sources subject to a MACT or GACT standard that has previously been promulgated under Section 112(d) of the federal Clean Air Act or established under Section 112(e) or 112(j) of the Clean Air Act; or

(3) has a standard industrial classification code that has previously been called under Rule .0705 of this Section;

shall have received a permit to emit toxic air pollutants before beginning construction, and shall comply with such permit when beginning operation.

(c) The owner or operator of a facility subject to this Rule who has not received a permit to emit toxic air pollutants under Paragraph (b) of this Rule shall apply for a permit to emit toxic air pollutants according to Paragraph (b) or (c) of Rule .0705 of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0705 EXISTING FACILITIES AND SIC CALLS

(a) This Rule applies only to facilities that were in operation or permitted to construct before October 1, 1993 and new facilities subject to Rule .0704(c) of this Section.

(b) For sources at a facility subject to a MACT or GACT standard, or that may be subject to a MACT or GACT standard based on studies required by Section 112(n)(1) of the Clean Air Act, 42 U.S.C. Section 7412(n)(1), the owner or operator of the facility shall comply with 15A NCAC 2D .1100 as follows:

(1) When the owner or operator submits a permit application to comply with the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility, he shall also submit a permit application to comply with 15A NCAC 2D .1100. The facility shall comply with 15A NCAC 2D .1100 by the same deadline that it is required to comply with the last MACT or GACT.

(2) If the owner or operator does not have to submit a permit application to comply with the last MACT or GACT, excluding the MACT or GACT for combustion sources, he shall submit a permit application to comply with 15A NCAC 2D .1100 within six months after the promulgation of the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility or by January 1, 1999, whichever is later. The facility shall comply with 15A NCAC 2D .1100 by the same deadline that it is required to comply with the last MACT or GACT.

(3) If the owner or operator submitted a permit application for the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility before July 1, 1998, he shall submit a permit application to comply with 15A NCAC 2D .1100 by January 1, 1999. The facility shall comply with 15A NCAC 2D .1100 within three years from the date that the permit is issued.

The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding those sources exempt from evaluation under Rule .0702 of this Section. The owner or operator of a facility whose actual rate of emissions from all sources are not greater than the toxic permitting emissions rates listed in Rule .0711 of this Section does not have to file a permit application to comply with 15A NCAC 2D .1100. He shall provide documentation that the facility=s emissions of toxic air pollutants are below the levels in Rule .0711 of this Section if the Director requests this documentation.

(c) For facilities that will not be subject to a MACT or GACT standard, or that will be subject only to a MACT or GACT standard for unadulterated fuel combustion sources, the owner or operator of the facility shall have 180 days to apply for a permit or permit modification for the emissions of toxic air pollutants after receiving written notification from the Director that such permit or permit modification is required. The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section. Such facilities shall comply with 15A NCAC 2D .1100 within three years from the date that the permit is issued. The Director shall notify facilities subject to this Paragraph by calling for permit applications based on standard industrial classifications, that is, the Director shall call at one time for permits for all facilities statewide that have the same four-digit standard industrial classification code, except those facilities in certified local air pollution control agency areas. (Local air pollution control agencies shall call the standard industrial classification code within their jurisdiction when the Director calls that code. A local air pollution control agency may call a particular standard industrial classification code before the Director calls that code if the Commission approves the call by the local air pollution control agency. In deciding if it shall grant permission to a local air pollution control agency to call a particular standard industrial classification code before the Director calls that code, the Commission shall consider if the call is necessary to protect human health or to allow the local program to better implement these Rules in its jurisdiction.) Facilities with sources that will be subject to MACT that receive an SIC call shall notify the Director and shall comply with 15 NCAC 2D .1100 in accordance with Paragraph (b) of this Rule. All sources, regardless of their standard industrial classification code, excluding sources exempt from evaluation in Rule .0702 of this Section, at the facility shall be included in the call for permit applications. When the Environmental Protection Agency (EPA) promulgates MACT under Section 112(e) of the federal Clean Air Act, excluding cooling towers, the Director shall notify the owners or operators of facilities in the standard industrial classification that best corresponds to the MACT category that they are required to submit a permit application for the emissions of toxic air pollutants from their facilities. If the EPA fails to promulgate a MACT as scheduled, the Director shall notify the owners or operators of facilities 18 months after the missed promulgation date that they are required to submit a permit application for the emissions of toxic air pollutants from their facilities. The owner or operator of a facility whose actual rate of emissions from all sources are not greater than the toxic permitting emissions rates listed in Rule .0711 of this Section does not have to file a permit application to comply with 15A NCAC 2D .1100. He shall provide documentation that the facility=s emissions of toxic air pollutants are below the levels in Rule .0711 of this Section if the Director requests this documentation. The Director may request this documentation if he finds that the facility's potential emissions of toxic air pollutants are above the levels in Rule .0711 of this Section.

(d) The owner or operator of a facility may request a permit to emit toxic air pollutants any time before such application is required. The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0706 MODIFICATIONS

(a) For modification of any facility undertaken after September 30, 1993, that:

(1) is required to have a permit because of applicability of a Section, other than Section .1100, in Subchapter 02D of this Chapter except for facilities whose emissions of toxic air pollutants result only from insignificant activities as defined in 15A NCAC 02Q .0103(20) or sources exempted under Rule .0102 of this Subchapter;

(2) has one or more sources subject to a MACT or GACT standard that has previously been promulgated under Section 112(d) of the federal Clean Air Act or established under Section 112(e) or 112(j) of the Clean Air Act; or

(3) has a standard industrial classification code that has previously been called under Rule .0705 of this Section;

the owner or operator of the facility shall comply with Paragraphs (b) and (c) of this Rule.

(b) The owner or operator of the facility shall submit a permit application to comply with 15A NCAC 02D .1100 if the modification results in:

(1) a net increase in emissions or ambient concentration of any toxic air pollutant that the facility was emitting before the modification; or

(2) emissions of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in Rule .0711 of this Section.

(c) The permit application filed pursuant to this Rule shall include an evaluation for all toxic air pollutants covered under 15A NCAC 02D .1104 for which there is:

(1) a net increase in emissions of any toxic air pollutant that the facility was emitting before the modification; and

(2) emission of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in Rule .0711 of this Section.

All sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section, emitting these toxic air pollutants shall be included in the evaluation. Notwithstanding 02Q .0702(a)(18), on and after July 10, 2010, an evaluation of a modification to a combustion source shall also include emissions from all permitted combustion sources as defined in 02Q .0703. A permit application filed pursuant to Subparagraph (b)(2) of this Rule shall include an evaluation for all toxic air pollutants identified by the Director as causing an acceptable ambient level in 15A NCAC 02D .1104 to be exceeded.

(d) If a source is included in an air toxic evaluation, but is not the source that is being added or modified at the facility, and if the emissions from this source must be reduced in order for the facility to comply with the rules in this Section and 15A NCAC 02D .1100, then the emissions from this source shall be reduced by the time that the new or modified source begins operating such that the facility shall be in compliance with the rules in this Section and 15A NCAC 02D .1100.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, C. 168, S. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; December 1, 2005; April 1, 2005.

15A NCAC 02Q .0707 PREVIOUSLY PERMITTED FACILITIES

Any facility with a permit that contains a restriction based on the evaluation of a source exempted under Rule .0702 of this Section may request a permit modification to adjust the restriction by removing from consideration the portion of emissions resulting from the exempt source unless the Director determines that the removal of the exempt source will result in an acceptable ambient level in 15A NCAC 2D .1104 being exceeded. The Director shall modify the permit to remove the applicability of the air toxic rules to the exempt source. No fee shall be charged solely for such permit modification.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0708 COMPLIANCE SCHEDULE FOR PREVIOUSLY UNKNOWN TOXIC AIR POLLUTANT EMISSIONS

(a) The owner or operator of a facility permitted to emit toxic air pollutants shall submit a permit application within six months after the owner or operator learns of an emission of a previously unknown toxic air pollutant from a permitted source that would have been included in the permit when it was issued. The application shall include the information required by Paragraph (b) of this Rule.

(b) When an application to revise a permit is submitted under this Rule, the owner or operator shall in addition to the application, submit to the Director:

(1) an evaluation for the pollutant according to this Section and 15 NCAC 2D .1100 that demonstrates compliance with the acceptable ambient level in 15A NCAC 2D .1104; or

(2) a compliance schedule containing the information required under Paragraph (c) of this Rule for the proposed modifications to the facility required to comply with the acceptable ambient level according to this Section and Section 15A NCAC 2Q .1100.

(c) The compliance schedule required under Subparagraph (b)(2) of this Rule shall contain the following increments of progress as applicable:

(1) a date by which contracts for emission control and process equipment shall be awarded or orders shall be issued for the purchase of component parts;

(2) a date by which on-site construction or installation of the emission control and process equipment shall begin;

(3) a date by which on-site construction or installation of the emission control and process equipment shall be completed; and

(4) the date by which final compliance shall be achieved.

(d) Final compliance shall be achieved no later than:

(1) six months after the permit modification or renewal is issued if construction or installation of emission control or process equipment is not required;

(2) one year after the permit modification or renewal is issued if construction or installation of emission control or process equipment is required; or

(3) the time that is normally required to construct a stack or install other dispersion enhancement modifications but not more than one year after the permit modification or renewal is issued.

(e) The owner or operator shall certify to the Director within 10 days after each applicable deadline for each increment of progress required under Paragraph (c) of this Rule whether the required increment of progress has been met.

History Note: *Authority G.S. 143-215.3(a)(1); 43-215.107(a)(3),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. July 1, 1998.*

15A NCAC 02Q .0709 DEMONSTRATIONS

(a) Demonstrations. The owner or operator of a source who is applying for a permit or permit modification to emit toxic air pollutants shall:

(1) demonstrate to the satisfaction of the Director through dispersion modeling that the emissions of toxic air pollutants from the facility will not cause any acceptable ambient level listed in 15A NCAC 02D .1104 to be exceeded beyond the premises (adjacent property boundary); or

(2) demonstrate to the satisfaction of the Commission or its delegate that the ambient concentration beyond the premises (adjacent property boundary) for the subject toxic air pollutant shall not adversely affect human health (e.g., a risk assessment specific to the facility) though the concentration is higher than the acceptable ambient level in 15A NCAC 02D .1104 by providing one of the following demonstrations:

(A) the area where the ambient concentrations are expected to exceed the acceptable ambient levels in 15A NCAC 02D .1104 is not inhabitable or occupied for the duration of the averaging time of the pollutant of concern, or

(B) new toxicological data that show that the acceptable ambient level in 15A NCAC 02D .1104 for the pollutant of concern is too low and the facility's ambient impact is below the level indicated by the new toxicological data.

(b) Technical Infeasibility and Economic Hardship. This Paragraph shall not apply to any incinerator covered under 15A NCAC 02D .1200. The owner or operator of any source constructed before May 1, 1990, or a perchloroethylene dry cleaning facility subject to a GACT standard under 40 CFR 63.320 through 63.325, or a combustion source as defined in Rule .0703 of this Section permitted before July 10, 2010, who cannot supply a demonstration described in Paragraph (a) of this Rule shall:

(1) demonstrate to the satisfaction of the Commission or its delegate that complying with the guidelines in 15A NCAC 02D .1104 is technically infeasible (the technology necessary to reduce emissions to a level to prevent the acceptable ambient levels in 15A NCAC 02D .1104 from being exceeded does not exist); or

(2) demonstrate to the satisfaction of the Commission or its delegate that complying with the guidelines in 15A NCAC 02D .1104 would result in serious economic hardship. (In deciding if a serious economic hardship exists, the Commission or its delegate shall consider market impact; impacts on local, regional and state economy; risk of closure; capital cost of compliance; annual incremental compliance cost; and environmental and health impacts.)

If the owner or operator makes a demonstration to the satisfaction of the Commission or its delegate pursuant to Subparagraphs (1) or (2) of this Paragraph, the Director shall require the owner or operator of the source to apply maximum feasible control. Maximum feasible control shall be in place and operating within three years from the date that the permit is issued for the maximum feasible control.

(c) Pollution Prevention Plan. The owner or operator of any facility using the provisions of Part (a)(2)(A) or Paragraph (b) of this Rule shall develop and implement a pollution prevention plan consisting of the following minimum elements:

(1) statement of corporate and facility commitment to pollution prevention;

(2) identification of current and past pollution prevention activities;

(3) timeline and strategy for implementation;

(4) description of ongoing and planned employee education efforts;

(5) identification of internal pollution prevention goal selected by the facility and expressed in either qualitative or quantitative terms.

The facility shall submit along with the permit application the pollution prevention plan. The pollution prevention plan shall be maintained on site. A progress report on implementation of the plan shall be prepared by the facility annually and be made available to Division personnel for review upon request.

(d) Modeling Demonstration. If the owner or operator of a facility demonstrates by modeling that no toxic air pollutant emitted from the facility exceeds the acceptable ambient level values given in 15A NCAC 02D .1104 beyond the facility's premises, further modeling demonstration is not required with the permit application. However, the Commission may still require more stringent emission levels according to its analysis under 15A NCAC 02D .1107.

(e) Change in Acceptable Ambient Level. When an acceptable ambient level for a toxic air pollutant in 15A NCAC 02D .1104 is changed, any condition that has previously been put in a permit to protect the previous acceptable ambient level for that toxic air pollutant shall not be changed until:

(1) The permit is renewed, at which time the owner or operator of the facility shall submit an air toxic evaluation showing that the new acceptable ambient level will not be exceeded (If additional time is

needed to bring the facility into compliance with the new acceptable ambient level, the owner or operator shall negotiate a compliance schedule with the Director. The compliance schedule shall be written into the facility's permit and final compliance shall not exceed two years from the effective date of the change in the acceptable ambient level.): or

(2) The owner or operator of the facility requests that the condition be changed and submits along with that request an air toxic evaluation showing that the new acceptable ambient level shall not be exceeded.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; February 1, 2005.

15A NCAC 02Q .0710 PUBLIC NOTICE AND OPPORTUNITY FOR PUBLIC HEARING

(a) If the owner or operator of a facility chooses to make a demonstration pursuant to Rule .0709 (a)(2) or (b) of this Section, the Commission or its delegate shall approve or disapprove the permit after a public notice with an opportunity for a public hearing.

(b) The public notice shall be given by publication in a newspaper of general circulation in the area where the facility is located and shall be mailed to persons who are on the Division's mailing list for air quality permit notices.

(c) The public notice shall identify:

(1) the affected facility;

(2) the name and address of the permittee;

(3) the name and address of the person to whom to send comments and requests for public hearing;

(4) the name, address, and telephone number of a Divisional staff person from whom interested persons may obtain additional information, including copies of the draft permit, the application, compliance plan, pollution prevention plan, monitoring and compliance reports, all other relevant supporting materials, and all other materials available to the Division that are relevant to the permit decision;

(5) the activity or activities involved in the permit action;

(6) any emissions change involved in any permit modification;

(7) a brief description of the public comment procedures;

(8) the procedures to follow to request a public hearing unless a public hearing has already been scheduled; and

(9) the time and place of any hearing that has already been scheduled.

(d) The notice shall allow at least 30 days for public comments.

(e) If the Director determines that significant public interest exists or that the public interest will be served, the Director shall require a pubic hearing to be held on a draft permit. Notice of a public hearing shall be given at least 30 days before the public hearing.

(f) The Director shall make available for public inspection in at least one location in the region affected, the information submitted by the permit applicant and the Division=s analysis of that application.

(g) Any persons requesting copies of material identified in Subparagraph (b)(4) of this Rule shall pay ten cents ($0.10) a page for each page copied. Confidential material shall be handled in accordance with Rule .0107 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0711 EMISSION RATES REQUIRING A PERMIT

(a) A permit to emit toxic air pollutants is required for any facility whose actual (or permitted if higher) rate of emissions from all sources are greater than any one of the following toxic air pollutant permitting emissions rates:

Pollutant (CAS Number)	Carcinogens lb/yr	Chronic Toxicants lb/day	Acute Systemic Toxicants lb/hr	Acute Irritants lb/hr
acetaldehyde (75-07-0)				6.8
acetic acid (64-19-7)				0.96
acrolein (107-02-8)				0.02
acrylonitrile (107-13-1)		0.4	0.22	
ammonia (7664-41-7)				0.68
aniline (62-53-3)			0.25	
arsenic and inorganic arsenic compounds	0.016			
asbestos (1332-21-4)	1.9×10^{-6}			
aziridine (151-56-4)		0.13		
benzene (71-43-2)	8.1			
benzidine and salts (92-87-5)	0.0010			
benzo(a)pyrene (50-32-8)	2.2			
benzyl chloride (100-44-7)			0.13	
beryllium (7440-41-7)	0.28			
beryllium chloride (7787-47-5)	0.28			
beryllium fluoride (7787-49-7)	0.28			
beryllium nitrate (13597-99-4)	0.28			
bioavailable chromate pigments, as chromium (VI) equivalent	0.0056			
bis-chloromethyl ether (542-88-1)	0.025			
bromine (7726-95-6)				0.052
1,3-butadiene (106-99-0)	11			
cadmium (7440-43-9)	0.37			
cadmium acetate (543-90-8)	0.37			
cadmium bromide (7789-42-6)	0.37			
carbon disulfide (75-15-0)		3.9		
carbon tetrachloride (56-23-5)	460			
chlorine (7782-50-5)		0.79		0.23
chlorobenzene (108-90-7)		46		
chloroform (67-66-3)	290			
chloroprene (126-99-8)		9.2	0.89	
cresol (1319-77-3)			0.56	
p-dichlorobenzene (106-46-7)				16.8
dichlorodifluoromethane (75-71-8)		5200		
dichlorofluoromethane (75-43-4)		10		
di(2-ethylhexyl)phthalate (117-81-7)		0.63		
dimethyl sulfate (77-78-1)		0.063		
1,4-dioxane (123-91-1)		12		
epichlorohydrin (106-89-8)	5600			
ethyl acetate (141-78-6)			36	
ethylenediamine (107-15-3)		6.3	0.64	
ethylene dibromide (106-93-4)	27			
ethylene dichloride (107-06-2)	260			
ethylene glycol monoethyl ether (110-80-5)		2.5	0.48	

ethylene oxide (75-21-8)	1.8			
ethyl mercaptan (75-08-1)			0.025	
fluorides		0.34	0.064	
formaldehyde (50-00-0)				0.04
hexachlorocyclopentadiene (77-47-4)		0.013	0.0025	
hexachlorodibenzo-p-dioxin (57653- 85-7)	0.0051			
n-hexane (110-54-3)		23		
hexane isomers except n-hexane				92
hydrazine (302-01-2)		0.013		
hydrogen chloride (7647-01-0)				0.18
hydrogen cyanide (74-90-8)		2.9	0.28	
hydrogen fluoride (7664-39-3)		0.63		0.064
hydrogen sulfide (7783-06-4)		1.7		
maleic anhydride (108-31-6)		0.25	0.025	
manganese and compounds		0.63		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		0.013		
manganese tetroxide (1317-35-7)		0.13		
mercury, alkyl		0.0013		
mercury, aryl and inorganic compounds		0.013		
mercury, vapor (7439-97-6)		0.013		
methyl chloroform (71-55-6)		250		64
methylene chloride (75-09-2)	1600		0.39	
methyl ethyl ketone (78-93-3)		78		22.4
methyl isobutyl ketone (108-10-1)		52		7.6
methyl mercaptan (74-93-1)			0.013	
nickel carbonyl (13463-39-3)		0.013		
nickel metal (7440-02-0)		0.13		
nickel, soluble compounds, as nickel		0.013		
nickel subsulfide (12035-72-2)	0.14			
nitric acid (7697-37-2)				0.256
nitrobenzene (98-95-3)		1.3	0.13	
n-nitrosodimethylamine (62-75-9)	3.4			
non-specific chromium (VI) compounds, as chromium (VI) equivalent	0.0056			
pentachlorophenol (87-86-5)		0.063	0.0064	
perchloroethylene (127-18-4)	13000			
phenol (108-95-2)			0.24	
phosgene (75-44-5)		0.052		
phosphine (7803-51-2)				0.032
polychlorinated biphenyls (1336-36- 3)	5.6			
soluble chromate compounds, as chromium (VI) equivalent		0.013		
styrene (100-42-5)			2.7	
sulfuric acid (7664-93-9)		0.25	0.025	
tetrachlorodibenzo-p-dioxin (1746- 01-6)	0.00020			
1,1,1,2-tetrachloro-2,2,- difluoroethane (76-11-9)		1100		
1,1,2,2-tetrachloro-1,2- difluoroethane (76-12-0)		1100		
1,1,2,2-tetrachloroethane (79-34-5)	430			
toluene (108-88-3)		98		14.4

toluene diisocyanate,2,4-(584-84-9) and 2,6- (91-08-7) isomers		0.003		
trichloroethylene (79-01-6)	4000			
trichlorofluoromethane (75-69-4)			140	
1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)				240
vinyl chloride (75-01-4)	26			
vinylidene chloride (75-35-4)		2.5		
xylene (1330-20-7)		57		16.4

(b) For the following pollutants, the highest emissions occurring for any 15-minute period shall be multiplied by four and the product shall be compared to the value in Paragraph (a). These pollutants are:

(1) acetaldehyde (75-07-0);
(2) acetic acid (64-19-7);
(3) acrolein (107-02-8);
(4) ammonia (7664-41-7);
(5) bromine (7726-95-6);
(6) chlorine (7782-50-5);
(7) formaldehyde (50-00-0);
(8) hydrogen chloride (7647-01-0);
(9) hydrogen fluoride (7664-39-3); and
(10) nitric acid (7697-37-2).

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. January 1, 2010; June 1, 2008; April 1, 2005; February 1, 2005; April 1, 2001.

15A NCAC 02Q .0712 CALLS BY THE DIRECTOR

Notwithstanding any other provision of this Section or 15A NCAC 2D .1104, upon a written finding that a source or facility emitting toxic air pollutants presents an unacceptable risk to human health based on the acceptable ambient levels in 15A NCAC 2D .1104 or epidemiology studies, the Director may require the owner or operator of the source or facility to submit a permit application to comply with 15A NCAC 2D .1100 for any or all of the toxic air pollutants emitted from the facility.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0713 POLLUTANTS WITH OTHERWISE APPLICABLE FEDERAL STANDARDS OR REQUIREMENTS

(a) This Rule applies to the establishment of emission limitations or any other requirements pursuant to the requirements of this Section or 15A NCAC 2D .1100 for which a standard or requirement has been promulgated under Section 112 of the federal Clean Air Act including those contained in 15A NCAC 2D .1110 and .1111.

(b) For each facility subject to emission standards or requirements under Section 112 of the federal Clean Air Act, permits issued or revised according to Section .0500 of this Subchapter shall contain specific conditions that:

(1) reflect applicability criteria no less stringent than those in the otherwise applicable federal standards or requirements;

(2) require levels of control for each affected facility and source no less stringent than those contained in the otherwise applicable federal standards or requirements;

(3) require compliance and enforcement measures for each facility and source no less stringent than those in the otherwise applicable federal standards or requirements;

(4) express levels of control, compliance, and enforcement measures in the same form and units of measure as the otherwise applicable federal standards or requirements; and

(5) assure compliance by each affected facility no later than would be required by the otherwise applicable federal standard or requirement.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45; Eff. July 1, 1998.*

15A NCAC 02Q .0714 WASTEWATER TREATMENT SYSTEMS AT PULP AND PAPER MILLS

(a) This Rule applies to wastewater collection and treatment systems at pulp and paper mills that are exempted under Rule .0702 of this Section.

(b) Except for facilities that employ activated sludge type wastewater treatment systems, the owner or operator of a wastewater collection and treatment system covered under this Rule shall:

(1) submit to the Director estimates of hydrogen sulfide, total reduced sulfur, and methyl mercaptan emissions from wastewater collection and treatment systems and components using estimation methods or factors developed through industry testing and analytical studies and approved by the Director by November 1, 2005. In deciding approval of the estimation methods and factors, the Director shall consider field validation procedures including the number of valid samples taken, when measurements are made, laboratory and field measurement quality assurance procedures, and other information necessary in producing accurate and precise measurements. The Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by January 1, 2006;

(2) using the emission estimates developed under Subparagraph (b)(1), perform air dispersion modeling of all hydrogen sulfide emission sources, including all emissions associated with the wastewater collection and treatment system, as described in 15A NCAC 02D .1106 (a) through (i). If the modeling analysis demonstrates that predicted concentrations of hydrogen sulfide are below the acceptable ambient levels outlined in 15A NCAC 02D .1104, no further plan development, measurement or monitoring action is required to maintain the exemption provided by this Rule. The results of the favorable modeling demonstration must be submitted to the Director by July 1, 2006. The Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by September 1, 2006;

(3) if the dispersion modeling performed under Subparagraph (b)(2) of this rule shows that the acceptable ambient level for hydrogen sulfide is exceeded, submit to the Director, on or before September 30, 2006, for approval by the Director, an ambient air quality monitoring plan designed to assess actual ambient levels of hydrogen sulfide typical of pulp and paper mill operations. The monitoring plan may be undertaken at each of the individual mill sites or, at the option of the affected mill sites, it may be undertaken at a single North Carolina mill site that the Director determines to be representative of the industry. The Director shall complete review and make the decision regarding approval of the monitoring plan by December 31, 2006;

(4) by June 30, 2007, implement the ambient monitoring study plan required in Subparagraph (b)(3) to determine the actual ambient levels of hydrogen sulfide near pulp and paper mills;

(5) complete the ambient hydrogen sulfide monitoring plan and report the results to the Director and to the Chairperson of the Environmental Management Commission by December 31, 2008 and the Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by February 28, 2009 for further consideration.

(c) To perform ambient monitoring for hydrogen sulfide under Subparagraph (b)(3) of this Rule, the owner or operator shall use monitoring methods and procedures approved by the Director. The Director shall approve the monitoring methods and procedures if he determines that they are an appropriate measure of ambient air concentrations of hydrogen sulfide.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143B-282; Eff. April 1, 2005.*

Commenter	Summary of Comment
Jody Higgins	Concern about fumes and odors from a specific asphalt plant.
Laura Kranchalk	Concern about family's health and quality of life nearby a proposed cement plant.
Rachel Cole	Keep regulations for toxics not covered by federal regulations.
Ellen Hunter	Concern about air pollution and quality of life nearby a proposed cement plant.
Cindi Hamilton	Encourages tougher regulations on open burning.
Deb Arnason	Concerns about reducing air quality standards.
Juan Beerios	Encourages protecting the health of their community.
Megan McLaurin	Concern about lowering standards for toxic air pollutants. Suggests maintaining standards or making them stronger.
Lynn Hale	Concern about eliminating NC regulations. Suggests maintaining standards or making them stronger.
Duke Energy	Strongly support an exemption for natural gas and propane combustion units, and emergency engines. Recommend exemptions for portable/non-stationary reciprocating internal combustion engines (RICE) subject to 40 CFR Parts 89, 90 or 1054 and RICE subject to NSPS Subpart IIII or JJJJ.
David Ross	Concerned about regulations being considered a burden. Consider explaining the need for demonstrations to protect public health.
Manufacturers and Chemical Industry Council of North Carolina (MCIC)	Supports all seven (7) of the changes discussed at the September 25, 2012, DAQ stakeholders meeting. Recommends the development of matrices to help determine whether a more detailed review and analysis of air toxics emissions is necessary. Recommends deleting the definition of "unadulterated wood" or alternatively, revise the definition to be consistent with how EPA defines biomass in the Boiler MACT. Also, notes the importance of DAQ and the Environmental Management Commission moving forward on the revision of the AAL for arsenic.
Nucor Steel	Supports all seven (7) of the changes discussed at the September 25, 2012, DAQ stakeholders meeting, as well as any additional options that reduce the regulatory burden. Additionally, recommends repeal of the State Air Toxics Program be considered, with possibly retaining some authority for the Director to address unique situations.
Southern Environmental Law Center (SELC)	DAQ's implementation of Section 1 is premature

	and unauthorized. DAQ must: • Define unacceptable risk. • Collect sufficient data from a facility to determine risks. • Specify models and averaging times. • Clarify that facilities with non-exempt sources must still comply with the air toxics program. • Provide procedures for determining when an existing MACT-regulated facility presents an unacceptable risk. • Evaluate sources near vulnerable populations. It would be imprudent to make sweeping changes to the air toxics program under Section 3 at this time. DAQ cannot raise the TPERs and maintain protection of public health. DAQ should not provide a blanket exemption for natural gas combustion units. Alternatively, if DAQ pursues this exemption, craft it such that only smaller sources will be eligible. DAQ should not exempt emergency engines. Alternatively, simplify the process for emergency engines rather than completely exempting them. Registering, rather than permitting, small sources would not increase efficiency or protect public health. Do not dispose of the SIC Call. Do not allow facilities subject to MACT to simply comply with maximum feasible control. DAQ should not use a facility's projected actual emissions to determine whether the facility is subject to and in compliance with the air toxics program.
Blue Ridge Environmental Defense League (BREDL)	Concern about public's health. DAQ has a difficult task considering monetary and staff cuts. See attached document submitted by BREDL for additional detailed comments.
Mecklenburg County Land Use and Environmental Services Agency – Air Quality	NC air toxics regulations are a critical part of the protection of public health and should only be revised in such a manner as to preserve this most important of the three factors being considered. Supports: • Re-evaluating toxic permitting emission rates (TPERs). • Exempt emergency engines. • Exempt natural gas and propane combustion units. • Register rather than permit sources less than certain emissions thresholds. • Do not retain SIC call. Mecklenburg County does not support a broad

	application of MACT = Maximum Feasible Control because it does not maintain protection of public health. An alternative is to allow any facility to demonstrate technical infeasibility or economic hardship. The evaluation of projected actual emissions does not appear to constitute a change in the current requirements.
Jackson Paper	Strongly urges DAQ to proceed with the arsenic AAL rulemaking and suggests that it be included in the report to the ERC. Supports all seven (7) of the changes discussed at the September 25, 2012, DAQ stakeholders meeting.
American Home Furnishings Alliance (AHFA)	Supports all seven (7) of the changes discussed at the September 25, 2012, DAQ stakeholders meeting. Suggests the definition of "unadulterated wood" is no longer needed. Alternatively, if the term "unadulterated wood" cannot be removed, revise the definition to be consistent with how EPA defines biomass in the Boiler MACT. Suggested the following text for the new definition in 02Q .0703: "Unadulterated wood" means any wood-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue and wood products (e.g., trees, stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings and shavings).



Duke Energy Corporation
P. O. Box 1551
Raleigh, NC 27602

October 09, 2012

Sent Via E-mail (daq.publiccomments@ncdenr.gov)
Ms. Sheila Holman, Director
North Carolina Division of Air Quality
1641 Mail Service Center
Raleigh, NC 27699-1641

Re: Review of NC Toxic Air Pollutant Rules

Dear Ms. Holman:

Carolina Power & Light Company, doing business as Progress Energy Carolinas, Inc., and Duke Energy Carolinas (hereafter referred to as the Companies) are regulated electric utilities operating in North Carolina and South Carolina that serve approximately 3.9 million homes, businesses and industries. The Companies are subsidiaries of Duke Energy Business Services LLC, which is the largest electric holding company in the United States, supplying and delivering energy to approximately 7.1 million electric customers located in six states in the Southeast and Midwest. It owns a diverse mix of approximately 58,200 megawatts of electric generating capacity in the U.S. that includes coal, nuclear, natural gas, oil, and renewable resources.

The Companies received a letter from the Division of Air Quality (DAQ) dated September 5, 2012 announcing a review the state's air toxics rules and a public meeting to be held on September 25, 2012 for the purpose of gathering addition ideas from others outside of the agency. In response, the Companies evaluated the rules, their experiences with rule implementation and the "options" presented at the public meeting by DAQ staff. After much thought and consideration, the Companies offer the following comments:

- The Companies strongly support an exemption for natural gas and propane combustion units, including engines.
- The Companies strongly support an exemption for emergency engines.
- The Companies also recommend exemptions for portable/non-stationary reciprocating internal combustion engines (RICE) subject to 40 CFR Parts 89, 90 or 1054 and stationary RICE subject to NSPS Subpart IIII or JJJJ.

The Companies appreciate the effort DAQ is making to assess its rules and the opportunity to provide comments. Please do not hesitate to contact me at 919-564-5438 if you have any questions.

Sincerely,

Mick Greeson

Mick Greeson
Director, Environmental Affairs – North Carolina

Appendix E

From: S David Ross [sdavidross@juno.com]
Sent: Tuesday, October 09, 2012 12:54 PM
To: SVC_DENR.DAQ.publiccomments; Holman, Sheila; Cherry, Lori
Cc: Chuck.Greco@MecklenburgCountyNC.gov
Subject: Comment on DAQ RfC on the Air Toxics Program

I'm sorry to read in your announcement (http://daq.state.nc.us/news/pr/2012/toxics_09072012.shtml) that the management and staff of North Carolina's Division of Air Quality have informed the politicians that the Air Toxics regulations are a "burden." Having worked with Air Toxic regulations in the States of Maryland and North Carolina, including work with the Federal regulations – National Emission Standard for Hazardous Air Pollutants ("NESHAPs") found in both 40 CFR 61 and 40 CFR 63 (the referenced MACT rules), for more than twenty years, I have a unique insight into the work involved with the regulations.

Both the States of Maryland and North Carolina followed the EPA's guidelines for establishing Air Toxics regulations in the 1980's. As well described by George "Tad" Aburn, who developed Maryland's Air Toxics regulations, these regulations are a return to the direct protection of public health from individual air pollutants. Mr. Aburn also explained that regulating individual pollutants also would force technology (manufacturing and operational procedures) and reduce emissions of ozone-producing volatile organic compounds ("VOCs"). For evidence of this, look at the Mobile Source Air Toxics regulation which effected a change in gasoline formulation.

Your notice indicates that the MACT rules are technology-forcing. This is a true statement about phase I of the rules; however, you omitted to mention phase II of the MACT rules, which were implemented for coal-fired boilers regarding hydrogen chloride and chlorine. Phase II of the MACT rules, like EPA's Prevention of Significant Deterioration ("PSD") rules, require Gaussian dispersion modeling to determine the impact of pollutants coming from emission sources not on the site of the emission source. The latter describes North Carolina's Air Toxics regulations found in section .1100.

As a public health engineer ("air quality regulator"), I enforced the Air Toxics regulations making applicants demonstrate that they will not harm their neighbors due to their emissions. I also was the environmental modeler who calculated/confirmed that there would be no locations off the emitters property that exceeded the standards ("AAL's" for the North Carolina Air Toxics regulations). Having also served as a design mechanical engineer, I've been able to advise people how to design emission sources that would reduce emissions and conserve energy. Engineering environmental control into the design of processes is much easier and cost effective than adding control equipment onto processes.

Regarding the exemption of pollution sources from the State Air Toxics regulations because they are compliant with MACT, I would agree with that only if the MACT has progressed to phase II, and regulates the same pollutants that would be regulated by the North Carolina Air Toxics regulations. Exempting sources because they comply with phase I of a MACT regulation is comparable to exempting a car from the emissions inspection because they comply with the safety inspection.

Regarding the increasing of the efficiency of DAQ resources, the only way to do that is by an attitude adjustment. By explaining the need for the compliance demonstration to protect the health of their neighbors, applicants will be less likely to complain about having the work done (unless they hire consultants who gauge them with high costs). Not having complaining applicants reduces a great deal of burden on the staff. If the staff feels that protection of public health from toxic air pollutants is a burden, maybe they should find less burdensom jobs so they can be replaced by people who do not consider this a "burden."

S. David Ross
139 Sandymead Road
Matthews, North Carolina 28105-2595



October 9, 2012

VIA ELECTRONIC MAIL

Ms. Sheila Holman, Director
Division of Air Quality
North Carolina Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601

Subject: Recommended Reforms to North Carolina's Air Toxics Program

Dear Director Holman:

Thank you for the opportunity to submit the following comments in follow-up to the air toxics stakeholders meeting that the Division hosted on September 25, 2012. These comments are presented on behalf of the members of the Manufacturers and Chemical Industry Council of North Carolina (MCIC or the Council). As you know, many of our member companies are directly affected by the air toxics regulatory program.

At the stakeholders meeting on September 25, Deputy Director Abraczinskas reviewed seven (7) specific changes that the Division is considering:

- Re-evaluate toxic permitting emission rates (TPERs)
- Exempt natural gas and propane combustion units
- Exempt emergency engines
- Do not retain SIC call
- Maximum Feasible Control = Maximum Achievable Control
- Evaluate projected actual emissions

You will recall from your meeting with MCIC's Science and Technology Committee on July 20, 2012, that several of the changes outlined by Mr. Abraczinskas were also recommended by our Committee members.

The Council believes that all seven (7) of the changes discussed at the stakeholders meeting have merit, and should be recommended to the Environmental Review Commission and to the Environmental Management Commission.

In addition to the reforms presented at the stakeholders meeting, the Council continues to believe that the agency's administration of the air toxics program, as well as the regulated community's ability to predict or anticipate the agency's actions with respect to a specific permit application, would be further enhanced through the development and use of a matrix (or matrices).

The Council believes that a matrix (or matrices) could be developed in a way that would allow both the agency and a regulated entity to fairly accurately predict whether or not the air toxics emissions from a particular source or a group of sources would be sufficiently high enough to warrant a more detailed review and analysis. We believe that such a tool would certainly "increase the efficient use of DAQ resources" as prescribed by this year's air toxics reform legislation, and it would also afford a much higher level of regulatory predictability for the regulated community.

The Council also believes that the current definition of "unadulterated wood" in the air toxics rules creates an unnecessary and erroneous distinction between various wood fuels, is no longer needed, and should be deleted. Alternatively, if the term "unadulterated wood" is not deleted from the air toxics rules, then, at a minimum, the definition should be revised to make it consistent with the manner in which EPA has classified wood fuel as biomass in the major source Boiler MACT rule.

Finally, the Council believes that it is important for the DAQ and the Environmental Management Commission to move expeditiously to revise the AAL for arsenic as unanimously recommended by the NC Science Advisory Board for Air Toxics (NCSAB) in January 2012.

Thank you for organizing the stakeholders meeting on September 25 and for your continuing dialog with the Council on these issues. The Council certainly appreciates the opportunity to meet with you and your staff, as well as other stakeholders and interested parties, to reform the air toxics program in ways that reduce the regulatory burden to our members and provide for reasonable certainty that the public's health is protected.

If you have any questions, or if you need additional information or clarification concerning any of our comments, please contact me at telephone number 919-834-9459, extension 31.

Sincerely,

A. Preston Howard, Jr., P.E.
President

NUCOR
PLATE MILL

October 9, 2012

Sheila Holman, Director
NC DENR DAQ
1601 Mail Service Center
Raleigh NC 27699-1601

Re: Review of State Air Toxics Rules

Dear Director Holman;

Nucor appreciates the time the Division of Air Quality (DAQ) has spent reviewing the State Air Toxics Program pursuant to Session Law 2012-91. The options provided during the September 25th Stakeholders Meeting provide a range of changes that would reduce unnecessary regulatory burdens and increase the efficient use of DAQ and business community resources. Nucor recommends that you include all seven options in your December 1 report to the Environmental Review Commission (ERC).

Following submission of the report to the ERC, we recommend that DAQ proceed to rulemaking and submit all seven options, as well as any additional options that reduce the regulatory burden, to the Environmental Management Commission for adoption.

In addition, we recommend that DAQ fully consider repeal of the State Air Toxics Program entirely. As described at the Stakeholders meeting, even with the changes already implemented under the new statute substantial DAQ resources are still consumed in the risk review process. With the exception of the Trinity Foam situation, we are not aware on any significant risk situation that has been identified or corrected by the State program. Consequently, the question is what value is added by this program for all of the DAQ time and resources, as well as permittee time and resources, expended? We believe that DAQ should seriously consider whether the program should be continued, with the substantial emissions reductions under the Federal hazardous air pollutant program, NAAQS requirements, and the Federal mobile source program. Unless DAQ can justify its continued existence with real air toxics health threats, the State program should be eliminated, other than possibly retaining some authority for the Director to address a unique situation like Trinity.

Please let us know if we can provide any additional information to assist your review.

Very truly yours,

Terry Hairston
Environmental Manager

PO BOX 279 WINTON, NORTH CAROLINA 27986 PHONE 252 356 3700 FAX 252 356 3750
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SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450 601 WEST ROSEMARY STREET, SUITE 220 CHAPEL HILL, NC 27516-2356 Facsimile 919-929-9421

October 9, 2012

Sheila Holman
Division of Air Quality
1641 Mail Service Center
Raleigh, North Carolina 27699-1641

VIA ELECTRONIC MAIL (daq.publiccomments@ncdenr.gov)

Re: Comments on Potential Amendments to the Air Toxics Rules Pursuant to Section 1 and Section 3 of Session Law 2012-91

Dear Ms. Holman:

The Southern Environmental Law Center, on behalf of itself, Clean Air Carolina, and Medical Advocates for Healthy Air, respectfully submits the following comments on potential changes to the North Carolina air toxics program. On September 5, 2012, the Division of Air Quality ("DAQ") published notice of its review of the air toxics rules pursuant to Section 3 of Session Law 2012-91. DAQ also stated its intention to consider potential amendments to the air toxics rules pursuant to Section 1 of Session Law 2012-91 at this time. On September 25, 2012, DAQ held a stakeholder meeting and presented an overview of possible changes to the air toxics rules.

In the public notice, DAQ stated that it would accept written comments through October 9, 2012. These comments are therefore timely. DAQ also declared that it would accept supplemental comments during the pendency of its review process. The Southern Environmental Law Center therefore reserves the right to provide additional comments.

Background

The air toxics program was established in 1990 "to protect public health."[1] The program fills gaps left by the federal hazardous air pollution program. As the North Carolina Department of Energy and Natural Resources ("DENR") explains, "[f]ederal programs [were] not intended to comprehensively address all air toxics emissions", but were instead "designed in anticipation that state and local air toxics programs would address local issues and federal program limitations."[2]

[1] *See* Control of Toxic Air Pollutants, 15A N.C.A.C. 2D .1101 (2012).

[2] Control of Toxic Air Pollutants in North Carolina, DENR, Division of Air Quality, Environmental Review Commission Meeting at 12 (Sept. 28, 2011), *available at* http://www.wral.com/asset/news/state/nccapitol/2011/09/28/10196478/Holman_presentation.PDF, Attachment A.

The air toxics program supplements the federal hazardous air pollution regulations in a number of key respects. First, the air toxics program covers 21 pollutants that are not subject to federal hazardous air pollutant regulations.[3] These pollutants include acetic acid, ammonia, bromine, fluoride, hydrogen sulfide, and nitric acid.[4] The air toxics program is the only source of protection against emissions of these air pollutants for the people of North Carolina. Second, while the federal program imposes technology-based standards, the state program institutes health-based standards to ensure that levels of pollution in the ambient air are safe. This protects the public in situations where a facility uses state-of-the-art pollution controls, but still contributes to unacceptable concentrations of ambient pollutants. Finally, the federal program applies on a source-by-source basis, so that some sources at a facility may not be subject to any limits. The air toxics program, on the other hand, applies to all sources at a regulated facility. In sum, the air toxics program safeguards public health where the federal program falls short.

Even so, only 75% of toxic air pollution is currently regulated under the state and federal rules combined.[5] North Carolina is home to more hazardous air pollutant emissions than almost any other state, and ranks fourth in the nation according to the Toxics Release Inventory.[6] Any attempts to weaken the North Carolina air toxics program would exacerbate this situation and the adverse health effects of toxic pollutants.

On June 28, 2012, the North Carolina legislature enacted amendments to the air toxics program.[7] Section 1 of the amendments directs DENR to implement rules that exempt sources subject to federal hazardous air pollutant regulations from air toxics rules. But if an exempt source presents an "unacceptable risk to human health," DENR must require the facility to eliminate this unacceptable risk. DENR must make a written finding of unacceptable risk, which can be based on modeling, epidemiological studies, monitoring data, or other information. Section 3 of the amendments requires DAQ to review the air toxics rules "to determine whether changes could be made to the rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining protection of public health." The amendments direct DAQ to "report the results of its review, including recommendations, if any, to the Environmental Review Commission".

DAQ must take this opportunity to ensure that the new law is implemented in a way that promotes the overarching purpose of the act: the protection of public health.

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[3] *See* Toxic Air Pollutants Regulated by North Carolina, EPA and South Carolina 57-64, *available at* http://www.ncleg.net/documentsites/committees/ERC/2011-2012%20ERC%20Documents/2%20-%20October%2012,%202011/Handouts%20and%20Presentations/2011-1012%20ERC%20Submittal%20-%20Attachments.pdf, Attachment B.

[4] *Id.*

[5] Control of Toxic Air Pollutants in North Carolina, *supra* note 3, at 6.

[6] *Id.* at 8.

[7] *See* An Act to Exempt from State Air Toxics Emissions Controls Those Sources of Emissions That Are Subject to Certain Federal Emissions Requirements, 2012 N.C. Sess. Laws 91 (2012).

Section 1

1. DAQ's implementation of Section 1 is premature and unauthorized.

DAQ states that it has been implementing the session law since its effective date of June 28, 2012. As such, DAQ is currently exempting sources subject to the federal rules listed in section 1(a)(5)a, unless the agency determines that they present an unacceptable risk to human health.[8]

But DAQ's actions violate the plain language of the session law. If a statute is unambiguous, North Carolina courts will not defer to the interpretation of the agency charged with implementing the statute.[9] Instead, the agency must apply the statute as written. Section 1(a)(5) states that the Department "shall implement ***rules*** adopted pursuant to this subsection as follows . . ." (emphasis added). DAQ has not adopted rules to exempt facilities that are subject to federal hazardous air pollutant regulations, and therefore it is prematurely granting exemptions without the regulatory framework mandated by the session law. This violates the plain language of the statute, and DAQ must cease implementing section 1(a)(5)a-b until it has adopted the legally required rules. Any exemptions that have been granted by DAQ so far are unauthorized and unlawful.

2. DAQ must define "unacceptable risk to human health."

Under the amendments to the air toxics program, the Department must determine whether increased toxic emissions from a new facility or a modification of a facility present an "unacceptable risk to human health."[10] But "unacceptable risk" is not defined in the statute or in DAQ's regulations.

DAQ must provide a concrete, regulatory definition of "unacceptable risk" that protects the public from harmful levels of toxic air pollutants. This definition must be "commensurate with established air quality standards."[11] At the very least, any emission that causes or contributes to an exceedance of acceptable ambient levels ("AALs") should be defined as an "unacceptable risk." DAQ has indicated that an exceedance of an AAL would be considered an unacceptable risk, but it should codify this understanding to provide reassurance to the public and ensure that this interpretation is not abandoned in the future. Moreover, any exceedance of an AAL would endanger public health and contravene the purpose of the air toxics program. DAQ therefore cannot consider any AAL exceedance to be an acceptable risk. As explained in the following paragraphs, the regulations should also require DAQ to consider all potential exposure routes, impacts of multiple facilities and combinations of pollutants, and background pollution levels.

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[8] *See* 2012 N.C. Sess. Laws 91 § 1(a)(5)a.

[9] *See Charlotte-Mecklenburg Hosp. Auth. v. N.C. HHS*, 201 N.C. App. 70, 72-73 (N.C. Ct. App. 2009).

[10] 2012 N.C. Sess. Laws 91 § 1(a)(5)b.

[11] *Id.* § 1(a)(5).

"Unacceptable risk" must be defined based on all relevant transmission pathways, not just inhalation. Human exposure to air pollutants occurs through multiple pathways, including water, soil, ingestion, and inhalation. For example, mercury that is emitted into the air eventually deposits into water bodies, where microbial action converts it into methylmercury. People are primarily exposed to methylmercury by eating fish[12] in which methylmercury accumulates and concentrates, rather than through inhalation of mercury.[13] Mercury levels in the kinds of fish people eat can be hundreds of thousands to millions of times more concentrated than the water in which they swim.[14] Mercury concerns are particularly salient in North Carolina, where all 13,123 water bodies in the state are listed as impaired for mercury.[15] DAQ must therefore consider all exposure pathways to determine whether a facility's emissions pose an unacceptable risk.

The current AALs fail to account for numerous exposure pathways, and therefore cannot alone be used to ensure that there is no unacceptable risk to human health. DENR relies on the North Carolina Scientific Advisory Board ("SAB") to formulate recommendations for acceptable ambient concentrations for toxic air pollutants.[16] The SAB conducts a number of assessments to determine the AALs, including an exposure assessment.[17] According to SAB guidelines, exposure assessments "generally take into account potential inhalation exposures only."[18] The SAB *may* also consider dermal exposure and exposure due to deposition of airborne pollutants onto soil or water.[19] But the SAB has not always done so when proposing AALs. For example, when the SAB conducted its latest review of mercury, it concluded that it was "unable to fulfill the request to develop an AAL based on indirect [i.e., non-inhalation] routes of exposure."[20] The SAB explained that it lacked critical information on North Carolina freshwater systems, emission factors, and appropriate atmospheric models at that time.[21] The current AALs therefore do not consider environmental fate and transport or likely routes of environmental exposure to mercury.[22] DAQ must ensure that all exposure pathways are taken into account when determining whether the emission of any toxic air pollutant presents an unacceptable risk to human health, and cannot rely solely on AALs.

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[12] EPA, Mercury Study Report to Congress, EPA-452/R-97-005 (Dec. 1997) ("Mercury Study"), Vol. 1,0-2.

[13] *Id.* at 2-5.

[14] Environmental Protection Agency, Mercury, Human Exposure, http://www.epa.gov/hg/exposure.htm#3 (last visited Oct. 9, 2012).

[15] *See* North Carolina Mercury Total Maximum Daily Load ("TMDL") at 4 (July 5, 2012).

[16] Secretary's Science Advisory Board on Toxic Air Pollutants, Internal Guidelines for Toxicological Evaluation of Chemicals Released to the Air, http://daq.state.nc.us/toxics/risk/sab/sabtoxra.shtml.

[17] *Id.*

[18] *Id.*

[19] *Id.*

[20] North Carolina Science Advisory Board, Mercury in the Environment at 3, 68 (Dec. 5, 2000), *available at* http://daq.state.nc.us/toxics/risk/sab/, Attachment C.

[21] *Id.* at 3.

[22] *Id.* at 14.

DAQ must also take into account other sources of emissions and background levels of pollutants in its unacceptable risk analysis. If emissions of multiple facilities exceed the AALs, the air toxics program requires the facilities to "apply additional controls or to otherwise reduce emissions."[23] DAQ should clarify that the same principle applies when multiple facilities emit toxic pollutants that present an unacceptable risk. The purpose of the air toxics program is to protect public health, and DAQ cannot achieve this goal if it allows unacceptable risks to occur simply because multiple facilities contribute to the problem. Similarly, DAQ must also consider background levels of pollutants in its analysis. Otherwise it cannot ensure that a facility's emissions will not further exacerbate existing pollutant levels to the point that they present an unacceptable risk of harm. The regulations should therefore explain that DAQ will consider these aggravating factors in its risk analysis.

DAQ must also consider the cumulative impact of multiple pollutants. The current air toxics regulations acknowledge that the effects of multiple pollutants may be additive.[24] The regulations should clarify that DAQ will take this into account when considering whether a facility poses an unacceptable risk.

Finally, DAQ should not create an exemption for facilities that are located in remote areas. Under the current air toxics program, facilities do not have to show that their emissions are below acceptable ambient levels, as long as they are located in areas that are unoccupied or uninhabitable.[25] But "uninhabitable" and "unoccupied" are vague, undefined terms in the regulations. For example, a facility could emit dangerous levels of toxic pollutants, thereby making it unsafe for anyone to live in the surrounding area. Such an area might be considered "uninhabitable," but it would be absurd to allow a facility to create its own loophole in this manner. Similarly, a facility could emit toxic levels of pollutants in a habitable but unoccupied area, thereby effectively prohibiting people from moving into the vicinity. Moreover, pollutants with acute health effects may harm people even in uninhabited locations. People may fish and recreate in these areas, and thereby be exposed to toxic pollutants. In sum, it would be contrary to the purpose of the air toxics program for DAQ to exempt facilities from the unacceptable risk analysis based on their location in an uninhabitable or unoccupied area.

3. The regulations must authorize DAQ to collect sufficient data from a facility to determine whether there is an unacceptable risk.

Section 1 requires DAQ to review a facility's application and determine whether its emissions present an unacceptable risk to human health.[26] But the law does not specify what information a facility must provide to allow DAQ to conduct its determination. DAQ should promulgate regulations that clarify what information a facility must give in its permit application. At a minimum, this information must include actual, potential, and permitted emission rates for toxic emissions from each source at an existing facility, and projected actual and potential

[23] 15A N.C.A.C. 2D .1107(a).
[24] *See id.* 2D .1108.
[25] Toxic Air Pollutant Procedures, 15A NCAC 2Q .0709(a)(2)(A) (2012).
[26] 2012 N.C. Sess. Laws 91 § 1(a)(5)b.

emission rates for each source at a new facility. Facilities must provide these emission rates using mass balancing analysis, source testing, or other methods approved by the Director that provide an equivalently accurate estimate of the emission rate.[27] Without this data, DAQ could do nothing more than guess whether a facility presents an unacceptable risk to human health.

4. DAQ must specify the models and averaging times that it will use in making its determination.

DAQ must create regulations that identify the models it will rely on when determining whether a facility presents an unacceptable risk. Regulations currently prescribe standards for the models that DAQ may use to see whether a facility will exceed AALs.[28] DAQ should follow this approach and use models that are at least as rigorous and accurate as the model described in 40 C.F.R. 51.166(l) or its equivalent.

In addition, DAQ must specify what time period it will use to evaluate a facility's impact on human health (i.e., a one-hour or 24-hour averaging period for emissions). DAQ should conduct its analysis and set emission limits based on averaging times that correspond to the health risks for each pollutant. Thus, for pollutants that that present risks to people from short-term, higher-level exposures, DAQ should evaluate a facility's emissions and set limits for short-term peak emissions. Where chronic exposure to low-levels of pollutants pose a risk to people's health and welfare, DAQ should evaluate emissions and set limits on that basis. Notably, some pollutants may present risks at short-term, peak concentrations as well as from chronic exposure to lower concentrations. In such cases, the evaluation and resulting emission limits must address the full range of health risk scenarios.

5. DAQ should clarify that facilities with non-exempt sources must still comply with the air toxics program.

Under the amendments to the air toxics program, a source subject to federal hazardous air pollution regulations is no longer subject to the air toxics rules. But 15A N.C.A.C. 2Q .0711 states that an air toxic permit is required for any facility whose emissions from "all sources" are greater than any TPERS. Therefore, if a facility contains some non-exempt sources, DAQ must assess the facility's emission rates from all sources to see whether they exceed TPERs. If so, the facility must submit plant-wide modeling to show that it will not violate the air toxics rules by exceeding AALs. DAQ should clarify and emphasize this point in the Air Toxics regulations.

6. The regulations must provide procedures for determining when an existing MACT-regulated facility presents an unacceptable risk to human health.

The amendments state that "[u]pon making a written finding that a source or facility presents...an unacceptable risk to human health," DENR must require the facility to eliminate

[27] *See* 15A NCAC 2D .1106(g).
[28] *Id.* 2D .1106(e).

the risk. For new or modified sources, the Department can issue this finding after reviewing a permit application submitted by the source. But the law does not specify what might trigger DAQ's evaluation for an existing source that is not modified. Importantly, the law does not limit the situations under which DAQ can make a written finding, and therefore does not preclude DAQ from considering whether existing sources may present an unacceptable risk.

DAQ must clarify the circumstances under which it will review existing source emissions. This should include instances where DAQ lowers an AAL based on new evidence of a pollutant's impact on human health. If an existing facility exceeds the new AAL but did not exceed the previous AAL, DAQ must issue a written finding requiring the facility to eliminate this unacceptable risk. In addition, DAQ should review existing source emissions when a facility becomes subject to federal HAP regulations for the first time, but is not yet subject to TAPs regulations. DAQ should review the federal HAP permit application to determine whether the facility presents an unacceptable risk. Finally, an existing facility may also present an unacceptable risk if there is a change in weather patterns or any other change that influences the facility's emission, but would not be considered a "modification." DAQ should review all of these circumstances to determine whether existing facilities present an unacceptable risk.

7. DAQ should evaluate sources located near vulnerable populations with particular care.

The AALs are designed to protect sensitive sub-populations in North Carolina. To make certain that the program achieves this goal, DAQ should require facilities located in proximity to these groups to provide additional assurances that their emissions will not endanger public health. These vulnerable groups include children, senior citizens, pregnant women, and sick people. Therefore facilities located near schools, hospitals, nursing homes, and daycare facilities must take extra measures to prove that their emissions will not harm individuals that live or spend time in the area.

The USA Today newspaper published a study that compares health risks from exposure to toxic air pollutants outside schools across the country.[29] The study used a Risk Screening Environmental Indicators computer model, developed by the U.S. Environmental Protection Agency, to relatively rank 127,800 schools based on exposure to toxic chemicals. The report revealed that seven North Carolina schools were in the first percentile of schools in areas of highest modeled levels of toxic chemicals. These schools are located in Canton, Gastonia, Maxton, and Raleigh, and are exposed to dangerous levels of sulfuric acid, diisocyanates, aniline, and nitrobenzene, among other pollutants. As noted above, the air toxics program is the only set of regulations that even purports to protect the public from dangerous ambient concentrations of these pollutants. DAQ must subject facilities in these areas to heightened analysis, and ensure that these facilities are not granted a blanket exemption from the air toxics program.

[29] The Somekstack Effect – Toxic Air and America's Schools, USA TODAY (Dec. 8, 2008), *available at* http://content.usatoday.com/news/nation/environment/smokestack/index.

Section 3

8. It would be imprudent for DAQ to make sweeping changes to the air toxics program under Section 3 at this time.

DAQ is not required to make any additional changes to the air toxics regulations at this time beyond those required by Section 1(a)(5) of the amendments. Section 3 of the session law requires DAQ to determine whether changes could be made to the air toxics rules or their implementation to "reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining protection of public health." DAQ must "report the results of its review, including recommendations, if any, to the Environmental Review Commission."

But DAQ cannot ensure that additional alterations under Section 3 would maintain protection of the public health, especially when the full impacts of the exemptions in Section 1 are unknown. As described above, many of the requirements in Section 1 remain undefined and unexplored, much less tested in practice. DAQ should not rush changes under Section 3 until after it has implemented Section 1 of the law and evaluated the effects of those changes on the efficacy of the program. Doing so would result in redundancies, as DAQ would likely have to revise the regulations again after the effects of the Section 1 changes become clear. This would violate one of the commandments of Section 3 by inefficiently wasting DAQ resources. Most importantly, DAQ would not be able to guarantee protection of public health if it further weakened the air toxics rules at this time. DAQ should therefore report to the ERC that it has no recommended changes at this time.

9. DAQ cannot raise the TPER thresholds and still maintain protection of public health. (Option 1)

As a preliminary matter, DAQ should make the current guidelines for setting toxic air pollutant permitting emission rates ("TPERs") and the models used to develop TPERs available and easily accessible to the public. Only then will stakeholders be able to determine the full impact of the regulatory changes that DAQ is considering.

a. DAQ must set TPERs at the lowest level necessary to ensure that facilities will not violate AALs.

DAQ must ensure that no facility or combination of facilities exceed the AALs for any toxic pollutant.[30] To do so, DAQ first determines the minimum emissions level – called a TPER – at which a facility could possibly exceed an AAL.[31] If a facility's emission rates are above the TPER for one or more pollutants, the facility must demonstrate that it will not cause or

[30] 15A N.C.A.C. 2D .1104 ("A facility shall not emit any of the following toxic air pollutants in such quantities that may cause or contribute beyond the premises (adjacent property boundary) to any significant ambient air concentration that may adversely affect human health."); *Id.* 2D .1107.

[31] *Id.* 2Q .0711.

contribute to an exceedance of an AAL.[32] If a facility's emission rates are below the TPER, no further effort is made to determine whether the emissions will violate an AAL. Because DAQ does not investigate facilities with emissions below the TPERs, DAQ must set the TPERs so low that it is impossible for any facility to exceed the AALs at those emission rates. This means DAQ must consider reasonable worst-case scenarios when setting TPERs. Here, the term "reasonable worst-case scenario" means the lowest emission level at which a facility could still, under certain circumstances, cause or contribute to an exceedance of an AAL.

To determine the worst-case scenario, DAQ must consider 1) the geographic and meteorological characteristics of the area surrounding the facility; 2) characteristics of the facility itself, such as the height of emission stacks or other release points, the exit temperature of the exhaust gases, and the exit velocity of pollutants, and 3) cumulative effects from multiple facilities or background levels of a pollutant. All of these factors affect a facility's potential to cause an exceedance of an AAL. DAQ must evaluate the greatest ambient concentration that a facility could produce taking into account all of these factors, plus a margin of safety, as discussed below.

i. TPERs must be low enough to account for weather conditions that result in the highest local concentrations of pollutants emitted by a facility.

Meteorological and topographic conditions affect how pollutants from a facility will be distributed in the air and deposited. DAQ must therefore develop TPERs based on the meteorological conditions that will result in the greatest local concentrations of pollutants. The weather conditions that will satisfy this standard may differ based on the particular characteristics of each toxic pollutant. DAQ must use weather data that correspond to the health-risk averaging times for each pollutant. Thus, for instance, DAQ should use hourly weather data rather than monthly or yearly averages for pollutants that pose health risks based on peak short-term exposures. Moreover, DAQ must tailor its analysis for areas of the state with different weather patterns and topography.

ii. DAQ should consider facility characteristics that would result in the highest impact on ambient levels of pollution, rather than rely on assumptions that are favorable to facility owners.

Many facility parameters affect pollutant dispersion, including 1) stack or release height, 2) exit velocity, 3) exit temperature, 4) stack diameter, and 5) proximity of the emission source to the property boundary.

DAQ proposes to raise the existing TPERs by using "conservative assumptions" about emission rates and facility parameters. But conservative assumptions may be less protective than

[32] *Id.* 2Q .0709, .0711.

reasonable worst-case scenario assumptions. As a result, a substantial number of facilities may exceed AALs, even though their emissions are below TPERs that are based on conservative assumptions. DAQ must ensure that its assumptions fully protect public health with a margin of error, and to do so it must set TPERs based on a reasonable worst-case scenario. In other words, the TPER should be the lowest emission rate that a facility can produce and still cause or contribute to an exceedance of AALs. This may include, for example, an assumption of ground level emissions and a low exit velocity, and an assumption that emission sources abut a facility's property boundary. DAQ should not use assumptions that distort the impact of emission rates on AALs in favor of polluters.

iii. DAQ must set TPERs low enough to account for the potential effects of multiple facilities and background pollutant levels.

Even if a facility could not exceed AALs in isolation, it may do so when its emissions combine with those from other facilities in the same area. DAQ must determine whether the impacts of two or more facilities contribute collectively to the exceedance of an AAL.[33] If so, the facilities must apply additional controls or "otherwise reduce emissions."[34] TPERs must therefore be set at the lowest level necessary to capture cumulative effects from other facilities. If TPERs are set too high, DAQ and the public may never even be aware of situations in which many low-emitting facilities collectively cause a public health problem.

To determine which facilities may have additive impacts, DAQ must have access to adequate mapping of emission sources. The official air toxics program website currently displays a map of toxic air pollutant sources that does not appear to have been updated since 1993.[35] This map shows how many toxic air pollution facilities are located in each county, but does not provide any greater specificity. DAQ must utilize a more detailed, frequently updated map that shows the actual location of facilities and the pollutants emitted by each facility. If two or more facilities that emit the same pollutant are located in close enough proximity to each other to cause cumulative impacts, DAQ must require a modeling demonstration.

Furthermore, DAQ does not currently consider background levels of pollution when setting TPERs.[36] This raises the risk that a facility will exceed AALs, even if its emission rates are too low to cause an exceedance of an AAL independently. A comprehensive assessment of the background levels of toxic air pollution in North Carolina must be conducted in order to

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[33] *Id.* 2D .1107(a), (c).

[34] *Id.* 2D .1107(a).

[35] *See* Division of Air Quality, Hazardous and Toxic Air Pollutants, *Number of Facilities, Number of Toxic Air Pollutants, and Pounds Emitted by County for 1993*, *available at* http://daq.state.nc.us/toxics/hap/, Attachment D.

[36] *See* Air Toxics Program, Acceptable Ambient Levels (AALs), daq.state.nc.us/toxics/aaldisc.pdf ("Since there is not enough monitoring information to be able to know the general ambient concentrations for each of the 97 TAPs, the North Carolina program focuses on what a facility adds to the existing environment.")

allow facilities and DAQ to analyze the emissions that each facility adds to these background levels. Until then, DAQ should set TPERs low with a wide margin of safety to ensure that a facility's emissions do not combine with background levels of a pollutant and exceed public health standards.

The factors in the paragraphs above show that in reality, two facilities with the same emission rates can result in very different ambient levels of a pollutant. DAQ proposes to raise TPERs based on its observation that many facilities that exceed TPERs do not come close to exceeding AALs. But this reasoning defies logic and the requirements of the air toxics program, which prohibit *any* facility from exceeding AALs. Due to the factors listed above, one facility might exceed the AALs, even if other facilities with the same emission rate do not. Therefore DAQ must base TPERs on a worst-case scenario to ensure that all facilities remain below AALs. DAQ's approach also ignores the purpose of a screening level review, which is to identify sources for more detailed study. It is natural and expected that many of the sources that trigger the requirement for a more comprehensive modeling demonstration would not violate the health-based standard. Moreover, DAQ's statement that many permitted facilities do not come close to exceeding AALs may be based on faulty modeling, as discussed below.

In sum, if DAQ uses anything other than reasonable worst-case scenarios, the modeling would not depict maximum pollutant concentrations that might result over time and from a full range of operating and meteorological conditions. As a result, one or more facilities may exceed AALs and endanger public health. Moreover, as noted above, facilities that are below TPER thresholds do not have to submit a permit application or model their emissions. As a result, DAQ and the public cannot readily determine whether a particular facility that is below the TPER threshold is contributing to an exceedance of AALs. Violations of AALs in these circumstances would go unchecked. DAQ must prevent this from occurring by setting TPERs based on a reasonable worst-case scenario with a margin of safety. It cannot allow a facility to evade permit and modeling requirements unless there is absolutely no reasonable chance that the facility, alone or in combination with other facilities, could exceed the AALs.

b. DAQ's observation that many facilities that exceed TPERs do not exceed AALs may be based on faulty modeling.

DAQ is considering raising TPERs because the agency observes many instances where a facility that exceeds TPERs does not come close to exceeding AALs. But evidence suggests that this observation is based on faulty modeling. The modeling and limits for the PCS Phosphate permit illustrate this point.[37] PCS Phosphate is the largest emitter of toxic air pollutants in the state. Yet DAQ concluded that the facility can emit 5,199 pounds of mercury each day and stay below the AAL for mercury. These permitted emissions amount to roughly 949 tons of mercury per year – over six times the amount of mercury that is emitted each year by all U.S.

[37] *See* Southern Environmental Law Center Comments on PCS Phosphate Title V Permit Renewal, Attachment E.

anthropogenic sources.[38] These levels of mercury, a potent neurotoxin, cannot be protective of public health, and call into question DAQ's impression that many facilities do not exceed human health standards.

In addition, many of the modeling inputs for PCS phosphate are outdated; others are estimates rather than measurements.[39] DAQ cannot base its conclusions about facilities' contributions to AALs on such inadequate modeling data.

10. Exempting natural gas and propane combustion units would do little to increase efficiency, but may pose great risks to public health. (Option 2)

DAQ should not provide a blanket exemption for natural gas combustion units. If, as DAQ presumes, most of these units do not emit potentially dangerous levels of toxic air pollutants, then they will be below TPER thresholds and exempt from permitting requirements. If any of these units are above the TPER threshold, then they may potentially emit toxic pollutants at levels that harm human health, either alone or in combination with other facilities.

In the alternative, if DAQ pursues this as a possible exemption, DAQ must craft the exemption so that only smaller sources will be eligible. Sources with the potential to emit above a certain threshold, such as the proposed Sutton plant, must not be exempted.

11. DAQ should not exempt emergency engines. (Option 3)

Emergency engines may be small and numerous, but they are also dirty and inefficient. They often emit a lot of pollution in a very condensed timeframe. These types of units emit formaldehyde, acetaldehyde, methanol, benzene, toluene, 1,3-butadiene, 2,2,4-trimethylpentane, hexane, xylene, naphthalene, PAH, methylene chloride, and ethylbenzene and should not be completely unregulated. Moreover, although these units are expected to be used only in emergencies, facilities may rely on them more frequently if they are unregulated. Industries that cannot shut down for even short time periods, such as internet server facilities, may rely on large emergency generators more regularly.[40]

DAQ must review emergency engines at a facility under the air toxics program. If the facility's combined emission exceed TPERs, DAQ must quantify and impose restrictions on the toxic air pollutants from these sources. In the alternative, DAQ must simplify the process for emergency generators, rather than completely exempting or ignoring them.

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[38] Mercury Study, *surpa* note 14, at Vol. I, 0-1.

[39] *See* Comments on PCS Phosphate, *supra* note 39.

[40] James Glanz, *Power, Pollution and the Internet*, N.Y. TIMES (Sept. 22, 2012), *available at* http://www.nytimes.com/2012/09/23/technology/data-centers-waste-vast-amounts-of-energy-belying-industry-image.html?pagewanted=all&_r=0.

12. Registering, rather than permitting, small sources would not increase efficiency or protect public health. (Option 4)

North Carolina's permitting process provides for full notice and comment by the public, including public hearings. This process is very important for the citizens of North Carolina, and should not be eliminated. With regard to the air toxics program specifically, a permit application and the attendant public process helps inform DAQ of other sources of TAPs emissions in the same geographic area, which is an important factor in the permitting of new or additional sources, no matter how small or seemingly insignificant.

While the "registration" process has not been fully described, it is likely that important information regarding air pollution could be overlooked if facilities only have to register and not apply for a permit. Neither the agency nor the people of North Carolina will be given adequate details of pollutants emitted, emission rates, hours of operation, and other information of great importance to the public such as: whether there are multiple sources of the same pollutant in close proximity to the new source; what types of other centers of human activity are nearby, such as hospitals, schools, parks and residential areas; and other information that would assist DAQ in determining on a case by case basis if a source creates an unacceptable risk to human health.

This would be a very dramatic change to the Air Toxics Program. Hundreds of sources are already being exempt from the program as a result of Session Law 2012-91. This is certainly not the time to reduce even further the amount of information regarding toxic air pollution that will be available to DAQ and the citizens of North Carolina. Emitters in North Carolina reported in the 2010 Toxic Release Inventory over 34 million pounds of toxics and 1.5 million pounds of carcinogens. Reducing "regulatory burden" and ensuring "efficient use of division resources" cannot override the ultimate purpose of the air toxics program which is the protection of public health. DAQ therefore cannot register small sources at this time.

13. DAQ should not dispose of SIC Calls, which allow the agency to gather industry-wide information. (Option 5)

a. Removing SIC Calls would not reduce any burden on facilities, or increase efficient use of Division resources. In fact, it would reduce efficiency because DAQ would have to reach out to each source individually.

DAQ proposes to delete regulations that allow the Director to require all facilities under the same four-digit Standard Industrial Classification ("SIC") to submit an application at one time to comply with the air toxics rules. Currently, the Director can make this call for any facilities in industry groups that are not subject to MACT or GACT, or are only subject to MACT or GACT for unadulterated fuel combustion.[41] A facility subject to a SIC Call must submit an air toxics application for all of its sources, even if they are not in the same industrial

[41] 15A N.C.A.C. 2Q .0705(c).

classification.[42] Facilities that do not exceed TPERs for any sources do not have to file a permit application, even if they would otherwise be subject to a SIC Call.[43] In short, the SIC Call provides an efficient, streamlined way for DAQ to require applications from a potentially large number of facilities that may be emitting hazardous concentrations of toxic air pollutants.

DAQ has used the SIC Call provisions effectively in the past. For example, DAQ issued a SIC Call for decorative chrome platers after conducting a risk assessment for that class of sources.

Removing this useful regulatory tool would not promote any of the criteria in Section 3. First, it would not reduce any burden on facilities. Facilities would still have to provide the same required information – the only difference is that they would provide the information pursuant to a Director's Call rather than a SIC Call. Second, removing the SIC Call option would not increase efficient use of Division resources. In fact, it would do the opposite. The Division would no longer be able to swiftly gather applications from all sources in an industry; instead, it would have to make risk determinations and request applications for each individual facility. Finally, eliminating the SIC Call would not protect human health and could unnecessarily delay implementing health protection standards for numerous facilities within a source category. It would only delay DAQ's implementation of calls for applications that become necessary across an entire industry group.

b. The Director's Call is not an adequate substitute.

DAQ reasons that the Director's Call provides adequate protection in the absence of a SIC Call option. But the Director's Call is less efficient in some situations, as described above, and insufficient for other reasons as well. Under the current regulations, DAQ can issue a SIC Call when it requires applications from many facilities in the same industry, and a Director's Call when it needs more targeted information from a single facility. The Director's Call forces DAQ to issue calls for one facility at a time, and is therefore not a good substitute. The proposed change also curtails the Director's flexibility in requesting permit applications. DAQ can only issue a Director's Call if a facility's emissions present an unacceptable risk to human health based on the AALs or epidemiology studies. There are no such restrictions on DAQ's ability to issue a SIC Call.[44] For example, DAQ could issue a SIC Call based on studies other than epidemiology studies, such as workplace studies, controlled human studies, laboratory animal bioassays or other laboratory studies.[45]

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[42] *Id.*
[43] *Id.*
[44] *Id.*
[45] Secretary's Science Advisory Board on Toxic Air Pollutants, Internal Guidelines for Toxicological Evaluation of Chemicals Released to the Air, http://daq.state.nc.us/toxics/risk/sab/sabtoxra.shtml.

14. DAQ cannot allow facilities subject to MACT to simply comply with maximum feasible control, rather than eliminate their risk to human health. (Option 6)

If a source can show that it would be technically infeasible or cause serious economic hardship to comply with AALs, the source does not have to demonstrate that its emissions will remain below AALs.[46] In this case, the Director shall require the source to apply "maximum feasible control" instead.[47] Sources that could potentially apply for this exemption are sources constructed before May 1, 1990, certain perchloroethylene dry cleaning facilities, and combustion sources[48] permitted before July 10, 2010.[49] Maximum feasible control is defined as the maximum degree of reduction using the best technology that is available taking into account, on a case-by-case basis, human health, energy, environmental, and economic impacts and other costs.[50]

Under DAQ's proposed change, if a source is subject to MACT, then maximum feasible control would be defined as whatever federal MACT requirements apply to the source. DAQ would not make a case-by-case determination to see whether a facility could feasibly implement further controls or emission reductions. But this change would violate Section 1 of SL 2012-91 and create a loophole for sources subject to MACT when protections are needed the most, as described below.

a. If a MACT-regulated facility presents an unacceptable risk by exceeding an AAL, the facility must *eliminate* this risk.

Section 1 exempts all sources subject to MACT from the air toxics program, unless the Director determines that these sources present an "unacceptable risk to human health." A facility that violates an AAL presents an unacceptable risk to human health.[51] If a facility presents an unacceptable risk, the Director must require the facility to submit a permit application that *eliminates* the unacceptable risk.[52] In other words, DAQ cannot simply require the facility to mitigate its violation of an AAL. The statutory requirement to eliminate the risk is absolute, and therefore a MACT-regulated source cannot evade this requirement in cases of technical infeasibility or economic hardship. There is no situation, then, where a MACT-regulated source would be able to apply maximum feasible control rather than comply with AAL requirements. As a result, DAQ's proposal to set maximum feasible control equal to MACT is at best meaningless, and at worst contrary to the plain language of Section 1.

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[46] 15A N.C.A.C. 2Q.0709(b).

[47] *Id.*

[48] Combustion sources include "boilers, space heaters, process heaters, internal combustion engines, and combustion turbines" that burn wood or fossil fuel. 15A N.C.A.C. 2Q. 0703. The term does not include incinerators, waste combustors, kilns, dryers, or direct heat exchange industrial processes. *Id.*

[49] 15A N.C.A.C. 2Q.0709(b).

[50] *Id.* 2Q .0703(13).

[51] *See* discussion above in section 2.

[52] *See* 2012 Sess. Laws 91 §1(a)(5)b.

b. Setting maximum feasible control equal to MACT deprives the public of protection when it is most needed.

Even if DAQ could allow a MACT-regulated source to apply maximum feasible control, it should not allow the source to satisfy the maximum feasible control requirement by complying with its existing MACT requirements. Instead, DAQ should analyze the source critically to ensure that emission controls are as stringent as possible. A source could also switch fuels or raw materials, or change its hours or methods of operations to ensure that it does not pose a threat to the public. DAQ must apply all of these potential options rather than allow a facility to simply comply with MACT requirements. DAQ has already determined that such a source presents a danger to public health, and therefore this is exactly where a rigorous analysis of possible controls is most critical.

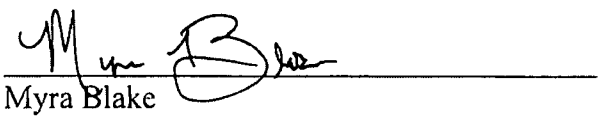
15. DAQ should not use a facility's projected actual emissions to determine whether the facility is subject to and in compliance with the air toxics program. (Option 7)

DAQ proposes to use projected actual emissions to determine whether a facility exceeds TPERs and complies with AALs. But projected actual emissions do not represent the facility's maximum ability to pollute the environment and harm public health. Instead, DAQ should use the permitted emission rate, or in some cases the potential emission rate, to determine whether a facility will contribute to an exceedance of the acceptable ambient level or trigger TPERs. The emission limit contained in a facility's permit is the amount of pollution that a facility is legally allowed to emit. DAQ must therefore use this figure to determine whether a facility presents a risk to public health. If a facility's actual or projected actual emissions are lower than its permit limit, then the permit limit should be lowered to more accurately track these emissions. Without lowering the permit limits, there is no guarantee that a facility will keep its emissions low enough to prevent adverse health effects. In addition, DAQ should not rely on projected actual emissions in lieu of the "actual rate of emissions" as defined in 15A N.C.A.C. 2Q .0703.

Conclusion

DAQ must cease the unlawful implementation of Section 1 of Session Law 2012-91 and implement regulations that safeguard the public. DAQ should not impose any changes under Section 3 at this time because all of the contemplated amendments would fail to maintain protection of human health.

Respectfully submitted,



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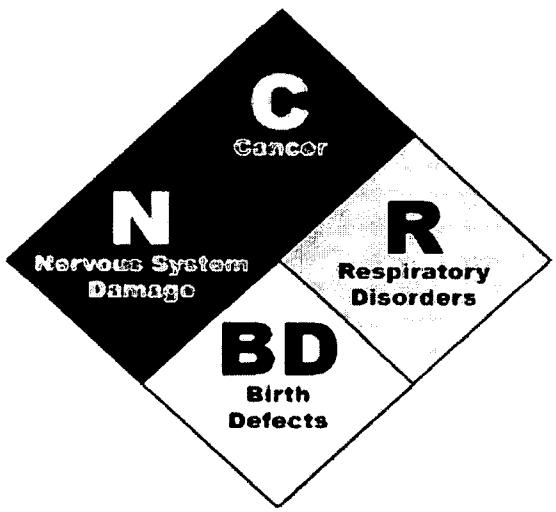
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MB/lap

"First, they came for..."

The North Carolina Legislature's Assault on the Public ©

Blue Ridge Environmental Defense League



Lou Zeller
Therese Vick

January 2012

Introduction

German clergyman Martin Niemöller's famous quote[1] can be found in various versions and is hard to pin down; however his meaning is crystal clear: if we as a society refuse to address oppression of the "other", who will be left to speak for us when we become "other?" This has seldom been clearer than demonstrated by recent private meetings between the North Carolina Division of Air Quality, legislative staff, and industry. Although not all of the documents have been provided, what is clear is that deals are being made outside of public view, in order to benefit certain industries. Research has shown repeatedly that polluting industry locates in areas that are less affluent who have little political power. Thus, it stands to reason that the current deregulatory frenzy at the North Carolina State House will not affect those with uptown addresses. Communities of Color and the poor will continue to bear the costs of stripping regulations designed to protect public health.

[1] http://www.history.ucsb.edu/faculty/marcuse/niem.htm

The History of the North Carolina Air Toxics Program

Louis Zeller, Science Director

In the 1980's North Carolina established regulations for the reduction of toxic air pollutants—chemicals which are irritants, acute or chronic toxicants, or carcinogens. The change was prompted by rising levels of public concern about pollution and health. The NC Environmental Management Commission was empowered by state law and executive order to control toxic air pollution.[2] This authority flows from North Carolina policy which states that "water and air resources of the State belong to the people" and that "Standards of water and air purity shall be designed to protect human health, to prevent injury to plant and animal life, to prevent damage to public and private property, to insure the continued enjoyment of the natural attractions of the State, to encourage the expansion of employment opportunities, to provide a permanent foundation for healthy industrial development and to secure for the people of North Carolina, now and in the future, the beneficial uses of these great natural resources."[3]

In 1985, the NC Division of Environmental Management[4] began to develop a program to reduce toxic air pollutants. At the request of DEM, the NC Academy of Sciences developed a method

[2] NC General Statute § 143-215.107, Air quality standards and classifications

[3] Article 21, Water and Air Resources, Part 1. Organization and Powers Generally; Control of Pollution, § 143-211, Declaration of public policy

[4] The NC Division of Environmental Management was later reorganized to become the NC Department of Environment and Natural Resources with divisions for air quality, water quality, etc.

of establishing acceptable ambient levels of air toxins for the protection of public health. The North Carolina Air Toxics Program evolved from this study. The program's guidelines were based on the categorization of pollutants by toxicity at ambient levels; that is, the actual level in the air we breathe.

The principal requirement of the TAP regulation was that facilities "shall not emit any listed toxic air pollutant in such quantities that may cause or contribute beyond the premises (adjacent property boundary) to any significant ambient concentration that may adversely affect human health."[5] This law included a list of regulated pollutants and specific AALs, or acceptable ambient levels, for periods of 1-hour, 24-hour or annual averaging periods.

The NC Academy of Sciences recommended a combined technology and risk assessment based system for setting each toxic air pollutant level. For known carcinogens, the level was an additional risk of one-in-a-million, for probable carcinogens, one in 100 thousand. For irritants and toxicants, the level was no-observed-effects-levels.

In 1988, North Carolina commissioned a study of the economic impacts of state regulations limiting the emission of toxic air pollutants.[6] The study selected 325 of the 3000 permitted air pollution sources across the state and found that 26% emitted air toxics above trace amounts but that only 3% would experience significant economic impacts if required to meet the new limits.

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[5] NC regulation 15A NCAC 2D.1104, "Toxic Air Pollutant Guidelines." The current language is identical to that in the Radian Corporation report cited in footnote 2.

[6] *Assessment of the Economic Impacts of North Carolina's Proposed Air Toxics Regulation–Final Report*, Radian Corporation, Research Triangle Park, NC, April 27, 1988

The study was conservative and targeted the most likely sources of toxics for this study; in other words, a smaller percentage of emitters and significant economic impacts would be found overall.

In 1990, the Scientific Advisory Board on Toxic Air Pollutants (SAB) was established. The role of the SAB was to evaluate chemical toxins and recommend AALs based on its analysis of scientific, peer-reviewed health studies.

Under pressure from major industry groups, in 1995 the NC General Assembly directed the Environmental Review Commission, a legislative body, to reevaluate the existing TAP program and to eliminate possible overlap or duplication with the 1990 amendments to Title III of the Clean Air Act which regulates hazardous air pollutants.[7] The federal law sets maximum achievable control technology, or MACT, standards for 187 air toxins, a list which includes all but 21 NC TAPs. However, the toxins regulated by North Carolina but unregulated by the Clean Air Act include irritants, toxicants and carcinogens such as nitric acid, mercury vapor and hexachlorodibenzo-p-dioxin. The ERC's Air Toxics Working Group—with representatives from industry, government, law firms and environmental groups—investigated ways to "reduce the regulatory burden permittees face" in meeting the state standards. In short, industry representatives sought to eliminate state regulation of as many TAPs as possible, whether they were regulated by the federal Clean Air Act or not. But some members of the Working Group held firm, stating:

[7] NC General Assembly Studies Act of 1995, Part XVIII, Chapter 52, 1995 Session Laws–House Bill 898

"The AALs implemented by the North Carolina Air Toxics Program are specifically designed and established to protect human health. Federal MACT standards, in contrast, merely implement currently available technology in selected industries emitting large quantities of HAPs nationally. The MACT standards are not based upon a measurement of hazardous air pollutant concentration outside the premises of the permittee's facility, as the North Carolina AALs are."[8]

The Working Group did recommend altering the process by which AALs are evaluated, with DENR referring chemicals for study, the SAB providing risk assessment and the Environmental Management Commission responsible for risk management. Risk assessment is the measurement of hazard presented by a chemical or physical agent. Risk management is the decision making process for reducing risk to a given level. Over the years the original list of 116 TAPs has been reduced to 97, but the program remains largely intact.

North Carolina's health-based air toxics rules and the federal MACT are neither duplicative nor equivalent. The Environmental Protection Agency's method of setting maximum achievable control technologies to reduce toxins does not do what North Carolina's health-based AAL standards do. Federal regulations do not protect public health as well as North Carolina's because a pollution source 100 yards away from a community will have a vastly greater impact than the same pollution source 200 yards, 500 yards or 1000 yards away. For this reason, regulating pollution levels strictly by setting technology standards can never provide the same

[8] *Final Report to the North Carolina Environmental Management Commission*, Air Toxics Working Group, A Study Directed by the Environmental Review Commission Pursuant to the Studies Act of 1995

level of protection as controlling the actual amount of pollution in the air. North Carolina's acceptable ambient levels take into account the distance of smokestacks from property lines and from people's homes.

Fast Forward to 2012: A is for Arsenic

Therese Vick-Community Organizer

"If you poison us, do we not die?"

-Shylock, in William Shakespeare's *The Merchant of Venice*

Arsenic has been much in the news lately, recently found in eggs, chicken and apple juice. A quick search on Google news turns up dozens of results. However, the arsenic story of most concern to North Carolinians, an example of the assault on North Carolina's health-based air toxics regulations is not being told. To see a snapshot of what is ahead for North Carolina's air toxics standards, one has only to look at what has been occurring at the state level regarding this well-known poison and carcinogen; increasingly shown to have alarming endocrine disrupting effects.[9]

On Thursday, October 13 2011, the North Carolina Division of Air Quality (DAQ) published the North Carolina Science Advisory Board's (SAB) "Draft Risk Assessment for Arsenic and Inorganic Arsenic Compounds" to their website for public comment. The SAB recommends increasing North Carolina's current acceptable ambient level[10] (AAL) for arsenic "9-fold."[11] The

[9] Dartmouth Toxic Metals Superfund Research Project: Arsenic as an endocrine disruptor-Project leader Joshua W. Hamilton Ph.D. Senior Scientist

[10] Acceptable Ambient Level (AAL) is the ambient concentration of a toxic pollutant at the property boundary. http://daq.state.nc.us/rules/rules/Q0709.pdf

[11] Risk Assessment for Arsenic: Draft for Public Comment

North Carolina Science Advisory Board (SAB) on Toxic air Pollutants "was chartered by the Secretary of the Department of Environment and Natural Resources to make recommendations to the Environmental Management Commission (EMC) to ***minimize the potential health hazards resulting from toxic air pollution*** [emphasis added]." [12] The charter itself defines this responsibility further:

Section II. Functions

> *(2) The Board shall have the following duties:*
>
> > *(e) To recommend airborne concentrations of toxic air pollutants in a "range of risks" to the Director of the Division of Air Quality and to the Environmental Management Commission (EMC) for regulation that will* ***minimize adverse health responses in the exposed citizenry*** *and to advise the EMC of the scientific basis of these recommendations* [emphasis added]...[13]

The SAB is comprised of six members, all with toxicological, epidemiological and/or medical backgrounds. The current members are:

Thomas B. Starr, Ph.D. Chair

Woodhall Stopford, MD, MSPH

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[12] Science Advisory Board on Toxic Air Pollutants

[13] Science Advisory Board Charter

Elaina M. Kenyon, Ph.D., DABT

Ivan Rusyn, MD, Ph.D.

Helen Cunny, Ph.D., DABT

David Dorman, DVM, Ph.D., DABVT, DABT

BREDL submitted comments opposing the SAB's recommendation pointing out arsenic's toxic effects as well as asking the question, "What industry (or industries) are behind the impetus" (to change the acceptable ambient level of arsenic).[14] This recommendation was scheduled to be voted on by the Board November 30, 2011 at the 161st meeting, which was held by teleconference. Because of BREDL comments, it was decided to postpone the decision until the January 2012 meeting. During the public comment portion of the teleconference BREDL staff person Therese Vick asked where this request initially came from. Dr. Starr answered that the request had come from the North Carolina Division of Air Quality. It was explained that certain areas in North Carolina "routinely exceed the current AAL for arsenic."[15,16] The "2009 Annual Air Toxics Report" states that: "...median arsenic concentrations measured across the state in 2009 exceed the AAL for arsenic by 3–4 times." [17]

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[14] BREDL Comments Arsenic AAL

[15] From Therese Vick's notes of the 161st meeting of the Director's Science Advisory Board, November 30, 2011. The minutes from the meeting have not yet been published.

[16] One Hundred Fifty-Fourth Meeting of the Science Advisory Board on Toxic Air Pollutants-Proceedings of the October 27, 2010 Teleconference

[17] "2009 Annual Air Toxics Report" Division of Air Quality Toxics Protection Branch October 2010

This admission was shocking—DAQ was acknowledging that rather than investigating ways to bring these areas into compliance with the current, more protective standard, they were *proposing to change the standard instead.* Even members of the SAB pointed out that the lower bound of the proposed AAL was "coincidentally close to the measured concentrations at monitoring sites around NC."[18]

"Even the Cat's in on it!"

-Mortimer Brewster *Arsenic and Old Lace*

Because of these troubling admissions, BREDL staffer Therese Vick began investigating the history behind the reevaluation. After a review of DAQ documents and several web searches, it became clear that the impetus behind the requested change was likely coming from influences outside of NC DENR. For example, in the "PSD Preliminary Review – modification 300 construction/operation permit (Draft Revision 8, July 2011 – Assistant Secretary)" for Carolinas Cement Company LLC (aka Titan Cement) proposed to be located in Castle Hayne, North Carolina, the modeled arsenic levels are at 30% of the AAL— according to the company's own modeling and after pollution control. The amount of arsenic potentially emitted into the air of the surrounding community is significant and dangerous. In the Draft Revision, DAQ attempts to diminish the potential concern over these levels by saying "Finally, the Scientific[19] Advisory

[18] Comment by Dr. Ivan Rusyn, SAB member, One hundred Sixtieth Meeting of the Science Advisory Board on Toxic Air Pollutants-Proceedings of the October 11, 2011 Teleconference

[19] Historical Note: The "Science Advisory Board' was known as "The Scientific Advisory Board" prior to 2004.

Board is considering adjusting the Arsenic AAL."[20] As troubling as 30% is, it pales in comparison to the almost 48% of the AAL modeled in an earlier draft.[21]

Industry is certainly following this proposed change very closely, and their relationship with the DAQ is inappropriate at best. Industry admits that sources are having problems meeting the arsenic AAL. Trinity Consultants, a North Carolina environmental consulting firm posted this on their website:

> "For a variety of emission source(s), particularly combustion sources, the arsenic AAL has often been problematic in TAP air dispersion modeling. ***In some cases, affected facilities have had to improve pollution control systems, increase stack heights or place operational limits to demonstrate compliance with the arsenic AA(L)***[emphasis added]."[22]

At the November 2010 meeting of the SAB, Brendan Davey, DAQ staff from the Asheville Regional Office, remarked that "there are a few combustion sources in the Asheville region that are having difficulty complying with the AAL for arsenic given current regulations",[23] and that

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[20] North Carolina Division of Air Quality: PSD Preliminary Review Draft Revision 8 July 2011

[21] "The air toxics modeling indicated that arsenic was at 47.83% of the Significant Ambient Air Concentration (SAAC) at some locations along the facility property line." North Carolina Division of Air Quality: PSD Preliminary Review Draft Revision 9 September 2009

[22] Trinity Consultants News: Increased AAL for Arsenic

[23] In a January 5, 2012 email to Therese Vick, Brendan Davey listed these three companies as exceeding thee arsenic AAL: **Blue Ridge Paper in Canton, Jackson Paper Manufacturing Company in Silva, and Zickgraf Hardwood Flooring Company in Franklin**

"the control technology for these emissions is insufficient..."[24]Mr. Davey was speaking of Blue Ridge Paper in Canton, Jackson Paper Manufacturing Company in Silva, and Zickgraf Hardwood Flooring Company in Franklin, NC (See footnote 23). At a later meeting, SAB member Dr. Woodhall Stopford ask why the arsenic AAL was being reviewed. He was told that "DAQ needs to have the arsenic AAL reviewed because ambient concentrations are above the AAL across the state and the DAQ has been tasked by the EMC (Environmental Management Commission) to do a combustion source evaluation because ***boilers have been exempt from Toxics regulations.***"[25] Operating facilities are not the only companies which have an interest in higher arsenic AAL's. The North Carolina Legislature requires that power companies generate a certain percentage of electricity from poultry manure. [26] Fibrowatt, a company that has been attempting to locate in Sampson County, and Poultry Power, who has proposed a facility in Montgomery County both stand to benefit from a higher limit of arsenic emissions.

The Division of Air Quality performed a "Toxics Emissions Evaluation from Poultry/Turkey Litter."[27] The modeling DAQ evaluated showed that:

> *"The model results provide that the arsenic emissions are the limiting pollutant with*

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[24] One Hundred Fifty-Fifth Meeting of the Science Advisory Board on Toxic Air Pollutants- Proceedings of the November 17, 2010 Teleconference

[25] Dr. Reginald Jordan, DAQ Toxics Protection Branch One Hundred Fifty-Sixth Meeting of the Science Advisory Board on Toxic Air Pollutants- Proceedings of the January 26, 2011 Teleconference

[26] "NC poultry litter-fired generating plants under consideration"

[27] Agenda Item 13 March 2009

NC Toxics based on the estimated emissions. ***For the given plant characteristics, the arsenic emissions resulted in an ambient concentration that is 277% of the AAL*** [emphasis added]."

"Look, you can't do things like that! Now, I don't know how I can explain this to you. But, it's not only against the law, its wrong!"

-Mortimer Brewster *Arsenic and Old Lace*

At the November 16, 2011 meeting of the Air Quality Committee of the EMC, DAQ Director Sheila Holman remarked that directed by the Chairs of the Environmental Review Commission, DAQ was meeting with industry looking at the air toxics regulations. The revolving door must be spinning wildly. Meeting attendees included representatives from Duke Energy and the Manufacturers and Chemical Industry Council of North Carolina (MCIC). Former NC DENR employees; George Everett, currently with Duke Power (formerly with MCIC), was the Director of the North Carolina Division of Environmental Management, and Preston Howard, currently with MCIC, was the Director of the Division of Water Quality and a DENR employee for over 20 years.[28] Legislative staff facilitates these meetings. By statute, the meetings can be private, and some documents held confidential. However, information obtained by BREDL tells the tale. On October 26, 2011, DAQ Director Sheila Holman made note of this question:

"How many sources would have exceeded the AAL's- w/new As AAL?"[29]

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[28] Preston Howard ,George Everett

[29] Notes provided to BREDL by the North Carolina Division of Air Quality

While the question is not attributed to any one person, it is indicative of the tone throughout meeting notes and emails; industry is rewriting the rules.

"I couldn't do that. Could you do that? Why can they do it? Who are those guys?"

-Butch Cassidy to the Sundance Kid

Science Advisory Board members are charged with protecting the public health of the people of North Carolina. However, conflicts of interest can occur, and some members of the current Board have their own skeletons. Dr. Thomas Starr is the NC SAB chairman. Dr. Starr has been a paid consultant for Philip Morris[30,31], a constant critic of the US Environmental Protection Agency's dioxin reassessment[32,33,34,35,36], and, as recently as 2010, a consultant to the American

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[30] Health Effects of Exposure to Environmental Tobacco Smoke Appendix B Summary of Public Comments and Responses on the February 1997 Draft- (California) Office of Environmental Health Hazard Assessment

[31] Legacy Tobacco Documents Library- Philip Morris Glossary of Names

[32] Letter to Dr. Kenneth Olden, Director, National Institute for Environmental Health Sciences, February 12, 1999

[33] Bo Walhjalt-"A Scientific Journal with Industrial Bias as its Specialty, December 2002"

[34] Thomas B. Starr Ph.D."Significant Shortcomings of the U.S. Environmental Protection Agency's Latest Draft Risk Characterization for Dioxin-Like Compounds" June 2001

[35] "Scientific Debate Continues on Dioxin Risk"

[36] External Peer Review of Recommended Toxicity Equivalency Factors (TEF's) for Human Health Risk Assessments of Dioxin and Dioxin-Like Compounds November 4, 2009

Forest and Paper Association.[37] The American Forest and Paper Association opposes US EPA's boiler regulations. [38] Dr. Starr has also opposed attempts to regulate particulate matter (PM) on behalf of the American Petroleum Institute in testimony before the United States Senate. Dr. Starr ended his testimony with this statement: "Implementation of the new standards could well make things worse rather than better." [39] Dr. Starr is not the only SAB member with interesting connections. Dr. Woodhall Stopford was retained by the Corn Refiners Association to examine claims that mercury was found in products that contained high fructose corn syrup. Dr. Stopford found no evidence of mercury.[40] Dr. Stopford's connection to the CRA was not disclosed at the time his report was released.[41]

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[37] American Forest and Paper Association re: EPA's Reanalysis of Key Issues Related to Dioxin Toxicity and Response to NAS Comments July 7, 2010

[38] Conference call January 20, 2011 earthjustice.org

[39] Testimony of Thomas B Starr, Ph.D. Principal, ENVIRON Corporation, Raleigh NC before the Senate Subcommittee on Clean Air, Wetlands, Private Property, and Nuclear Safety

[40] "Assessment of Test Results for Mercury in High Fructose Corn Syrup"

[41] "In These Times, January 2011"

"Everything's Bigger in Texas"

- Unknown

To support their rationale, the NC SAB is relying heavily on the studies used in a draft report evaluating arsenic health risk by the Texas Commission on Environmental Quality (TCEQ). SAB Chair Dr. Thomas Starr made the recommendation.[42] The TCEQ has come under fire for refusing to allow climate change and human health effects language in a report on Galveston Bay,[43] is in a "to the death" battle with the US Environmental Protection Agency (EPA) over the State Implementation Plan (SIP), [44] and Texas facilities are high on EPA's national "Watch List" of high-priority polluters whose violations are not being enforced properly by state regulatory agencies.[45]

A controversial figure, TCEQ's chief toxicologist, Dr. Michael Honeycutt is listed as an author on the arsenic report.[46] Dr. Honeycutt has long been a critic of the US EPA, not because the federal agency isn't strict enough; indeed, Dr. Honeycutt believes just the opposite- that federal

[42] One Hundred Fifty-Seventh Meeting of the Science Advisory Board on Toxic Air Pollutants- Proceedings of the March 30, 2011 Teleconference

[43] Censored scientist John Anderson on how to restore sound policy-making to Texas and (maybe save the Texas coast

[44] Correspondence between EPA and TCEQ regarding Texas Air Permitting Program

[45] "Poisoned Places: Toxic Air, Neglected Communities"

[46] "TCEQ-At it Again"

standards are too stringent. Two glaring examples: Honeycutt testified against tougher ozone and particulate matter standards in 2011,[47] and discounts EPA's concern about the developmental effects of mercury, stating that, "On the contrary, the Japanese population consumes ten times more fish than the US population but only shows positive outcomes; they have lower rates of coronary heart disease and high IQ scores." [48]

"Arsenic is edible. Only once."

-Unknown

North Carolina's air toxics program is in danger, and forces outside of the public interest are pushing the NC Division of Air Quality to "decriminalize" arsenic poisoning. Communities that will be living with increased toxic pollution have not been given a seat at the table where their rights to clean air are being cut away. In order to bring industry into compliance and protect corporate profits, the Science Advisory Board was implicitly tasked with finding justification for a decision already made—to increase the acceptable ambient level for arsenic. We can no longer stomach this manipulation of science to benefit corporate greed.

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[47] "Texas regulator critical of EPA"

[48] Comments by Michael Honeycutt, Ph.D., with the Texas Commission on Environmental Quality Regarding the Primary National Ambient Air Standards for Ozone and PM, and the Utility Mact

MECKLENBURG COUNTY
Land Use and Environmental Services Agency
-AIR QUALITY-

October 9, 2012

Sheila Holman, Director
Air Quality Division
North Carolina Department of Environment and Natural Resources
1641 Mail Service Center
Raleigh, NC 27699-1641

Re: Options for Revision of the NC Air Toxics Regulations
Mecklenburg County Air Quality Comments

Dear Ms. Holman:

Mecklenburg County Air Quality (MCAQ) appreciates the opportunity to participate in the process of reviewing the NC Air Toxics Regulations pursuant to Session Law 2012-91. As a certified local air pollution control program, MCAQ serves the businesses responsible for compliance with these regulations as well as the citizens of Mecklenburg County whom they are designed to protect.

Session Law 2012-91 states that NCDAQ shall review toxic air pollutant rules adopted pursuant to G.S. 143-215.107(a) and the implementation of those rules to determine whether changes could be made to the rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining protection of public health.

Our agency appreciates the importance of reducing unnecessary regulatory burden and using staff resources efficiently. Our primary responsibility is enforcement of the Clean Air Act and protection of public health. To this end, MCAQ asserts that the NC Air Toxics Regulations are a critical part of the protection of public health and should only be revised in such a manner as to preserve this most important of the three factors being considered.

Mecklenburg County Air Quality (MCAQ) has reviewed the options for revision of the NC Air Toxics Regulations presented by the North Carolina Division of Air Quality (NCDAQ) at the September 25, 2012 stakeholders meeting and provides the comments below for consideration.

Summary of MCAQ Comments

1. MCAQ is supportive of the following proposed options which we believe will meet intent of the required regulatory review by reducing unnecessary regulatory burden, increasing efficient use of staff resources and maintaining protection of public health.
    - Re-evaluate toxic permitting emission rates (TPERs)
    - Exempt emergency engines
    - Exempt natural gas and propane combustion units
    - Register rather than permit sources less than certain emissions thresholds

- Do not retain SIC call

2. MCAQ does not support the option that would conclude that compliance with Maximum Achievable Control Technology requirements of 40 CFR Part 63- "National Emission Standards for Hazardous Air Pollutants for Source Categories" automatically constitutes Maximum Feasible Control, thereby exempting the source from NC Air Toxics Regulations. It is MCAQ's opinion that this does not meet the requirement in Session Law 2012-91 to maintain protection of public health.

3. MCAQ believes that evaluation of projected actual emissions (Option7) is the current prescribed method for evaluating new sources per 15A NCAC 02Q.0703 (1) (b) - Definition of Actual Rate of Emissions. Therefore, this option does not appear to constitute a change in current requirements.

MCAQ Analysis by Option
(includes comments and questions for consideration)

Option 1 – Re-evaluate toxic permitting emissions rates (TPERs):

- MCAQ believes that this option has the potential to most effectively address the three requirements of Session Law 2012-91. It is likely, however, to be the most time consuming as well.
- This option is based on the assumption that currently, for many facilities whose actual emissions exceed TPER, modeled actual emissions result in offsite concentrations significantly below the Allowable Ambient Limit (AAL).
- The simplicity of the option in practice makes it appealing, but there are several questions that make it difficult to judge at this time:
    - How many facilities fall into the category as described above (20% of those that exceed TPER, 50%, 80%)?
    - How does that number change with the degree of the exceedance?
    - What fraction of the AAL would the state target? Would/should it vary with toxic or toxic category?
    - Are there facilities/source types that are the exact opposite, small exceedances of TPER represent a significant fraction of the AAL?
    - Since the toxics limits (TPERs/AALs) are specific to a chemical, does facility/source type make a difference in whether an exceedance of TPER is significant? For example, chromium may be emitted by a steel mill, plating shop or concrete plan, toluene by a chemical manufacturing plant, coating process, or a coating manufacturer; does the same degree of TPER exceedance have the same impact at each of these.

Options 2 and Option 3 – Exempt natural gas and propane fired combustion units and emergency generators:

- These options are in line with the way these units are treated by the EPA and therefore would avoid the situation where the EPA exempts a source from toxics and the state does not. Additionally, toxics emissions from these sources are typically small, and in many cases not a significant part of a facility's total toxics emissions (though probably need to determine impact at facilities whose emission sources are primarily combustion sources such as institutions, e.g. universities and hospitals). MCAQ would likely support these options.
- Would probably want to consider threshold limitations for exemption (see option 4 below)
- The definition of a natural gas fired boiler should be consistent between the federal and state toxics rules. If a facility claims a duel-fired boiler (e.g. natural gas and fuel oil#2) to be a natural

gas boiler under the federal standard (only to fire fuel oil in times of gas curtailment, gas supply emergencies, or periodic testing), than the state should also define this unit as a natural gas boiler for toxics.

Option 4 – Register rather than permit sources less than certain emissions thresholds:

- This option would put in place 02Q .0102(c)(2) type exemptions for toxics (i.e. exempt because of size or production rate). This may be the most resource intensive of all the options for DAQ to put into place initially but, also, an effective way to achieve the three expressed goals of the review overall. MCAQ would likely support this option depending on the implementation.
- MCAQ would strongly recommend that, in addition to toxic emission rate, the operating characteristics of each source type, relative to the conservative modeling parameters use in determining the TPERs, be considered in the analysis for setting thresholds. For example, a higher than ambient stack temperatures of combustion sources, a higher than 0.01 m/s exit velocity for source types that typically have a forced air (fan/blower) collection/control system. In this way many of the benefits to be gained from Option 1 above could also be incorporated into the analysis.

Option 5 – Do not retain SIC call: The Directors Call provision provides similar powers/capabilities to those under SIC call provision and eliminating it would simplify the toxics rule language, therefore MCAQ would support this provision.

Option 6 – Maximum Feasible Control (MFC) = Maximum Achievable Control (MACT)

- Currently under 02Q.079 – "Demonstrations" the Director can require "Maximum Feasible Control" in lieu of submission of a compliant modeling demonstration based upon the facility demonstrating technical infeasibility or serious economic hardship.

  This option is currently available to any source constructed before May 1, 1990, or a perchloroethylene dry cleaning facility subject to a GACT standard under 40 CFR 63.320 through 63.325, or a combustion source as defined in Rule .0703 of this Section permitted before July 10, 2010, who cannot supply a demonstration *(i.e. compliant model)* described in Paragraph (a) of this Rule" [02Q .0709 DEMONSTRATIONS (b)].

  MCAQ recommends modifying the regulation to allow any facility to demonstrate technical infeasibility or serious economic hardship rather than the option proposed by NCDAQ. MCAQ does not support a broad application of the term "Maximum Feasible Control" to include all sources subject to a federal MCAT or GACT. MCAQ believes this is better left to be decided on a case by case basis.

Option 7 – Evaluate projected actual emissions

- If this is to be applied in the same way that projected actual emissions (PAE) are used in PSD, a source typically required to evaluate toxic emissions at potential, that is below TPER at PAE but above at potential, would avoid modeling, but would have to keep records to demonstrate they did not exceed the PAE in actual operation (or demonstrate each time they did exceed PAE they did not exceed any compliance limit), i.e. the PAE would become a permit limit. The facility could request a higher emission limit that still keeps them under TPER, i.e. a TPER avoidance limit, which gives them some breathing room and still avoids modeling. But a facility that exceeds TPER at potential now can request a TPER avoidance limit and avoid modeling, so there appears to be little benefit from this scenario.
- If a facility that is below TPER at PAE is to be treated the same as if they were below TPER at potential (i.e. no requirements at all for toxics) the potential for a significant and ongoing

exceedance of TPER, and therefore potential significant impact to public health with no regulatory oversight, exists. For that reason MCAQ would likely not support this scenario.

Conclusion

MCAQ believes that as the Director of the Division of Air Quality you value the input from local agencies and we look forward to continued involvement in this process. Several of the options, particularly the review of TPERS and addition of specific exemptions could streamline and improve upon the existing regulations by applying knowledge and expertise gained through years of implementation and enforcement.

I urge you to continue to place an emphasis on protection of public health throughout your review of the NC Air Toxics Regulations.

Sincerely,



Don R. Willard
Director, Mecklenburg County Air Quality



JACKSON PAPER
MANUFACTURING

October 9, 2012

VIA ELECTRONIC MAIL
Michael Abraczinskas
Deputy Director
North Carolina Division of Air Quality
1641 Mail Service Center
Raleigh, NC 27699-1641

Re: Review of Air Toxics Program

Dear Mr. Abraczinskas:

On behalf of Jackson Paper Manufacturing Company, I am submitting these comments regarding the ongoing review of the North Carolina air toxics program by the Division of Air Quality. Jackson Paper is located in Sylva, North Carolina and manufactures roll stock medium grade paper from recycled corrugated containers. The mill uses 100 percent recycled paper as its feed stock. The product of the Jackson Paper mill is typically used as the fluted corrugated medium for cardboard boxes.

Jackson Paper plays a significant role in contributing to the local economy in Jackson County by employing approximately 114 employees. In addition, the operation of the mill demonstrates Jackson Paper's commitment to protection of the environment and the sustainable use of resources. Its boiler produces energy by combusting renewable wood fuel that has been generated by other industrial facilities. Finally, all water used at Jackson Paper (with the exception of potable water) is recycled and reused, resulting in zero discharge from our facility.

Despite all of its environmentally beneficial business practices, Jackson Paper has been subjected to a Director's Call under the air toxics program based on arsenic emissions from the wood-fired boiler. The Director's Call has been placed on hold pending the ongoing review of the Science Advisory Board's recommendation to change the current acceptable ambient level (AAL) for arsenic to 2.1×10^{-6} mg/m^3.

Jackson Paper strongly urges DAQ to proceed with a rulemaking to adopt the AAL proposed by the SAB. While we understand that the rulemaking process is already underway, we believe that this issue should be included in DAQ's report to the Environmental Review Commission pursuant to Session Law 2012-91. The SAB has already conducted a thorough scientific review of the AAL. Their recommendation should be adopted as soon as possible.

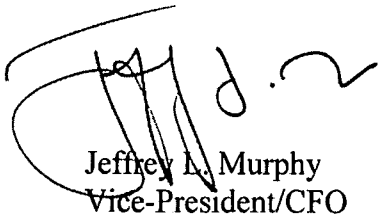
NORTH CAROLINA'S LARGEST RECYCLED PAPER PRODUCER
152 West Main Street ⊙ PO Box 667 ⊙ Sylva, NC 28779 TEL (828) 586-5534 FAX (828) 586-6755

We also support DAQ's efforts to identify additional areas where improvements to the program can be made to the air toxics program, including the following seven recommendations that were discussed at recent stakeholder meeting on September 25:

- Re-evaluate toxic permitting emission rates (TPERs)
- Exempt natural gas and propane combustion units
- Exempt emergency engines
- Allow registration (rather than permitting) of sources whose emissions are less than certain thresholds
- Remove SIC call provision
- Define Maximum Feasible Control as equivalent to Maximum Achievable Control
- Evaluate air toxics impacts based on projected actual emissions

Thank you for your attention to this important issue. If you have any questions regarding these comments, please contact me at (828) 586-5534 or jmurphy@jacksonpaper.net.

Sincerely,



Jeffrey L. Murphy
Vice-President/CFO

October 9, 2012

VIA ELECTRONIC MAIL
Mr. Michael Abraczinskas
Deputy Director
North Carolina Division of Air Quality
1641 Mail Service Center
Raleigh, North Carolina 27699-1641

Re: Review of Air Toxics Program

Dear Mr. Abraczinskas:

On behalf of the American Home Furnishings Alliance (AHFA), I am submitting these comments regarding the ongoing review of the North Carolina air toxics program by the Division of Air Quality (DAQ). AHFA is the world's largest and most influential trade organization serving the home furnishings industry. AHFA's member companies operate several wood furniture manufacturing facilities in North Carolina. These facilities employ approximately 33,000 people.

AHFA has been a strong advocate for reform of the air toxics program for many years. In particular, we were a key stakeholder during the recent drafting and adoption of Session Law 2012-91. We support DAQ's efforts to identify additional areas where improvements to the program can be made, including the following seven recommendations that were discussed at recent stakeholder meeting on September 25:

- Re-evaluate toxic permitting emission rates (TPERs)
- Exempt natural gas and propane combustion units
- Exempt emergency engines
- Allow registration (rather than permitting) of sources whose emissions are less than certain thresholds
- Remove SIC call provision
- Define Maximum Feasible Control as equivalent to Maximum Achievable Control
- Evaluate air toxics impacts based on projected actual emissions

In addition to the issues listed above, AHFA has identified another item that should be included in DAQ's review. In 15A NCAC 2Q .0703, the air toxics rules define "unadulterated wood" in a manner that creates an unnecessary and erroneous distinction between various wood fuels. The current definition is:

> "Unadulterated wood" means wood that is not painted, varnished, stained, oiled, waxed, or otherwise coated or treated with any chemical. Plywood, particle board, and resinated wood are not unadulterated wood.

AHFA believes that this definition is no longer needed in the air toxics rules and should be deleted. Other than the definitions rule, the term "unadulterated wood" appears in only two other provisions: in the definition of "combustion sources" in 15A NCAC 2Q .0703, and in the SIC Call provision in 15A NCAC 2Q .0705(c). It appears that the original purpose of those provisions is no longer relevant and the use of the term "unadulterated wood" in those contexts is no longer necessary. Therefore, those two references to "unadulterated wood" should be eliminated as well. Removal of these superfluous terms would reduce the uncertainty in the air toxics rules. It would also end the obsolete regulatory stigma against certain high-quality renewable biomass fuels such as resinated wood used in the furniture industry.

Alternatively, if the term "unadulterated wood" cannot be removed from the air toxics rules, then the definition should be revised to make it consistent with the manner in which EPA has classified wood fuel. In the major source Boiler MACT rule, EPA has established the following definition that encompasses solid wood fuel:

> Biomass or bio-based solid fuel means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue; wood products (*e.g.*, trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (*e.g.*, almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste.

This definition is found at 40 CFR 63.7575, as promulgated in the final Boiler MACT rule at 76 Fed. Reg. 15608 (March 21, 2011). An identical definition is found in EPA's reconsideration Proposed Rule, 76 Fed. Reg. 80596 (December 23, 2011).

In its definition of biomass, EPA has developed a regulatory approach that generally parallels the DAQ's distinction between adulterated and unadulterated wood. However, EPA's approach to classification of wood fuel is based on its distinction between wood that is a non-waste fuel (the combustion of which occurs in a boiler) and a solid waste (the combustion of which is incineration). Under federal law, the classification of any combusted material (including wood) must be determined by applying the methodology in EPA's rule entitled "Identification of Non-Hazardous Secondary Materials That Are Solid Waste" (76 Fed. Reg. 15456; March 21, 2011). The NHSM rule, which is codified at 40 CFR Part 241, establishes a detailed protocol for evaluating each fuel to determine if it is a solid waste. The classification of

the fuel dictates the relevant emissions category for the combustion unit as a boiler or incinerator.

The NHSM rule provides for a rigorous review of combusted materials that essentially segregates fuels based on their use and physical/chemical characteristics. For example, resinated wood used in the furniture industry must meet the legitimacy criteria in 40 CFR 241.3(d). Among other things, a comparative constituent analysis of resinated wood must be performed in accordance with 40 CFR 241.3(d)(1)(iii):

> The non-hazardous secondary material must contain contaminants at levels comparable in concentration to or lower than those in traditional fuels which the combustion unit is designed to burn. Such comparison is to be based on a direct comparison of the contaminant levels in the nonhazardous secondary material to the traditional fuel itself.

Thus, the scrutiny required in the NHSM analysis provides abundant assurance that non-waste fuels will not result in any increased risk to human health or the environment when compared to other fuels such as fossil fuels or virgin biomass. In our view, this is the same type of classification that the definition of "unadulterated wood" is intended to accomplish.

Therefore, AHFA believes that the definition of "unadulterated wood" in 15A NCAC 2Q .0703 should be revised to make it consistent with EPA's definition of biomass. We propose the following text for the new definition:

> "Unadulterated wood" means any wood-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue and wood products (*e.g.,* trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings).

By adopting this new definition, DAQ would place the air toxics program in alignment with the overlapping federal MACT/GACT requirements. In addition, it would eliminate any unfavorable treatment at the State level of resinated wood and other wood products that can satisfy the rigorous NHSM legitimacy criteria. It is worth noting that EPA has issued a proposed amendment to the NHSM rule in which it has categorically determined that resinated wood is not a solid waste when combusted. 76 Fed. Reg. 80452 (December 23, 2011).

AHFA further believes that our proposed changes would meet the three criteria established in Section 3 of Session Law 2012-91. The proposed amendment would reduce unnecessary regulatory burden by removing uncertainty and promoting further alignment with the overarching federal regulatory program. It would increase the efficient use of DAQ resources by allowing DAQ to defer to the federal regulatory program, rather than continuing to implement its own duplicative program. And, finally, it would maintain protection of public

health by ensuring that the stringent legitimacy criteria in the federal rule would be applied to each fuel.

Thank you for your attention to this important matter. If you have any questions regarding these comments, please contact me at (336) 884-5000, ext. 1017 or bperdue@ahfa.us.

Sincerely,



Bill Perdue
Vice President of Regulatory Affairs

From: Jody Higgins <jody@yanceypaper.com>
Date: Friday, September 7, 2012 2:07 PM
To: Diana Kees <diana.kees@ncdenr.gov>
Subject: Re: Division of Air Quality Conducts Review of State Air Toxics Rules

I am sitting here inside my office in Burnsville breathing the fumes from the asphalt plant just outside the town limits that DENR Air Quality permitted. Even with the windows shut and air conditioning on, the fumes are burning my nose. I went to the doctor yesterday and for the second time since May with a pneumonia diagnosis in conjunction with an ongoing sinus infection that doesn't seem to go away with treatment. At my house up the street, if I leave my windows open (and I don't have air conditioning), I can't breathe at night because the plant is operating -- not to mention the noise that sounds like a jet engine from mid-evening to around 3 a.m. If I leave my windows open during the day, I have to change the sheets at night because they smell like asphalt. The Rogers Group applied to use shredded tires in the mixture but people had to drive to Asheville to comment on that, as if it would make a difference. I assume that has already been permitted. The smell seems heavier and stronger, and the smoke from the stack thicker. DENR is already short-staffed with cuts to the agency and has little authority it seems to do anything except look out for the interests of the corporate polluters. It makes perfect sense to get rid of regulations for these over-regulated asphalt plants and others that spew toxic air pollutants into our communities and destroy our health, property values and ability to live a peaceful life in pursuit of happiness as we are supposed to be guaranteed by our founding forefathers. That's my comment.

Jody Higgins, editor
Yancey Times Journal
P.O. Box 280
Burnsville, NC 28714

From: Laura Kranchalk [lkranchalk@caninesforservice.org]
Sent: Wednesday, September 12, 2012 8:22 AM
To: SVC_DENR.DAQ.publiccomments
Subject: Please give us clean air

I am writing to request that you do not ease the "regulatory burden" on industry by rolling back portions of the Air Toxics Program. I live in New Hanover County within 10 miles of the proposed Titan facility and I fear for my family's health and quality of life. You are supposed to protect the citizens. The evidence is clear. Do your job.

--
Sincerely,
Laura Kranchalk
Office Manager | Canines for Service | P.O. Box 12643 | Wilmington, NC 28405
Phone: 910-362-8181 | www.caninesforservice.org | www.walkforthosewhocant.org

From: Rachel Cole [relizabethcole@aol.com]
Sent: Wednesday, September 12, 2012 10:54 AM
To: [redacted]SVC_DENR.DAQ.publiccomments
Subject: air quality rollback?

Dear Committee Members,

I am writing to express my concern about your upcoming review of state regulations of air toxics. I hope that you will keep regulations for toxics not covered by federal regulations strong. As a mother raising young children here air quality is very important to me.

Thank you for your time.

Sincerely,

Rachel Cole

509 Larchmont Dr.
Wilmington, NC 28403

From: Ellen Hunter [ellenelizhunter@att.net]
Sent: Wednesday, September 12, 2012 8:11 PM
To: SVC_DENR.DAQ.publiccomments
Subject: DO NOT LIFT RESTRICTIONS

DO NOT roll back any of the NC Air Toxics Program.

I am a resident of New Hanover County. Our county is dependent on income from tourists and from the film industry. We are about to get a Super VA Center. We are not dependent on the manufacture of cement which we already have plenty of.

If you allow our air to become polluted with cement dust and particulates you will choke off not only our breath but our livelihood and our income!

What family will want to bring their children to a place with polluted air? What big star will want to come here to make a movie? And why would the VA want to build a Super VA Center for sick veterans to breath in polluted air?

We DO NOT NEED need the handful of jobs promised by Titan Cement. We DO NEED the boost to our local businesses that tourism and movie making bring.

THINK! THINK! THINK! of the damage to our economy and our lives that you are about to do! This is not an American Company. It is a Greek Company. The economy of Greece is in trouble. If Titan is such a boon to the economy let them build a plant in Greece and help their own country.

Ellen Hunter
Wilmington NC

From: Cindi B. Hamilton [cindib@embarqmail.com]
Sent: Saturday, September 15, 2012 7:23 PM
To: [redacted]SVC_DENR.DAQ.publiccomments
Subject: air quality review

I would like tougher regulations on open burning. I find it ludicrous that in today's time, the government allows people to burn. We are suppose to be a "greener" world and do everything we can to "clean up the air" and the environment. In one swift afternoon with people burning, all our efforts are wasted.

I have addressed these concerns numerous times with our county commissioners (Carteret County) and they just ignore the issue. I even had a proposal for a self-sustaining yard pick-up program and the commissioners still ignored it. They allow people in subdivisions (neighborhoods in the ETJ area) to burn anytime. I had to sell my new house and move due to the noxious and offensive smell that burning creates.

That is my recommendation that the Division of Air Quality tries to tackle.

Thank you.
Cindi B. Hamilton
Mo[redacted]ead City, NC
cindib@embarqmail.com
252-240-0751

From: DiamondtelDeb@aol.com
Sent: Tuesday, September 25, 2012 7:44 PM
To: SVC_DENR.DAQ.publiccomments
Subject: Re: Reducing air quality standards would be a crime!

I understand I have until Oct 7 to comment. I have it from the mouth of a DENR representative about a year ago that the air pollution and Code Orange Days from a combination of coal burning and automobiles blows mostly from west to east. He was on Charlotte Talks and confirmed what my husband KNOWS from hanging a string on our back porch here in farm country Wadesboro - when the wind is from Charlotte, he WILL have a "bad air day". My husband is missing a lung from cancer about 10 years ago and we are very careful.

Also, your expert mentioned that children who are affected will NEVER have the lung capacity of those who are not. Two of my precious grandchildren living in Marshville have asthma - the fifteen year old who struggles to play sports and heartbreakingly, the baby, Isaac (his dad nicknamed him "I-sick") struggles just to breathe!

How can you even think of reducing air quality standards, especially when this mostly Republican NC House and Senate have overridden Gov Perdue's veto of the extremely dirty practice of fracking for natural gas. Not only does it poison the water and farmland, animals and people, it emits horrendous amounts of gas into the air and requires 50 diesel trucks per frack well per day to import millions of gallons of hazardous chemicals to inject into our wells and water that will be forever polluted.

Did you know that the Republicans under Cheney and Bush Jr exempted Halliburton frackers from the Clean Water Act in 2004? Did you realize that each well is too small to be monitored by the EPA, but combined, they are worse than another coal plant? Did you see the movie documentary Gasland where the farmer lights his tap water, the animals and people are all sick and they are not allowed to sue because they signed contracts. No one can sell their land and move.

Why in God's name would you even consider reducing air quality standards in a time of climate change and heavy pollution instead of insisting on clean renewable solar, wind, geothermal energy? What is your job and who do you represent? If it is the people of NC, you must not do this! If you have children, neighbors or live in NC, how could you face them ever again if you allow more pollution?

Of course, not to mention the earthquakes as in Ohio in one county where 181 frack wells were drilled and they had earthquakes as a result?

Please, be considerate of all of us and the planet. Do not reduce air quality standards for NC!
Sincerely,

Deb Arnason
360 Webb Rd, Wadesboro NC 28170

Appendix E

704-851-3925 diamondteldeb@aol.com

From: Juan [beerios@aol.com]
Sent: Saturday, September 29, 2012 3:32 PM
To: SVC_DENR.DAQ.publiccomments
Subject: review of the state Air Toxics Program

As a resident of Wake co, I expect that our state legislators will not vote to move backwards on laws designed to protect the health of our community. Letting industry get away with minimal pollution controls directly impacts not only our health and our children's health, but the health of our economy as well. Can North Carolina continue to be a top vacation destination with a reputation as a pollution haven? Let's not find out! I will be closely monitoring the voting dealing with this issue. DO the right thing!

From: Megan McLaurin [meganmclaurin@vermontlaw.edu]
Sent: Wednesday, October 03, 2012 3:05 PM
To: [redacted]SVC_DENR.DAQ.publiccomments
Subject: NC air toxics program

Members of the Division of Air Quality, fellow North Carolinians and concerned citizens:

As a resident of Wilmington, NC who is temporarily out of state studying law at Vermont Law School, I am deeply concerned by the prospect of our state lowering its standards for toxic air pollutant controls. North Carolina's air toxics program establishes a health-based method for regulating toxic pollutants and protecting our state's air quality, and in doing so regulates an additional 21 compounds to those requiring mandated regulation under the federal standards. Maintaining a higher standard of air quality, and thus air quality protection and toxic pollutant emission regulation, is critical to assuring our state remains a wonderful place to live and a tourist destination to which people all over America and the world love to travel.

It is common knowledge to those in the legal community, as well as those in the [redacted]entific, medical, and public health communities, that our federal environmental legislation, including our air protection legislation is grossly outdated and does not adequately serve to protect current public health. This is largely the result of continuously growing industry and continuously advancing science allowing us to understand the connections between public health and environmental risks, while the law is unfortunately slow to catch up to society's knowledge because of the burdensome legislative process. North Carolina has already recognized the inadequacy of the federal standards, taking a leadership role in protecting its own air quality, while the federal agencies have failed to pay such quick attention, and in fact are unable to address each state's unique needs. The science is there to evidence that our state's toxic air pollutant controls are critical to protecting public health, and this is in fact why North Carolina implemented its own program in addition to that provided by the federal agencies. We cannot move backgrounds, resigning our state to the slow-moving standards of the federal agencies that often only acknowledge health risks when it is too late for many already affected.

In l[redacted]ering its standards under its state program, North Carolina puts its residents at risk, jeopardizing not only the health of the old, the very young, and the sick, but also the active members of our communities that enjoy spending time outdoors, such as our healthy children playing at playgrounds or

our athletes who practice and perform outdoors. By settling for the federal standards, North Carolina puts its environment at risk, including all the grand flora and fauna it includes.

North Carolina must do better than the federal regulations, which are technology-based and don't reflect the latest medical research, often lagging years behind the current understanding of the impact of air pollutants on human health. As a state we should strive to have current regulations, directly corresponding to the most recent medical information. It is our duty to govern the people, to provide for their safety, not to roll back regulations and settle for an out-dated federal system. We, as North Carolinians, are better than that.

Please maintain the current air toxics program, or make it stronger! Put public health before corporate interests. Corporations can comply, North Carolinians cannot undo the harm they will be subjected to by weakened standards. Let's bring North Carolina towards the top of the list of best places to live and work, instead of continuing to allow it to work its way up on the list of most polluted air.

Thank you for your time and attention,

Megan K. McLaurin
J.D./MELP Candidate
Staff Editor, Vermont Journal of Environmental Law Vermont Law School
910.200.6130

Appendix E

From: Lynn Hale [llhale@gmail.com]
Sent: Monday, October 08, 2012 10:53 PM
To: SVC_DENR.DAQ.publiccomments
Subject: changing NC Air Quality laws

I am writing to express my concern that eliminating NC regulations related to clean air regulation and accepting Federal laws will create an unsafe and unhealthy environment. My understanding is that the Federal laws are not based on how pollutants affect human health. I want to maintain the stricter regulations that we have in NC. In fact, they need to be stricter, as our state was listed in the top 10 with the worst air quality. This affects everyone. Children and the elderly at at highest risk. We must listen to the medical experts. If our legislators don't make concerned decisions for the welfare of the public (instead of for financial gains) they will be stealing the hope of present and future generations for good health. This generation has a moral obligation to protect the environment for future generations and to protect the health of our fragile citizens.
Thanks you. Lynn Hale, 3601 Fieldgate Rd., Greensboro, NC 27406 336-674-3326
LLHale@gmail.com

#14

NCDENR

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FROM: Kari Barsness KKB
Director of Legislative and Intergovernmental Affairs

SUBJECT: Report on Inspections, Audits and Examinations

DATE: December 3, 2012

Section 4 of Session Law 2012-91 requires the Division of Air Quality to report on the implementation of changes to the state air toxics program to the Environmental Review Commission no later than December 1 for the years 2012, 2013 and 2014. The report shall include an analysis of air toxic emissions changes and a summary of results of the division's analysis of air quality impacts. Please see the attached information to satisfy this reporting requirement.

If you have any questions or need additional information, please contact me by phone at (919) 707-8618 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Robin Smith, Assistant Secretary for Environment
Sheila Holman, Division of Air Quality
Jennifer Hoffmann, Fiscal Research Division
Mariah Matheson, Research Division

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One NorthCarolina Naturally

Implementation of Session Law 2012-91

A Report to the
Environmental Review Commission

Submitted by the Department of Environment and Natural Resources
Division of Air Quality

This report is submitted pursuant to the requirement of Section 4 of Session Law 2012-91, House Bill 952.

December 1, 2012

EXECUTIVE SUMMARY

Session Law 2012-91 provides an exemption from North Carolina's air toxics rules for certain sources of toxic air pollutants as long as the Division of Air Quality (DAQ) determines that the emissions from that facility will not pose an unacceptable risk to human health. Additionally, Section 4 of the session law requires a report on the implementation of the act to the Environmental Review Commission including an analysis of air toxic emissions changes and a summary of results of the DAQ's analysis of air quality impacts. This report addresses the Section 4 requirements.

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INTRODUCTION

The state air toxics rules administered by the Division of Air Quality (DAQ) were established in the early 1990s in the absence of an effective federal program to protect citizens from adverse health effects from exposure to toxic air pollutants. In the 20-plus years since, the United States Environmental Protection Agency (USEPA) has issued more than 100 national air toxics standards. The federal standards for existing sources of pollution represent stringent control levels reflecting the 12-percent best-performing units across the nation. For new sources, the federal standards require emissions control currently achieved by the best-controlled similar source. As a result of state and federal actions, toxic air emissions in North Carolina decreased by 62 percent between 1998 and 2011. Facilities required to comply with federal standards rarely have had to install additional pollution control equipment to meet the state air toxics rules.

In 2012, the General Assembly amended the statutes that authorize the state air toxics rules (See Appendix A). Session Law 2012-91 provides an exemption to the air toxics rules for any air emission source that is subject to any requirement under either:

- Regulations established by the USEPA that require sources of toxic air pollutants to control emissions of toxic air pollutants through the use of maximum achievable control technologies or generally available control technologies.
- State permits that established case-by-case emission limits for toxic air pollutants pursuant to Section 112(j) of the Clean Air Act, which requires states to establish toxic emission standards when EPA fails to do so for a given industrial sector.

The session law, however, requires DAQ to review permit applications that result in a net increase in toxic air pollutants to ensure the emissions will not pose an unacceptable risk to human health. If DAQ finds that emissions from a facility will pose an unacceptable risk to human health, the facility must comply with state air toxics rules even if it falls within one of the two exempt categories.

Additionally, Section 4 of S.L. 2012-91 requires DAQ to report on the implementation of the session law including an analysis of air toxics emissions changes and a summary of results of DAQ's analysis of air quality impacts. The review and data analysis contained in this report are pursuant to Section 4 of S.L. 2012-91.

CURRENT AIR TOXICS RULES

The state air toxics rules administered by the Division of Air Quality (DAQ) were established in the early 1990s in the absence of an effective federal program to protect citizens from adverse health effects from exposure to toxic air pollutants. North Carolina's health risk-based air toxics rules provide for local scale evaluation of the maximum impact of air toxic emissions from a facility at or beyond its property boundary through site-specific emissions estimates and modeling. It is designed to protect public health by minimizing exposure to (and the resulting risk from) toxic air pollutants emitted from the entire facility.

The rules are designed around a set of Acceptable Ambient Level (AAL) guidelines. "Acceptable" in this context is intended to be a level "below the concentration that would produce adverse health effects in sensitive subgroups of the general population." Regulated pollution sources are required by North Carolina air toxics rules to reduce emissions of toxic air pollutants below those levels that are predicted to exceed the AAL beyond their property line. The rules allow the use of computer-based air dispersion models to compare the impact of toxic air pollutant emissions to the appropriate AAL.

The state rules that set forth the control of toxic air pollutants to protect human health (including the AALs) are found in the North Carolina Administrative Code at 15A NCAC 02D .1100 (Control of Toxic Air Pollutants). The state rules that set forth the permitting requirements for sources of toxic air pollutants are found at 15A NCAC 02Q .0700 (Toxic Air Pollutant Procedures). Both sections can be found in Appendix B and C, respectively.

IMPLEMENTATION OF S.L. 2012-91

The DAQ began tracking permit actions specifically impacted by the exemptions and process provided in Section 1 of S.L. 2012-91. Starting with the day the bill became law (June 28, 2012), through October 28, 2012, the DAQ issued 115 new or modified air quality permits. Only 12 of those 115 (10.4%) permit actions involved a request that could result in an increase in the emission of toxic air pollutants. Each of those 12 permit applications were reviewed to determine if the emission of toxic air pollutants from the facility would present an unacceptable risk to human health. None of the 12 permit applications were determined to pose such a risk. In four cases, the proposed emission rates were compared to the toxic permitting emission rate found in 02Q .0700, and were found to be below those levels. In six of the cases, modeling had been done previously at these facilities that allowed DAQ to compare the previously modeled emission rate(s) to the emission rate(s) being proposed as a result of the requested modification. In all six of those cases, DAQ determined that the proposed modification would be below the AAL guidelines. Finally, in two cases, the permit applicant voluntarily provided a modeling analysis demonstrating the emissions changes would be below the AAL guidelines. DAQ confirmed the results of those modeling analyses. A summary of the results of the division's analysis of air quality impacts is provided in Table 1 below.

Table 1: Analysis of air toxics permit applications: June 28, 2012 through October 28, 2012.

Toxic air emissions below thresholds for further analysis	Modeling done previously for the facility used to determine compliance	Facility voluntarily provided air toxics modeling showing compliance	Air toxics modeling over AAL resulting in Director's Call
4	6	2	0

For each of the permit applications summarized above, DAQ also tracked the pollutants that were most commonly encountered in the analyses. Those pollutants are listed in Table 2 below.

Table 2: Toxic air pollutants most frequently encountered during permit application reviews for the period June 28, 2012 through October 28, 2012.

Toxic air pollutant	Number of instances >1
Formaldehyde	5
Arsenic	4
Beryllium	4
Cadmium	4
Nickel	4
Manganese	4
Benzene	2
Fluorides	2

ANALYSIS OF AIR TOXIC EMISSIONS CHANGES

Emissions of toxic air pollutants have decreased substantially over the last two decades due to a variety of federal and state emissions reduction measures. Not only have the federal and state rules designed to reduce toxic air pollution been implemented on stationary sources, but toxic air emissions also have dropped as emissions of smog forming pollutants have been reduced from sources like cars and trucks.

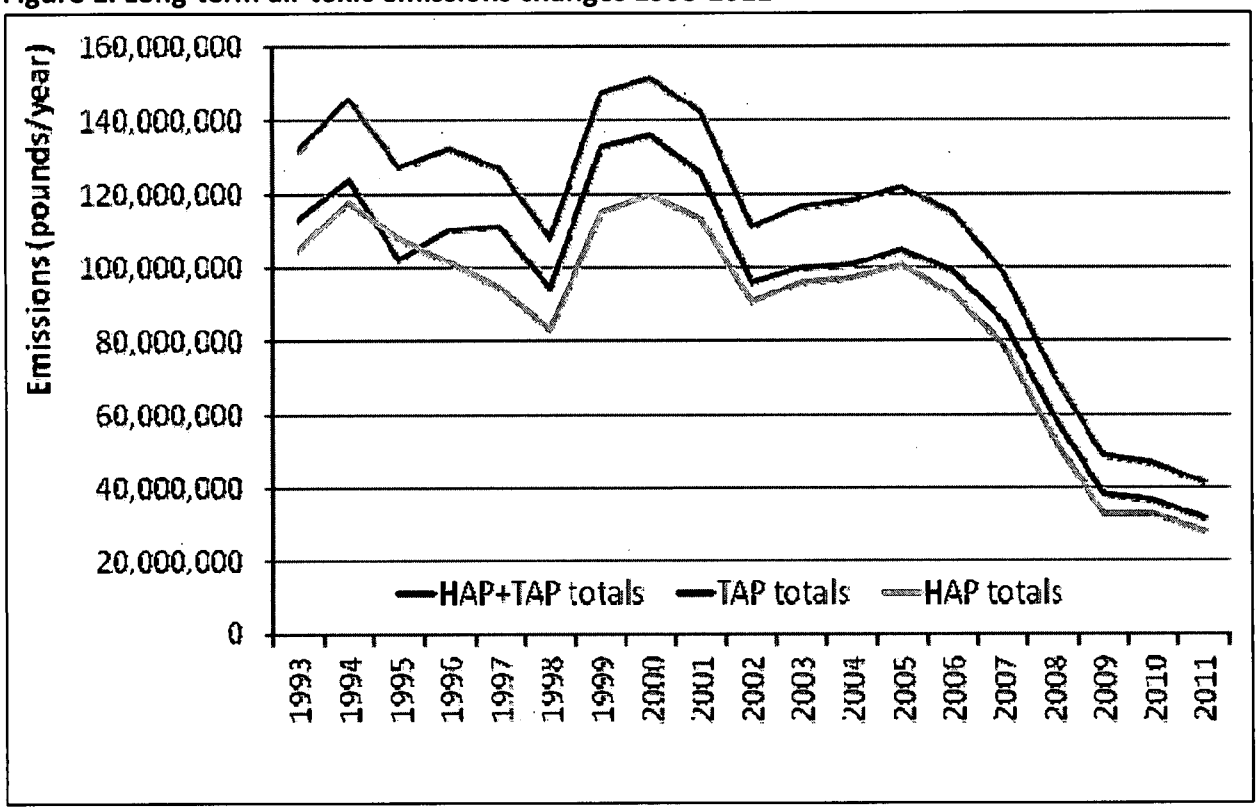
In North Carolina, the state rules identify 97 toxic air pollutants (TAPs) while the USEPA identifies 187 hazardous air pollutants (HAPs). There are 21 unique compounds on the state TAP list that are not on the federal HAP list. Regardless of what list these compounds are on, the reductions in these emissions have been noteworthy. Table 3 provides the three most recent years of air toxics emissions data. Figure 1 illustrates the longer term decreases in HAPs and TAPs in North Carolina over nearly two decades.

Table 3. North Carolina air toxic emissions changes 2009-2011.

	2009	2010	2011
TAP Only (pounds/yr)	38,142,325	36,385,525	31,712,917
HAP Only (pounds/yr)	32,774,769	32,604,346	27,977,691
HAP + TAP (pounds/yr)	48,493,673	46,497,405	41,410,502

TAP = 97 Toxic Air Pollutants regulated by NC State Air Toxics Rule
HAP = 187 Hazardous Air Pollutant regulated under 40 CFR Part 61 & 63
HAP + TAP = 111 unique HAPS added to the 97 TAPs.
Note: 2011 represents emissions reported for 2011 operating year or the most currently reported year.
Source: Annual toxic air emissions reported by North Carolina facilities to the DAQ.

Figure 1. Long-term air toxic emissions changes 1993-2011



Source: Annual toxic air emissions reported by North Carolina facilities to the DAQ.

In summary, the DAQ issued 115 new or modified air quality permits between June 28, 2012 and October 28, 2012. Only 12 of those 115 (10.4%) permit actions involved a request that could result in an increase in the emission of toxic air pollutants. Each of those 12 permit applications were reviewed to determine if the emission of toxic air pollutants from the facility would present an unacceptable risk to human health. None of the 12 permit applications were determined to pose such a risk. Additionally, a review of DAQ's emissions inventory for toxic air pollutants shows a continued downward trend, primarily as a result of federal and state emissions reduction measures. Toxic air emissions in North Carolina decreased by 62 percent between 1998 and 2011.

Appendix A

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011

SESSION LAW 2012-91
HOUSE BILL 952

AN ACT TO EXEMPT FROM STATE AIR TOXICS EMISSIONS CONTROLS THOSE SOURCES OF EMISSIONS THAT ARE SUBJECT TO CERTAIN FEDERAL EMISSIONS REQUIREMENTS, TO DIRECT THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES TO REQUIRE PERMIT CONDITIONS THAT ELIMINATE UNACCEPTABLE RISKS TO HUMAN HEALTH, TO DIRECT THE DIVISION OF AIR QUALITY TO REVIEW THE STATE AIR TOXICS PROGRAM, AND TO REQUIRE REPORTS ON THE IMPLEMENTATION OF THIS ACT, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 143-215.107(a) reads as rewritten:

"(a) Duty to Adopt Plans, Standards, etc. – The Commission is hereby directed and empowered, as rapidly as possible within the limits of funds and facilities available to it, and subject to the procedural requirements of this Article and Article 21:

...

(5) To develop and adopt emission control standards as in the judgment of the Commission may be necessary to prohibit, abate, or control air pollution commensurate with established air quality standards. ~~This subdivision does not apply to that portion of the National Emission Standards for Hazardous Air Pollutants for asbestos that governs demolition and renovation as set out in 40 C.F.R. § 61.141, 61.145, 61.150, and 61.154 (1 July 1993 edition).~~ The Department shall implement rules adopted pursuant to this subsection as follows:

a. Except as provided in sub-subdivision b. of this subdivision, rules adopted pursuant to this subdivision that control emissions of toxic air pollutants shall not apply to an air emission source that is any of the following:

1. Subject to an applicable requirement under 40 C.F.R. Part 61, as amended.
2. An affected source under 40 C.F.R. Part 63, as amended.
3. Subject to a case-by-case maximum achievable control technology (MACT) permit requirement issued by the Department pursuant to 42 U.S.C. § 7412(j), as amended.

b. Upon receipt of a permit application for a new source or facility, or for the modification of an existing source or facility, that would result in an increase in the emission of toxic air pollutants, the Department shall review the application to determine if the emission of toxic air pollutants from the source or facility would present an unacceptable risk to human health. Upon making a written finding that a source or facility presents or would present an unacceptable risk to human health, the Department shall require the owner or operator of the source or facility to submit a permit application for any or all emissions of toxic air pollutants from the facility that eliminates the unacceptable risk to human health. The written finding may be based on modeling, epidemiological studies, actual monitoring data, or other information that indicates an unacceptable

health risk. When the Department requires the owner or operator of a source or facility to submit a permit application pursuant to this sub-subdivision, the Department shall report to the Chairs of the Environmental Review Commission on the circumstances surrounding the permit requirement, including a copy of the written finding.

...."

SECTION 2. The Environmental Management Commission shall amend its rules adopted pursuant to G.S. 143-215.107(a) so that they are consistent with the provisions of Section 1 of this act.

SECTION 3. The Division of Air Quality of the Department of Environment and Natural Resources shall review toxic air pollutant rules adopted pursuant to G.S. 143-215.107(a) and the implementation of those rules to determine whether changes could be made to the rules or their implementation to reduce unnecessary regulatory burden and increase the efficient use of Division resources while maintaining protection of public health. The Division shall conduct this review in consultation with interested parties. The Division shall report the results of its review, including recommendations, if any, to the Environmental Review Commission no later than December 1, 2012.

SECTION 4. The Division of Air Quality in the Department of Environment and Natural Resources shall report on the implementation of this act to the Environmental Review Commission no later than December 1 for the years 2012, 2013, and 2014. The report shall include an analysis of air toxic emissions changes and a summary of results of the Division's analysis of air quality impacts.

SECTION 5. This act is effective when it becomes law.

In the General Assembly read three times and ratified this the 21st day of June, 2012.

s/ Walter H. Dalton
President of the Senate

s/ Thom Tillis
Speaker of the House of Representatives

s/ Beverly E. Perdue
Governor

Approved 1:34 p.m. this 28th day of June, 2012

SECTION .1100 - CONTROL OF TOXIC AIR POLLUTANTS

15A NCAC 02D .1101 PURPOSE
This Section sets forth the rules for the control of toxic air pollutants to protect human health.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(1),(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. May 1, 1990.*

15A NCAC 02D .1102 APPLICABILITY

(a) The toxic air pollutant rules in this Section apply to all facilities that emit a toxic air pollutant that are required to have a permit under 15A NCAC 2Q .0700.

(b) Sources at facilities subject to this Section shall comply with the requirements of this Section as well as with any applicable requirements in Sections .0500, .0900, and .1200 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(1),(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. May 1, 1990;
Amended Eff. July 1, 1998; December 1, 1991.

15A NCAC 02D .1103 DEFINITION

For the purpose of this Section, the following definitions apply:

(1) "Asbestos" means asbestos fibers as defined in 40 CFR 61.141.

(2) "Bioavailable chromate pigments" means the group of chromium (VI) compounds consisting of calcium chromate (CAS No.13765-19-0), calcium dichromate (CAS No. 14307-33-6), strontium chromate (CAS No. 7789-06-2), strontium dichromate (CAS No. 7789-06-2), zinc chromate (CAS No. 13530-65-9), and zinc dichromate (CAS No. 7789-12-0).

(3) "CAS Number" means the Chemical Abstract Service registry number identifying a particular substance.

(4) "Chromium (VI) equivalent" means the molecular weight ratio of the chromium (VI) portion of a compound to the total molecular weight of the compound multiplied by the associated compound emission rate or concentration at the facility.

(5) "Non-specific chromium (VI) compounds" means the group of compounds consisting of any chromium (VI) compounds not specified in this Section as a bioavailable chromate pigment or a soluble chromate compound.

(6) "Cresol" means o-cresol, p-cresol, m-cresol or any combination of these compounds.

(7) "GACT" means any generally available control technology emission standard applied to an area source or facility pursuant to Section 112 of the federal Clean Air Act.

(8) "Hexane isomers except n-hexane" means 2-methyl pentane, 3-methyl pentane, 2,2-dimethyl butane, 2,3-dimethyl butane, or any combination of these compounds.

(9) "MACT" means any maximum achievable control technology emission standard applied to a source or facility pursuant to Section 112 of the federal Clean Air Act.

(10) "Nickel, soluble compounds" means the soluble nickel salts of chloride ($NiCl_2$, CAS No. 7718-54-9), sulfate ($NiSO_4$, CAS No. 7786-81-4), and nitrate ($Ni(NO_3)_2$, CAS No. 13138-45-9).

(11) "Polychlorinated biphenyls" means any chlorinated biphenyl compound or mixture of chlorinated biphenyl compounds.

(12) "Soluble chromate compounds" means the group of chromium (VI) compounds consisting of ammonium chromate (CAS No. 7788-98-9), ammonium dichromate (CAS No. 7789-09-5), chromic acid (CAS No. 7738-94-5), potassium chromate (CAS No. 7789-00-6), potassium dichromate (CAS No. 7778-50-9), sodium chromate (CAS No. 7775-11-3), and sodium dichromate (CAS No. 10588-01-9).

(13) "Toxic air pollutant" means any of those carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants listed in Rule .1104 of this Section.

History Note: *Authority G.S. 143-213; 143-215.3(a)(1); 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. May 1, 1990;
Amended Eff. April 1, 2001; July 1, 1998.

15A NCAC 02D .1104 TOXIC AIR POLLUTANT GUIDELINES

A facility shall not emit any of the following toxic air pollutants in such quantities that may cause or contribute beyond the premises (adjacent property boundary) to any significant ambient air concentration that may adversely affect human health. In determining these significant ambient air concentrations, the Division shall be guided by the following list of acceptable ambient levels in milligrams per cubic meter at 77° F (25° C) and 29.92 inches (760 mm) of mercury pressure (except for asbestos):

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
acetaldehyde (75-07-0)				27
acetic acid (64-19-7)				3.7
acrolein (107-02-8)				0.08
acrylonitrile (107-13-1)		0.03	1	
ammonia (7664-41-7)				2.7
aniline (62-53-3)			1	
arsenic and inorganic arsenic compounds	2.3×10^{-7}			
asbestos (1332-21-4)	2.8×10^{-11} fibers/ml			
aziridine (151-56-4)		0.006		
benzene (71-43-2)	1.2×10^{-4}			
benzidine and salts (92-87-5)	1.5×10^{-8}			
benzo(a)pyrene (50-32-8)	3.3×10^{-5}			
benzyl chloride (100-44-7)			0.5	
beryllium (7440-41-7)	4.1×10^{-6}			
beryllium chloride (7787-47-5)	4.1×10^{-6}			
beryllium fluoride (7787-49-7)	4.1×10^{-6}			
beryllium nitrate (13597-99-4)	4.1×10^{-6}			
bioavailable chromate pigments, as chromium (VI) equivalent	8.3×10^{-8}			
bis-chloromethyl ether (542-88-1)	3.7×10^{-7}			
bromine (7726-95-6)				0.2
1,3-butadiene (106-99-0)	4.4×10^{-4}			
cadmium (7440-43-9)	5.5×10^{-6}			
cadmium acetate (543-90-8)	5.5×10^{-6}			
cadmium bromide (7789-42-6)	5.5×10^{-6}			
carbon disulfide (75-15-0)		0.186		
carbon tetrachloride (56-23-5)	6.7×10^{-3}			
chlorine (7782-50-5)		0.0375		0.9
chlorobenzene (108-90-7)		2.2		
chloroform (67-66-3)	4.3×10^{-3}			
chloroprene (126-99-8)		0.44	3.5	
cresol (1319-77-3)			2.2	
p-dichlorobenzene (106-46-7)				66
dichlorodifluoromethane (75-71-8)		248		
dichlorofluoromethane (75-43-4)		0.5		
di(2-ethylhexyl)phthalate (117-81-7)		0.03		
dimethyl sulfate (77-78-1)		0.003		
1,4-dioxane (123-91-1)		0.56		

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
epichlorohydrin (106-89-8)	8.3×10^{-2}			
ethyl acetate (141-78-6)			140	
ethylenediamine (107-15-3)		0.3	2.5	
ethylene dibromide (106-93-4)	4.0×10^{-4}			
ethylene dichloride (107-06-2)	3.8×10^{-3}			
ethylene glycol monoethyl ether (110-80-5)		0.12	1.9	
ethylene oxide (75-21-8)	2.7×10^{-5}			
ethyl mercaptan (75-08-1)			0.1	
fluorides		0.016	0.25	
formaldehyde (50-00-0)				0.15
hexachlorocyclopentadiene (77-47-4)		0.0006	0.01	
hexachlorodibenzo-p-dioxin (57653-85-7)	7.6×10^{-8}			
n-hexane (110-54-3)		1.1		
hexane isomers except n-hexane				360
hydrazine (302-01-2)		0.0006		
hydrogen chloride (7647-01-0)				0.7
hydrogen cyanide (74-90-8)		0.14	1.1	
hydrogen fluoride (7664-39-3)		0.03		0.25
hydrogen sulfide (7783-06-4)		0.12		
maleic anhydride (108-31-6)		0.012	0.1	
manganese and compounds		0.031		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		0.0006		
manganese tetroxide (1317-35-7)		0.0062		
mercury, alkyl		0.00006		
mercury, aryl and inorganic compounds		0.0006		
mercury, vapor (7439-97-6)		0.0006		
methyl chloroform (71-55-6)		12		245
methylene chloride (75-09-2)	2.4×10^{-2}		1.7	
methyl ethyl ketone (78-93-3)		3.7		88.5
methyl isobutyl ketone (108-10-1)		2.56		30
methyl mercaptan (74-93-1)			0.05	
nickel carbonyl (13463-39-3)		0.0006		
nickel metal (7440-02-0)		0.006		
nickel, soluble compounds, as nickel		0.0006		
nickel subsulfide (12035-72-2)	2.1×10^{-6}			
nitric acid (7697-37-2)				1
nitrobenzene (98-95-3)		0.06	0.5	
n-nitrosodimethylamine (62-75-9)	5.0×10^{-5}			
non-specific chromium (VI) compounds, as chromium (VI) equivalent	8.3×10^{-8}			
pentachlorophenol (87-86-5)		0.003	0.025	
perchloroethylene (127-18-4)	1.9×10^{-1}			

Pollutant (CAS Number)	Annual (Carcinogens)	24-hour (Chronic Toxicants)	1-hour (Acute Systemic Toxicants)	1-hour (Acute Irritants)
phenol (108-95-2)			0.95	
phosgene (75-44-5)		0.0025		
phosphine (7803-51-2)				0.13
polychlorinated biphenyls (1336-36-3)	8.3×10^{-5}			
soluble chromate compounds, as chromium (VI) equivalent		6.2×10^{-4}		
styrene (100-42-5)			10.6	
sulfuric acid (7664-93-9)		0.012	0.1	
tetrachlorodibenzo-p-dioxin (1746-01-6)	3.0×10^{-9}			
1,1,1,2-tetrachloro-2,2,- difluoroethane (76-11-9)		52		
1,1,2,2-tetrachloro-1,2- difluoroethane (76-12-0)		52		
1,1,2,2-tetrachloroethane (79-34-5)	6.3×10^{-3}			
toluene (108-88-3)		4.7		56
toluene diisocyanate, 2,4- (584-84-9) and 2,6- (91-08-7) isomers		0.0002		
trichloroethylene (79-01-6)	5.9×10^{-2}			
trichlorofluoromethane (75-69-4)			560	
1,1,2-trichloro-1,2,2- trifluoroethane (76-13-1)				950
vinyl chloride (75-01-4)	3.8×10^{-4}			
vinylidene chloride (75-35-4)		0.12		
xylene (1330-20-7)		2.7		65

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(4),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. May 1, 1990;*
Amended Eff. September 1, 1992; March 1, 1992;
Temporary Amendment Eff. July 20, 1997;
Amended Eff. March 1, 2010; June 1, 2008; April 1, 2005; April 1, 2001; July 1, 1998.

15A NCAC 02D .1105 FACILITY REPORTING, RECORDKEEPING

The Director may require, according to Section .0600 of this Subchapter, the owner or operator of a source subject to this Section to monitor emissions of toxic air pollutants, to maintain records of these emissions, and to report these emissions. The owner or operator of any toxic air pollutant emission source subject to the requirements of this Section shall comply with the monitoring, recordkeeping, and reporting requirements in Section .0600 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(4),(5); 143B-282;*
Eff. May 1, 1990;
Amended Eff. April 1, 1999; October 1, 1991.

15A NCAC 02D .1106 DETERMINATION OF AMBIENT AIR CONCENTRATION

(a) Modeling shall not be used for enforcement. Modeling shall be used to determine process operational and air pollution control parameters and emission rates for toxic air pollutants to place in the air quality permit for that facility that will prevent any of the acceptable ambient levels in Rule .1104 of this Section from being exceeded, with such exceptions as may be allowed under 15A NCAC 2Q .0700. Enforcing these permit stipulations and conditions shall be the mechanism used to ensure that the requirements of Rule .1104 of this Section, with such exceptions as may be allowed by 15A NCAC 2Q .0700, are met.

(b) The owner or operator of the facility may request the Division to perform a modeling analysis of the facility or provide the analysis himself. If the owner or operator of the facility requests the Division to perform the modeling analysis, he shall provide emissions rates, stack parameters, and other information that the Division needs to do the modeling. The data that the owner or operator of the facility provides the Division to use in the model or in deriving the data used in the model shall be the process, operational and air pollution control equipment parameters and emission rates that will be contained in the facility=s permit. If the Division=s initial review of the modeling request indicates extensive or inappropriate use of state resources or if the Division=s modeling analysis fails to show compliance with the acceptable ambient levels in Rule .1104 of this Section, the modeling demonstration becomes the responsibility of the owner or operator of the facility.

(c) When the owner or operator of the facility is responsible for providing the modeling demonstration and the data used in the modeling, the owner or operator of the facility shall use in the model or in deriving data used in the model the process operational and air pollution control equipment parameters and emission rates that will be contained in his permit. Sources that are not required to be included in the model will not be included in the permit to emit toxic air pollutants.

(d) For the following pollutants, modeled emission rates shall be based on the highest emissions occurring in any single 15 minute period. The resultant modeled 1-hour concentrations shall then be compared to the applicable 1-hour acceptable ambient levels to determine compliance. These pollutants are:

(1) acetaldehyde (75-07-0)
(2) acetic acid (64-19-7)
(3) acrolein (107-02-8)
(4) ammonia (7664-41-7)
(5) bromine (7726-95-6)
(6) chlorine (7782-50-5)
(7) formaldehyde (50-00-0)
(8) hydrogen chloride (7647-01-0)
(9) hydrogen fluoride (7664-39-3)
(10) nitric acid (7697-37-2)

(e) The owner or operator of the facility and the Division may use any model allowed by 40 CFR 51.166(l) provided that the model is appropriate for the facility being modeled. The owner or operator or the Division may use a model other than one allowed by 40 CFR 51.166(l) provided that the Director determines that the model is equivalent to the model allowed by 40 CFR 51.166(l). Regardless of model used, the owner or operator and the Division shall model for cavity effects and shall comply with the modeling requirements for stack height set out in Rule .0533 of this Subchapter.

(f) Ambient air concentrations are to be evaluated for annual periods over a calendar year, for 24-hour periods from midnight to midnight, and for one-hour periods beginning on the hour.

(g) The owner or operator of the facility shall identify each toxic air pollutant emitted and its corresponding emission rate using mass balancing analysis, source testing, or other methods that the Director may approve as providing an equivalently accurate estimate of the emission rate.

(h) The owner or operator of the facility shall submit a modeling plan to the Director and shall have received approval of that plan from the before submitting a modeling demonstration to the Director. The modeling plan shall include:

(1) a diagram of the plant site, including locations of all stacks and associated buildings;
(2) on-site building dimensions;
(3) a diagram showing property boundaries, including a scale, key and north indicator;
(4) the location of the site on a United States Geological Survey (USGS) map;
(5) discussion of good engineering stack height and building wake effects for each stack;
(6) discussion of cavity calculations, impact on rolling and complex terrain, building wake effects, and urban/rural considerations;
(7) discussion of reasons for model selection;
(8) discussion of meteorological data to be used;
(9) discussion of sources emitting the pollutant that are not to be included in the model with an explanation of why they are being excluded (i.e. why the source will not affect the modeling analysis); and

(10) any other pertinent information.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282; S.L. 1989, c. 168, s. 45;*
Eff. May 1, 1990;
Amended Eff. July 1, 1998.

15A NCAC 02D .1107 MULTIPLE FACILITIES

(a) If an acceptable ambient level in Rule .1104 of this Section is exceeded because of emissions of two or more facilities and if public exposure is such that the commission has evidence that human health may be adversely affected, then the Commission shall require the subject facilities to apply addition controls or to otherwise reduce emissions. The type of evidence that the Commission shall consider shall include one or more of the following:

(1) emission inventory,
(2) ambient monitoring,
(3) modeling, or
(4) epidemiological study.

(b) The allocation of the additional reductions shall be based on the relative contributions to the pollutant concentrations unless the owners or operators agree otherwise.

(c) The owner or operator of a facility shall not be required to conduct the multi-facility ambient impact analysis described in Paragraph (a) of this Rule. This type of analysis shall be done by the Division of Air Quality. In performing its analysis, the Division shall:

(1) develop a modeling plan that includes the elements set out in Paragraph (f) of Rule .1106 of this Section;
(2) use for the source modeling parameters, the modeling parameters used by the owner or operator of the source in his modeling demonstration, or if a modeling demonstration has not been done or if a needed parameter has not been used in the modeling demonstration, parameters contained in, or derived from data contained in, the source's permit;
(3) use a model allowed by Paragraph (c) of Rule .1106 of this Section;
(4) model for cavity effects and comply with the modeling requirements for stack height set out in Rule .0533 of this Section;
(5) use the time periods required by Paragraph (d) of Rule .1106 of this Section; and
(6) only consider impacts of a facility=s emissions beyond the premises of that facility.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282;*
Eff. May 1, 1990;
Amended Eff. July 1, 1998.

15A NCAC 02D .1108 MULTIPLE POLLUTANTS

If the Commission has evidence that two or more toxic air pollutants being emitted from a facility or combination of facilities act in the same way to affect human health so that their effects may be additive or enhanced and that public exposure is such that human health may be adversely affected, then the Commission will consider developing acceptable ambient levels for the combination of toxic air pollutants or other appropriate control measures.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(3),(5); 143B-282; Eff. May 1, 1990.*

15A NCAC 02D .1109 112(J) CASE-BY-CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

(a) Applicability. This Rule applies only to sources of hazardous air pollutants required to have a permit under 15A NCAC 02Q .0500 and as described in 40 CFR 63.50. This Rule does not apply to research or laboratory activities as defined in Paragraph (b) of this Rule.

(b) Definitions. For the purposes of this Rule, the definitions in 40 CFR 63.2, 63.51, 15A NCAC 02Q .0526, and the following definitions apply:

(1) "Affected source" means the collection of equipment, activities, or both within a single contiguous area and under common control that is in a Section 112(c) source category or subcategory that the Administrator has failed to promulgate an emission standard by the Section 112(j) deadline, and that is addressed by an applicable MACT emission limitation established pursuant to 40 CFR Part 63 Subpart B;

(2) "Control technology" means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants including measures that:
- (A) reduce the quantity, or eliminate emissions, of such pollutants through process changes, substitution of materials, or other modifications;
- (B) enclose systems or processes to eliminate emissions;
- (C) collect, capture, or treat such pollutants when released from a process, stack, storage, or fugitive emission point;
- (D) are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 USC 7412(h); or
- (E) are a combination of Parts (A) through (D) of this definition.

(3) "EPA" means the United States Environmental Protection Agency or the Administrator of U.S. Environmental Protection Agency.

(4) "Hazardous air pollutant" means any pollutant listed under Section 112(b) of the federal Clean Air Act.

(5) "MACT" means maximum achievable control technology.

(6) "Maximum achievable control technology" means:
- (A) for existing sources,
  - (i) a MACT standard that EPA has proposed or promulgated for a particular category of facility or source,
  - (ii) the average emission limitation achieved by the best performing 12 percent of the existing facilities or sources for which EPA has emissions information if the particular category of source contains 30 or more sources, or
  - (iii) the average emission limitation achieved by the best performing five facilities or sources for which EPA has emissions information if the particular category of source contains fewer than 30 sources, or
- (B) for new sources, the maximum degree of reduction in emissions that is deemed achievable but not less stringent than the emission control that is achieved in practice by the best controlled similar source.

(7) "MACT floor" means:
- (A) for existing sources:
  - (i) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which EPA has emissions information) excluding those sources that have, within 18 months before the emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, or would comply if the source is not subject to such standard, with the lowest achievable emission rate (as defined in Section 171 of the federal Clean Air Act) applicable to the source category or subcategory for categories and subcategories with 30 or more sources; or
  - (ii) the average emission limitation achieved by the best performing five sources (for which EPA has emissions or could reasonably obtain emissions information), in the category or subcategory, for categories or subcategories with fewer than 30 sources;
- (B) for new sources, the emission limitation achieved in practice by the best controlled similar source.

(8) "New affected source" means the collection of equipment, activities, or both, that constructed after the issuance of a Section 112(j) permit for the source pursuant to 40 CFR 63.52, is subject to the applicable MACT emission limitation for new sources. Each permit shall define the term "new affected source," that will be the same as the "affected source" unless a different collection is warranted based on consideration of factors including:
(A) Emission reduction impacts of controlling individual sources versus groups of sources;
(B) Cost effectiveness of controlling individual equipment;
(C) Flexibility to accommodate common control strategies;
(D) Cost/benefits of emissions averaging;
(E) Incentives for pollution prevention;
(F) Feasibility and cost of controlling processes that share common equipment (e.g., product recovery devices); and
(G) Feasibility and cost of monitoring,.

(9) "New facility" means a facility for which construction is commenced after the Section 112(j) deadline, or after proposal of a relevant standard under Section 112(d) or (h) of the Federal Clean Air Act, whichever comes first.

(10) "Research or laboratory activities" means activities whose primary purpose is to conduct research and development into new processes and products; where such activities are operated under the supervision of technically trained personnel and are not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner; and where the source is not in a source category specifically addressing research or laboratory activities, that is listed pursuant to Section 112(c)(7) of the Clean Air Act.

(11) "Section 112(j) deadline" means the date 18 months after the date for which a relevant standard is scheduled to be promulgated under 40 CFR Part 63, except that for all major sources listed in the source category schedule for which a relevant standard is scheduled to be promulgated by November 15, 1994, the Section 112(j) deadline is November 15, 1996, and for all major sources listed in the source category schedule for which a relevant standard is scheduled to be promulgated by November 15, 1997, the Section 112(j) deadline is December 15, 1999.

(12) "Similar source" means that equipment or collection of equipment that, by virtue of its structure, operability, type of emissions and volume and concentration of emissions, is substantially equivalent to the new affected source and employs control technology for control of emissions of hazardous air pollutants that is practical for use on the new affected source.

(c) Missed promulgation dates: 112(j). If EPA fails to promulgate a standard for a category of source under Section 112 of the Federal Clean Air Act by the date established pursuant to Sections 112(e)(1) or (3) of the federal Clean Air Act, the owner or operator of any source in such category shall submit, within 18 months after such date, a permit application, in accordance with the procedures in 15A NCAC 02Q .0526, to the Director and to EPA to apply MACT to such sources. Sources subject to this Paragraph shall be in compliance with this Rule within three years from the date that the permit is issued.

(d) New facilities. The owner or operator of any new facility that is a major source of hazardous air pollutants (HAP) that is subject to this Rule shall apply MACT in accordance with the provisions of Rule .1112 of this Section, 15A NCAC 02Q .0528, and 02Q .0526(e)(2).

(e) Case-by-case MACT determination. The Director shall determine MACT according to 40 CFR 63.55(a).

(f) Monitoring and recordkeeping. The owner or operator of a source subject to this Rule shall install, operate, and maintain monitoring capable of detecting deviations from each applicable emission limitation or other standards with sufficient reliability and timeliness to determine continuous compliance over the applicable reporting period. Such monitoring data may be used as a basis for enforcing emissions limitations established under this Rule.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5), (10);*
Temporary Adoption Eff. March 8, 1994 for a period of 180 days or until the permanent rule is effective, whichever is sooner;
Eff. July 1, 1994;
Amended Eff. February 1, 2004; July 1, 1998; July 1, 1996.

15A NCAC 02D .1110 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

(a) With the exception of Paragraph (b) of this Rule, sources subject to national emission standards for hazardous air pollutants promulgated in 40 CFR Part 61 shall comply with emission standards, monitoring and reporting requirements, maintenance requirements, notification and record keeping requirements, performance test requirements, test method and procedural provisions, and any other provisions, as required therein, rather than with any otherwise-applicable Rule in Section .0500 of this Subchapter that would be in conflict therewith.

(b) Along with the notice appearing in the North Carolina Register for a public hearing to amend this Rule to exclude a standard from this Rule, the Director shall state whether or not the national emission standards for hazardous air pollutants promulgated under 40 CFR Part 61, or part thereof, shall be enforced. If the Commission does not adopt the amendment to this Rule to exclude or amend the standard within 12 months after the close of the comment period on the proposed amendment, the Director shall begin enforcing that standard when 12 months has elapsed after the end of the comment period on the proposed amendment.

(c) New sources of volatile organic compounds that are located in an area designated in 40 CFR 81.334 as nonattainment for ozone or an area identified in accordance with 15A NCAC 02D .0902 as in violation of the ambient air quality standard for ozone shall comply with the requirements of 40 CFR Part 61 that are not excluded by this Rule, as well as with any applicable requirements in Section .0900 of this Subchapter.

(d) All requests, reports, applications, submittals, and other communications to the administrator required under Paragraph (a) of this Rule shall be submitted to the Director of the Division of Air Quality rather than to the Environmental Protection Agency; except that all such reports, applications, submittals, and other communications to the administrator required by 40 CFR 61.145 shall be submitted to the Director, Division of Epidemiology.

(e) In the application of this Rule, definitions contained in 40 CFR Part 61 shall apply rather than those of Section .0100 of this Subchapter.

(f) 15A NCAC 02Q .0102 and .0302 are not applicable to any source to which this Rule applies. The owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or .0500.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107 (a)(5); 150B-21.6;*
Eff. July 1, 1996;
Amended Eff. June 1, 2008; July 1, 1997.

15A NCAC 02D .1111 MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

(a) With the exception of Paragraph (b) or (c) of this Rule, sources subject to national emission standards for hazardous air pollutants for source categories promulgated in 40 CFR Part 63 shall comply with emission standards, monitoring and reporting requirements, maintenance requirements, notification and record keeping requirements, performance test requirements, test method and procedural provisions, and any other provisions, as required therein, rather than with any otherwise-applicable rule in Section .0500 of this Subchapter which would be in conflict therewith.

(b) The following are not included under this Rule:

(1) approval of state programs and delegation of federal authorities (40 CFR 63.90 to 63.96, Subpart E); and

(2) requirements for control technology determined for major sources in accordance with Clean Air Act Sections 112(g) and 112(j) (40 CFR 63.50 to 63.57, Subpart B).

(c) Along with the notice appearing in the North Carolina Register for a public hearing to amend this Rule to exclude a standard from this Rule, the Director shall state whether or not the national emission standard for hazardous air pollutants for source categories promulgated under 40 CFR Part 63, or part thereof, shall be enforced. If the Commission does not adopt the amendment to this Rule to exclude or amend the standard within 12 months after the close of the comment period on the proposed amendment, the Director shall begin enforcing that standard when 12 months has elapsed after the end of the comment period on the proposed amendment.

(d) New sources of volatile organic compounds that are located in an area designated in 40 CFR 81.334 as nonattainment for ozone or an area identified in accordance with 15A NCAC 02D .0902 as being in violation of the ambient air quality standard for ozone shall comply with the requirements of 40 CFR Part 63 that are not excluded by this Rule as well as with any applicable requirements in Section .0900 of this Subchapter.

(e) All requests, reports, applications, submittals, and other communications to the administrator required under Paragraph (a) of this Rule shall be submitted to the Director of the Division of Air Quality rather than to the Environmental Protection Agency; except that all such reports, applications, submittals, and other communications to the administrator required by 40 CFR Part 63, Subpart M for dry cleaners covered under Chapter 143, Article 21A, Part 6 of the General Statutes shall be submitted to the Director of the Division of Waste Management.

(f) In the application of this Rule, definitions contained in 40 CFR Part 63 shall apply rather than those of Section .0100 of this Subchapter when conflict exists.

(g) 15A NCAC 02Q .0102 and .0302 are not applicable to any source to which this Rule applies if the source is required to be permitted under 15A NCAC 02Q .0500, Title V Procedures. The owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or .0500. Sources that have heretofore been exempted from needing a permit and become subject to requirements promulgated under 40 CFR 63 shall apply for a permit in accordance to 15A NCAC 02Q .0109.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5); 150B-21.6;*
Eff. July 1, 1996;
Amended Eff. January 1, 2007; April 1, 1997.

15A NCAC 02D .1112 112(G) CASE BY CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

(a) Applicability. This Rule applies to the construction or reconstruction of major sources of hazardous air pollutants unless:
- (1) the major source has been specifically regulated or exempted from regulation under:
  - (A) Rule .1109 or .1111 of this Section; or
  - (B) a standard issued pursuant to Section 112(d), 112(h), or 112(j) of the federal Clean Air Act and incorporated in another Subpart of 40 CFR Part 63; or
- (2) the owner or operator of such major source has received all necessary air quality permits for such construction or reconstruction project before July 1, 1998.

(b) Exclusions. The requirements of this Rule shall not apply to:
- (1) electric utility steam generating units unless and until such time as these units are added to the source category list pursuant to Section 112(c)(5) of the federal Clean Air Act.
- (2) stationary sources that are within a source category that has been deleted from the source category list pursuant to Section 112(c)(9) of the federal Clean Air Act.
- (3) research and development activities.

(c) Definitions. For the purposes of this Rule, the following definitions apply:
- (1) "Affected source" means the stationary source or group of stationary sources that, when fabricated (on site), erected, or installed meets the definition of "construct a major source" or the definition of "reconstruct a major source" contained in this Paragraph.
- (2) "Affected States" means all States or local air pollution agencies whose areas of jurisdiction are:
  - (A) contiguous to North Carolina and located less than D=Q/12.5 from the facility, where:
    - (i) Q = emissions of the pollutant emitted at the highest permitted rate in tons per year, and
    - (ii) D = distance from the facility to the contiguous state or local air pollution control agency in miles; or
  - (B) within 50 miles of the permitted facility.
- (3) "Available information" means, for purposes of identifying control technology options for the affected source, information contained in the following information sources as of the date of approval of the MACT determination by the Division:
  - (A) a relevant proposed regulation, including all supporting information;
  - (B) background information documents for a draft or proposed regulation;
  - (C) data and information available from the Control Technology Center developed pursuant to Section 113 of the federal Clean Air Act;
  - (D) data and information contained in the Aerometric Informational Retrieval System including information in the MACT data base;
  - (E) any additional information that can be expeditiously provided by the Division and EPA; and
  - (F) for the purpose of determinations by the Division, any additional information provided by the applicant or others, and any additional information considered available by the Division.
- (4) "Construct a major source" means:
  - (A) To fabricate, erect, or install at any greenfield site a stationary source or group of stationary sources which is located within a contiguous area and under common control and which emits or has the potential to emit 10 tons per year of any HAP's or 25 tons per year of any combination of HAP, or
  - (B) To fabricate, erect, or install at any developed site a new process or production unit which in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, unless the process or production unit satisfies Subparts (i) through (vi) of this Paragraph:
    - (i) All HAP emitted by the process or production unit that would otherwise be controlled under the requirements of this Rule will be controlled by emission control equipment which was previously installed at the same site as the process or production unit;
    - (ii) The Division:
      - (I) has determined within a period of five years prior to the fabrication, erection, or installation of the process or production unit that the existing emission control equipment represented best available control technology (BACT) under Rule .0530 of this Subchapter or lowest achievable emission rate (LAER) under Rule .0531 of this Subchapter for the category of pollutants which includes those HAP's to be emitted by the process or production unit; or

(II) determines that the control of HAP emissions provided by the existing equipment will be equivalent to that level of control currently achieved by other well-controlled similar sources (i.e., equivalent to the level of control that would be provided by a current BACT, LAER, or MACT determination under Rule .1109 of this Section);

(iii) The Division determines that the percent control efficiency for emissions of HAP from all sources to be controlled by the existing control equipment will be equivalent to the percent control efficiency provided by the control equipment prior to the inclusion of the new process or production unit;

(iv) The Division has provided notice and an opportunity for public comment concerning its determination that criteria in Subparts (i), (ii), and (iii) of this Subparagraph apply and concerning the continued adequacy of any prior LAER, BACT, or MACT determination under Rule .1109 of this Section;

(v) If any commenter has asserted that a prior LAER, BACT, or MACT determination under Rule .1109 of this Section determination is no longer adequate, the Division has determined that the level of control required by that prior determination remains adequate; and

(vi) Any emission limitations, work practice requirements, or other terms and conditions upon which the above determinations by the Division are predicated will be construed by the Division as applicable requirements under Section 504(a) of the federal Clean Air Act and either have been incorporated into an existing permit issued under 15A NCAC 2Q .0500 for the affected facility or will be incorporated into such permit upon issuance.

(5) "Control technology" means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants including measures that:

(A) reduce the quantity of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modifications;

(B) enclose systems or processes to eliminate emissions;

(C) collect, capture or treat such pollutants when released from a process, stack, storage or fugitive emissions point;

(D) are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 U.S.C. 7412(h); or

(E) are a combination of Parts (A) through (D) of this definition.

(6) "Electric utility steam generating unit" means any fossil fuel fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A unit that co-generates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electric output to any utility power distribution system for sale shall be considered an electric utility steam generating unit.

(7) "Greenfield site" means a contiguous area under common control that is an undeveloped site.

(8) "HAP" means hazardous air pollutants.

(9) "Hazardous air pollutant" means any pollutant listed under Section 112(b) of the federal Clean Air Act.

(10) "List of source categories" means the source category list required by Section 112(c) of the federal Clean Air Act.

(11) "MACT" means maximum achievable control technology.

(12) "Maximum achievable control technology emission limitation for new sources" means the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of reduction in emissions that the permitting authority, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by the constructed or reconstructed major source.

(13) "Process or production unit" means any collection of structures or equipment, that processes, assembles, applies, or otherwise uses material inputs to produce or store an intermediate or final product. A single facility may contain more than one process or production unit.

(14) "Reconstruct a major source" means the replacement of components at an existing process or production unit that in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, whenever:

(A) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit; and

(B) It is technically and economically feasible for the reconstructed major source to meet the applicable maximum achievable control technology emission limitation for new sources established under this Subpart.

(15) "Research and development activities" means activities conducted at a research or laboratory facility whose primary purpose is to conduct research and development into new processes and products, where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for sale or exchange for commercial profit, except in a de minimis manner.

(16) "Similar source" means a stationary source or process that has comparable emissions and is structurally similar in design and capacity to a constructed or reconstructed major source such that the source could be controlled using the same control technology.

(d) Principles of MACT determinations. The following general principles shall be used to make a case-by-case MACT determination concerning construction or reconstruction of a major source under this Rule:

(1) The MACT emission limitation or MACT requirements recommended by the applicant and approved by the Division shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Division.

(2) Based upon available information, the MACT emission limitation and control technology (including any requirements under Subparagraph (3) of this Paragraph) recommended by the applicant and approved by the Division shall achieve the maximum degree of reduction in emissions of HAP that can be achieved by utilizing those control technologies that can be identified from the available information, taking into consideration the costs of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements associated with the emission reduction.

(3) The owner or operator may recommend a specific design, equipment, work practice, or operational standard, or a combination thereof, and the Director may approve such a standard if the Division specifically determines that it is not feasible to prescribe or enforce an emission limitation under the criteria set forth in Section 112(h)(2) of the federal Clean Air Act.

(4) If the EPA has either proposed a relevant emission standard pursuant to Section 112(d) or 112(h) of the federal Clean Air Act or adopted a presumptive MACT determination for the source category that includes the constructed or reconstructed major source, then the MACT requirements applied to the constructed or reconstructed major source shall have considered those MACT emission limitations and requirements of the proposed standard or presumptive MACT determination.

(e) Effective date of MACT determination. The effective date of a MACT determination shall be the date of issuance of a permit under procedures of 15A NCAC 2Q .0300 or .0500 incorporating a MACT determination.

(f) Compliance date. On and after the date of start-up, a constructed or reconstructed major source that is subject to the requirements of this Rule shall be in compliance with all applicable requirements specified in the MACT determination.

(g) Compliance with MACT determinations. The owner or operator of a constructed or reconstructed major source that:

(1) is subject to a MACT determination shall comply with all requirements set forth in the permit issued under 15A NCAC 2Q .0300 or .0500, including any MACT emission limitation or MACT work practice standard, and any notification, operation and maintenance, performance testing, monitoring, reporting, and recordkeeping requirements; or

(2) has obtained a MACT determination shall be deemed to be in compliance with Section 112(g)(2)(B) of the federal Clean Air Act only to the extent that the constructed or reconstructed major source is in compliance with all requirements set forth in the permit issued under 15A NCAC 2Q .0300 or .0500. Any violation of such requirements by the owner of operator shall be deemed by the Division and by EPA to be a violation of the prohibition on construction or reconstruction in Section 112(g)(2)(B) of the federal Clean Air Act for whatever period the owner or operator is determined to be in violation of such requirements, and shall subject the owner or operator to appropriate enforcement action under the General Statutes and the federal Clean Air Act.

(h) Requirements for constructed or reconstructed major sources subject to a subsequently promulgated MACT standard or MACT requirement. If EPA promulgates an emission standard under Section 112(d) or 112(h) of the federal Clean Air Act or the Division issues a determination under Rule .1109 of this Section that is applicable to a stationary source or group of sources that would be deemed to be a constructed or reconstructed major source under this Rule:

(1) before the date that the owner or operator has obtained a final and legally effective MACT determination under 15A NCAC 2Q .0300 or .0500, the owner or operator of the source(s) shall comply with the

promulgated standard or determination rather than any MACT determination under this Rule by the compliance date in the promulgated standard; or

(2) after the source has been subject to a prior case-by-case MACT under this Rule, and the owner or operator obtained a final and legally effective case-by-case MACT determination prior to the promulgation date of such emission standard, the Division shall (if the initial permit has not yet been issued under 15A NCAC 2Q .0500) issue an initial permit that incorporates the emission standard or determination, or shall (if the initial permit has been issued under 15A NCAC 2Q .0500) revise the permit according to the reopening procedures in 15A NCAC 2Q .0517, Reopening for Cause, whichever is relevant, to incorporate the emission standard or determination.

(i) Compliance with subsequent 112(d), 112(h),or 112(j) standards. EPA may include in the emission standard established under Section 112(d) or 112(h) of the federal Clean Air Act a specific compliance date for those sources that have obtained a final and legally effective MACT determination under this Rule and that have submitted the information required by 40 CFR 63.43 to EPA before the close of the public comment period for the standard established under section 112(d) of the federal Clean Air Act. Such date shall assure that the owner or operator shall comply with the promulgated standard as expeditiously as practicable, but not longer than eight years after such standard is promulgated. In that event, the Division shall incorporate the applicable compliance date in the permit issued under 15A NCAC 2Q .0500. If no compliance date has been established in the promulgated 112(d) or 112(h) standard or determination under Rule .1109 of this Section, for those sources that have obtained a final and legally effective MACT determination under this Rule, then the Director shall establish a compliance date in the permit that assures that the owner or operator shall comply with the promulgated standard or determination as expeditiously as practicable, but not longer than eight years after such standard is promulgated or a determination is made under Rule .1109 of this Section.

(j) Revision of permit to incorporate less stringent control. Notwithstanding the requirements of Paragraph (h) of this Rule, if the Administrator of EPA promulgates an emission standard under Section 112(d) or Section 112(h) of the federal Clean Air Act or the Division issues a determination under Rule .1109 of this Section that is applicable to a stationary source or group of sources that was deemed to be a constructed or reconstructed major source under this Rule and that is the subject of a prior case-by-case MACT determination pursuant to 40 CFR 63.43, and the level of control required by the emission standard issued under Section 112(d) or 112(h) or the determination issued under Rule .1109 of this Section is less stringent than the level of control required by any emission limitation or standard in the prior MACT determination, the Division is not required to incorporate any less stringent terms of the promulgated standard in the permit issued under 15A NCAC 2Q .0500 applicable to such source(s) and may consider any more stringent provisions of the prior MACT determination to be applicable legal requirements when issuing or revising such an operating permit.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5),(10);*
Eff. July 1, 1998.

SECTION .0700 - TOXIC AIR POLLUTANT PROCEDURES

15A NCAC 02Q .0701 APPLICABILITY

(a) With the exceptions in Rule .0702 of this Section, no person shall cause or allow any toxic air pollutant named in 15A NCAC 02D .1104 to be emitted from any facility into the atmosphere at a rate that exceeds the applicable rate(s) in Rule .0711 of this Section without having received a permit to emit toxic air pollutants as follows:

(1) new facilities according to Rule .0704 of this Section;
(2) existing facilities according to Rule .0705 of this Section;
(3) modifications according to Rule .0706 of this Section.

(b) The Division shall assess risks from all existing exempt combustion sources using exposure and risk assessment methodologies and information and report findings to the EMC no later than July 1, 2014, and every five years thereafter. Based on these findings, the EMC shall determine if amendments to this Section are appropriate and necessary.

(c) Facilities required to comply with MACT standards under 15A NCAC 02D .1109, .1111, or .1112 or 40 CFR Part 63 shall be deemed in compliance with this Subchapter and 15A NCAC 02D .1100 unless the Division determines that modeled emissions result in one or more acceptable ambient levels in 15A NCAC 02D .1104 being exceeded. This review shall be made according to the procedures in 15A NCAC 02D .1106. Once a facility demonstrates compliance with the acceptable ambient levels in 15A NCAC 02D .1104, future demonstrations shall only be required on a five-year basis. When an acceptable ambient level for a toxic air pollutant in 15A NCAC 02D .1104 is changed, any condition that has previously been put in a permit to protect the previous acceptable ambient level for that toxic air pollutant shall not be changed until the permit is renewed, at which time the owner or operator of the facility shall submit an air toxic evaluation showing that the new acceptable ambient level will not be exceeded.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; February 1, 2005.

15A NCAC 02Q .0702 EXEMPTIONS

(a) A permit to emit toxic air pollutants shall not be required under this Section for:

(1) residential wood stoves, heaters, or fireplaces;

(2) hot water heaters that are used for domestic purposes only and are not used to heat process water;

(3) maintenance, structural changes, or repairs that do not change capacity of that process, fuel-burning, refuse-burning, or control equipment, and do not involve any change in quality or nature or increase in quantity of emission of any regulated air pollutant or toxic air pollutant;

(4) housekeeping activities or building maintenance procedures, including painting buildings, resurfacing floors, roof repair, washing, portable vacuum cleaners, sweeping, use and associated storage of janitorial products, or non-asbestos bearing insulation removal;

(5) use of office supplies, supplies to maintain copying equipment, or blueprint machines;

(6) paving parking lots;

(7) replacement of existing equipment with equipment of the same size, type, and function if the new equipment:

(A) does not result in an increase to the actual or potential emissions of any regulated air pollutant or toxic air pollutant;

(B) does not affect compliance status; and

(C) fits the description of the existing equipment in the permit, including the application, such that the replacement equipment can be operated under that permit without any changes to the permit;

(8) comfort air conditioning or comfort ventilation systems that do not transport, remove, or exhaust regulated air pollutants to the atmosphere;

(9) equipment used for the preparation of food for direct on-site human consumption;

(10) non-self-propelled non-road engines, except generators, regulated by rules adopted under Title II of the federal Clean Air Act;

(11) stacks or vents to prevent escape of sewer gases from domestic waste through plumbing traps;

(12) use of fire fighting equipment;

(13) the use for agricultural operations by a farmer of fertilizers, pesticides, or other agricultural chemicals containing one or more of the compounds listed in 15A NCAC 02D .1104 if such compounds are applied according to agronomic practices acceptable to the North Carolina Department of Agriculture;

(14) asbestos demolition and renovation projects that comply with 15A NCAC 02D .1110 and that are being done by persons accredited by the Department of Health and Human Services under the Asbestos Hazard Emergency Response Act;

(15) incinerators used only to dispose of dead animals or poultry as identified in 15A NCAC 02D .1201(c)(4) or incinerators used only to dispose of dead pets as identified in 15A NCAC 02D .1208(a)(2)(A);

(16) refrigeration equipment that is consistent with Section 601 through 618 of Title VI (Stratospheric Ozone Protection) of the federal Clean Air Act, 40 CFR Part 82, and any other regulations promulgated by EPA under Title VI for stratospheric ozone protection, except those units used as or with air pollution control equipment;

(17) laboratory activities:

(A) bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments;

(B) bench scale experimentation, chemical or physical analyses, training or instruction from nonprofit, non-production educational laboratories;

(C) bench scale experimentation, chemical or physical analyses, training or instruction from hospital or health laboratories pursuant to the determination or diagnoses of illnesses; and

(D) research and development laboratory activities that are not required to be permitted under Section .0500 of this Subchapter provided the activity produces no commercial product or feedstock material;

(18) combustion sources as defined in 15A NCAC 02Q .0703 except new or modified combustion sources permitted on or after July 10, 2010.

The DAQ shall review and recommend to the EMC no later than July 1, 2014, and every five years thereafter, whether the exemption shall remain in place or be removed.

(19) storage tanks used only to store:
  (A) inorganic liquids with a true vapor pressure less than 1.5 pounds per square inch absolute;
  (B) fuel oils, kerosene, diesel, crude oil, used motor oil, lubricants, cooling oils, natural gas, liquefied petroleum gas, or petroleum products with a true vapor pressure less than 1.5 pounds per square inch absolute;

(20) dispensing equipment used solely to dispense diesel fuel, kerosene, lubricants or cooling oils;

(21) portable solvent distillation systems that are exempted under 15A NCAC 02Q .0102(c)(1)(I).

(22) processes:
  (A) electric motor burn-out ovens with secondary combustion chambers or afterburners;
  (B) electric motor bake-on ovens;
  (C) burn-off ovens for paint-line hangers with afterburners;
  (D) hosiery knitting machines and associated lint screens, hosiery dryers and associated lint screens, and hosiery dyeing processes where bleach or solvent dyes are not used;
  (E) blade wood planers planing only green wood;
  (F) saw mills that saw no more than 2,000,000 board feet per year provided only green wood is sawed;
  (G) perchloroethylene drycleaning processes with 12-month rolling total consumption of:
    (i) less than 1366 gallons of perchloroethylene per year for facilities with dry-to-dry machines only;
    (ii) less than 1171 gallons of perchloroethylene per year for facilities with transfer machines only; or
    (iii) less than 1171 gallons of perchloroethylene per year for facilities with both transfer and dry-to-dry machines;

(23) wood furniture manufacturing operations as defined in 40 CFR 63.801(a) that comply with the emission limitations and other requirements of 40 CFR Part 63 Subpart JJ, provided that the terms of this exclusion shall not affect the authority of the Director under 15A NCAC 02Q .0712;

(24) wastewater treatment systems at pulp and paper mills for hydrogen sulfide and methyl mercaptan only;

(25) gasoline dispensing facilities or gasoline service station operations that comply with 15A NCAC 02D .0928 and .0932 and that receive gasoline from bulk gasoline plants or bulk gasoline terminals that comply with 15A NCAC 02D .0524, .0925, .0926, .0927, .0932, and .0933 via tank trucks that comply with 15A NCAC 02D .0932;

(26) the use of ethylene oxide as a sterilant in the production and subsequent storage of medical devices or the packaging and subsequent storage of medical devices for sale if the emissions from all new and existing sources at the facility described in 15A NCAC 02D .0538(d) are controlled at least to the degree described in 15A NCAC 02D .0538(d) and the facility complies with 15A NCAC 02D .0538(e) and (f);

(27) bulk gasoline plants, including the storage and handling of fuel oils, kerosenes, and jet fuels but excluding the storage and handling of other organic liquids, that comply with 15A NCAC 02D .0524, .0925, .0926, .0932, and .0933; unless the Director finds that a permit to emit toxic air pollutants is required under Paragraph (b) of this Rule or Rule .0712 of this Section for a particular bulk gasoline plant; or

(28) bulk gasoline terminals, including the storage and handling of fuel oils, kerosenes, and jet fuels but excluding the storage and handling of other organic liquids, that comply with 15A NCAC 02D .0524, .0925, .0927, .0932, and .0933 if the bulk gasoline terminal existed before November 1, 1992; unless:
  (A) the Director finds that a permit to emit toxic air pollutants is required under Paragraph (b) of this Rule or Rule .0712 of this Section for a particular bulk gasoline terminal, or
  (B) the owner or operator of the bulk gasoline terminal meets the requirements of 15A NCAC 02D .0927(i).

(b) Emissions from the activities identified in Subparagraphs (a)(25) through (a)(28) of this Rule shall be included in determining compliance with the toxic air pollutant requirements in this Section and shall be included in the permit if necessary to assure compliance. Emissions from the activities identified in Subparagraphs (a)(1) through (a)(24) of this Rule shall not be included in determining compliance with the toxic air pollutant requirements in this Section.

(c) The addition or modification of an activity identified in Paragraph (a) of this Rule shall not cause the source or facility to be evaluated for emissions of toxic air pollutants.

(d) Because an activity is exempted from being required to have a permit does not mean that the activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; April 1, 2005; July 1, 2002; July 1, 2000.

15A NCAC 02Q .0703 DEFINITIONS

For the purposes of this Section, the following definitions apply:

(1) "Actual rate of emissions" means:

(a) for existing sources:

(i) for toxic air pollutants with an annual averaging period, the average rate or rates at which the source actually emitted the pollutant during the two-year period preceding the date of the particular modification and that represents normal operation of the source. If this period does not represent normal operation, the Director may allow the use of a different, more representative, period.

(ii) for toxic air pollutants with a 24-hour or one-hour averaging period, the maximum actual emission rate at which the source actually emitted for the applicable averaging period during the two-year period preceding the date of the particular modification and that represents normal operation of the source. If this period does not represent normal operation, the Director may require or allow the use of a different, more representative, period.

(b) for new or modified sources, the average rate or rates, determined for the applicable averaging period(s), that the proposed source will actually emit the pollutant as determined by engineering evaluation.

(2) "Applicable averaging period" means the averaging period for which an acceptable ambient limit has been established by the Commission and is listed in 15A NCAC 02D .1104.

(3) "Bioavailable chromate pigments" means the group of chromium (VI) compounds consisting of calcium chromate (CAS No.13765-19-0), calcium dichromate (CAS No. 14307-33-6), strontium chromate (CAS No. 7789-06-2), strontium dichromate (CAS No. 7789-06-2), zinc chromate (CAS No. 13530-65-9), and zinc dichromate (CAS No. 7789-12-0).

(4) "CAS Number" means the Chemical Abstract Service registry number identifying a particular substance.

(5) "Chromium (VI) equivalent" means the molecular weight ratio of the chromium (VI) portion of a compound to the total molecular weight of the compound multiplied by the associated compound emission rate or concentration at the facility.

(6) "Combustion sources" means boilers, space heaters, process heaters, internal combustion engines, and combustion turbines, which burn only unadulterated wood or unadulterated fossil fuel. It does not include incinerators, waste combustors, kilns, dryers, or direct heat exchange industrial processes.

(7) "Creditable emissions" means actual decreased emissions that have not been previously relied on to comply with Subchapter 15A NCAC 02D. All creditable emissions shall be enforceable by permit condition.

(8) "Cresol" means o-cresol, p-cresol, m-cresol, or any combination of these compounds.

(9) "Evaluation" means:

(a) a determination that the emissions from the facility, including emissions from sources exempted by Rule .0702 (a) (24) through (27) of this Section, are less than the rate listed in Rule .0711 of this Section; or

(b) a determination of ambient air concentrations as described under 15A NCAC 02D .1106, including emissions from sources exempted by Rule .0702 (24) through (27) of this Section.

(10) "GACT" means any generally available control technology emission standard applied to an area source or facility pursuant to Section 112 of the federal Clean Air Act.

(11) "Hexane isomers except n-hexane" means 2-methyl pentane, 3-methyl pentane, 2,2-dimethyl butane, 2,3-dimethyl butane, or any combination of these compounds.

(12) "MACT" means any maximum achievable control technology emission standard applied to a source or facility pursuant to Section 112 federal Clean Air Act.

(13) "Maximum feasible control" means the maximum degree of reduction for each pollutant subject to regulation under this Section using the best technology that is available taking into account, on a case-by-case basis, human health, energy, environmental, and economic impacts and other costs.

(14) "Modification" means any physical changes or changes in the methods of operation that result in a net increase in emissions or ambient concentration of any pollutant listed in Rule .0711 of this Section or that result in the emission of any pollutant listed in Rule .0711 of this Section not previously emitted.

(15) "Net increase in emissions" means for a modification the sum of any increases in permitted allowable and decreases in the actual rates of emissions from the proposed modification from the sources at the facility for which the air permit application is being filed. If the net increase in emissions from the proposed modification is greater than zero, all other increases in permitted allowable and decreases in the actual rates of emissions at the facility within five years immediately preceding the filing of the air permit application for the proposed modification that are otherwise creditable emissions may be included.

(16) "Nickel, soluble compounds" means the soluble nickel salts of chloride ($NiCl_2$, CAS No. 7718-54-9), sulfate ($NiSO_4$, CAS No. 7786-81-4), and nitrate ($Ni(NO_3)_2$, CAS No. 13138-45-9).

(17) "Non-specific chromium (VI) compounds" means the group of compounds consisting of any chromium (VI) compounds not specified in this Section as a bioavailable chromate pigment or a soluble chromate compound.

(18) "Polychlorinated biphenyls" means any chlorinated biphenyl compound or mixture of chlorinated biphenyl compounds.

(19) "Pollution prevention plan" means a written description of current and projected plans to reduce, prevent, or minimize the generation of pollutants by source reduction and recycling and includes a site-wide assessment of pollution prevention opportunities at a facility that addresses sources of air pollution, water pollution, and solid and hazardous waste generation.

(20) "SIC" means standard industrial classification code.

(21) "Soluble chromate compounds" means the group of chromium (VI) compounds consisting of ammonium chromate (CAS No. 7788-98-9), ammonium dichromate (CAS No. 7789-09-5), chromic acid (CAS No. 7738-94-5), potassium chromate (CAS No. 7789-00-6), potassium dichromate (CAS No. 7778-50-9), sodium chromate (CAS No. 7775-11-3), and sodium dichromate (CAS No. 10588-01-9).

(22) "Toxic air pollutant" means any of those carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants listed in 15A NCAC 02D .1104.

(23) "Unadulterated wood" means wood that is not painted, varnished, stained, oiled, waxed, or otherwise coated or treated with any chemical. Plywood, particle board, and resinated wood are not unadulterated wood.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. April 1, 2001.

15A NCAC 02Q .0704 NEW FACILITIES

(a) This Rule applies only to facilities that begin construction after September 30, 1993.

(b) The owner or operator of a facility that:

(1) is required to have a permit because of applicability of a Section in Subchapter 2D of this Chapter other than Section .1100 of Subchapter 2D of this Chapter except for facilities whose emissions of toxic air pollutants result only from sources exempted under Rule .0102 of this Subchapter;

(2) has one or more sources subject to a MACT or GACT standard that has previously been promulgated under Section 112(d) of the federal Clean Air Act or established under Section 112(e) or 112(j) of the Clean Air Act; or

(3) has a standard industrial classification code that has previously been called under Rule .0705 of this Section;

shall have received a permit to emit toxic air pollutants before beginning construction, and shall comply with such permit when beginning operation.

(c) The owner or operator of a facility subject to this Rule who has not received a permit to emit toxic air pollutants under Paragraph (b) of this Rule shall apply for a permit to emit toxic air pollutants according to Paragraph (b) or (c) of Rule .0705 of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0705 EXISTING FACILITIES AND SIC CALLS

(a) This Rule applies only to facilities that were in operation or permitted to construct before October 1, 1993 and new facilities subject to Rule .0704(c) of this Section.

(b) For sources at a facility subject to a MACT or GACT standard, or that may be subject to a MACT or GACT standard based on studies required by Section 112(n)(1) of the Clean Air Act, 42 U.S.C. Section 7412(n)(1), the owner or operator of the facility shall comply with 15A NCAC 2D .1100 as follows:

(1) When the owner or operator submits a permit application to comply with the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility, he shall also submit a permit application to comply with 15A NCAC 2D .1100. The facility shall comply with 15A NCAC 2D .1100 by the same deadline that it is required to comply with the last MACT or GACT.

(2) If the owner or operator does not have to submit a permit application to comply with the last MACT or GACT, excluding the MACT or GACT for combustion sources, he shall submit a permit application to comply with 15A NCAC 2D .1100 within six months after the promulgation of the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility or by January 1, 1999, whichever is later. The facility shall comply with 15A NCAC 2D .1100 by the same deadline that it is required to comply with the last MACT or GACT.

(3) If the owner or operator submitted a permit application for the last MACT or GACT, excluding the MACT or GACT for combustion sources, known to apply to the facility before July 1, 1998, he shall submit a permit application to comply with 15A NCAC 2D .1100 by January 1, 1999. The facility shall comply with 15A NCAC 2D .1100 within three years from the date that the permit is issued.

The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding those sources exempt from evaluation under Rule .0702 of this Section. The owner or operator of a facility whose actual rate of emissions from all sources are not greater than the toxic permitting emissions rates listed in Rule .0711 of this Section does not have to file a permit application to comply with 15A NCAC 2D .1100. He shall provide documentation that the facility=s emissions of toxic air pollutants are below the levels in Rule .0711 of this Section if the Director requests this documentation.

(c) For facilities that will not be subject to a MACT or GACT standard, or that will be subject only to a MACT or GACT standard for unadulterated fuel combustion sources, the owner or operator of the facility shall have 180 days to apply for a permit or permit modification for the emissions of toxic air pollutants after receiving written notification from the Director that such permit or permit modification is required. The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section. Such facilities shall comply with 15A NCAC 2D .1100 within three years from the date that the permit is issued. The Director shall notify facilities subject to this Paragraph by calling for permit applications based on standard industrial classifications, that is, the Director shall call at one time for permits for all facilities statewide that have the same four-digit standard industrial classification code, except those facilities in certified local air pollution control agency areas. (Local air pollution control agencies shall call the standard industrial classification code within their jurisdiction when the Director calls that code. A local air pollution control agency may call a particular standard industrial classification code before the Director calls that code if the Commission approves the call by the local air pollution control agency. In deciding if it shall grant permission to a local air pollution control agency to call a particular standard industrial classification code before the Director calls that code, the Commission shall consider if the call is necessary to protect human health or to allow the local program to better implement these Rules in its jurisdiction.) Facilities with sources that will be subject to MACT that receive an SIC call shall notify the Director and shall comply with 15 NCAC 2D .1100 in accordance with Paragraph (b) of this Rule. All sources, regardless of their standard industrial classification code, excluding sources exempt from evaluation in Rule .0702 of this Section, at the facility shall be included in the call for permit applications. When the Environmental Protection Agency (EPA) promulgates MACT under Section 112(e) of the federal Clean Air Act, excluding cooling towers, the Director shall notify the owners or operators of facilities in the standard industrial classification that best corresponds to the MACT category that they are required to submit a permit application for the emissions of toxic air pollutants from their facilities. If the EPA fails to promulgate a MACT as scheduled, the Director shall notify the owners or operators of facilities 18 months after the missed promulgation date that they are required to submit a permit application for the emissions of toxic air pollutants from their facilities. The owner or operator of a facility whose actual rate of emissions from all sources are not greater than the toxic permitting emissions rates listed in Rule .0711 of this Section does not have to file a permit application to comply with 15A NCAC 2D .1100. He shall provide documentation that the facility=s emissions of toxic air pollutants are below the levels in Rule .0711 of this Section if the Director requests this documentation. The Director may request this documentation if he finds that the facility's potential emissions of toxic air pollutants are above the levels in Rule .0711 of this Section.

(d) The owner or operator of a facility may request a permit to emit toxic air pollutants any time before such application is required. The permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0706 MODIFICATIONS

(a) For modification of any facility undertaken after September 30, 1993, that:

(1) is required to have a permit because of applicability of a Section, other than Section .1100, in Subchapter 02D of this Chapter except for facilities whose emissions of toxic air pollutants result only from insignificant activities as defined in 15A NCAC 02Q .0103(20) or sources exempted under Rule .0102 of this Subchapter;

(2) has one or more sources subject to a MACT or GACT standard that has previously been promulgated under Section 112(d) of the federal Clean Air Act or established under Section 112(e) or 112(j) of the Clean Air Act; or

(3) has a standard industrial classification code that has previously been called under Rule .0705 of this Section;

the owner or operator of the facility shall comply with Paragraphs (b) and (c) of this Rule.

(b) The owner or operator of the facility shall submit a permit application to comply with 15A NCAC 02D .1100 if the modification results in:

(1) a net increase in emissions or ambient concentration of any toxic air pollutant that the facility was emitting before the modification; or

(2) emissions of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in Rule .0711 of this Section.

(c) The permit application filed pursuant to this Rule shall include an evaluation for all toxic air pollutants covered under 15A NCAC 02D .1104 for which there is:

(1) a net increase in emissions of any toxic air pollutant that the facility was emitting before the modification; and

(2) emission of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in Rule .0711 of this Section.

All sources at the facility, excluding sources exempt from evaluation in Rule .0702 of this Section, emitting these toxic air pollutants shall be included in the evaluation. Notwithstanding 02Q .0702(a)(18), on and after July 10, 2010, an evaluation of a modification to a combustion source shall also include emissions from all permitted combustion sources as defined in 02Q .0703. A permit application filed pursuant to Subparagraph (b)(2) of this Rule shall include an evaluation for all toxic air pollutants identified by the Director as causing an acceptable ambient level in 15A NCAC 02D .1104 to be exceeded.

(d) If a source is included in an air toxic evaluation, but is not the source that is being added or modified at the facility, and if the emissions from this source must be reduced in order for the facility to comply with the rules in this Section and 15A NCAC 02D .1100, then the emissions from this source shall be reduced by the time that the new or modified source begins operating such that the facility shall be in compliance with the rules in this Section and 15A NCAC 02D .1100.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, C. 168, S. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; December 1, 2005; April 1, 2005.

15A NCAC 02Q .0707 PREVIOUSLY PERMITTED FACILITIES

Any facility with a permit that contains a restriction based on the evaluation of a source exempted under Rule .0702 of this Section may request a permit modification to adjust the restriction by removing from consideration the portion of emissions resulting from the exempt source unless the Director determines that the removal of the exempt source will result in an acceptable ambient level in 15A NCAC 2D .1104 being exceeded. The Director shall modify the permit to remove the applicability of the air toxic rules to the exempt source. No fee shall be charged solely for such permit modification.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0708 COMPLIANCE SCHEDULE FOR PREVIOUSLY UNKNOWN TOXIC AIR POLLUTANT EMISSIONS

(a) The owner or operator of a facility permitted to emit toxic air pollutants shall submit a permit application within six months after the owner or operator learns of an emission of a previously unknown toxic air pollutant from a permitted source that would have been included in the permit when it was issued. The application shall include the information required by Paragraph (b) of this Rule.

(b) When an application to revise a permit is submitted under this Rule, the owner or operator shall in addition to the application, submit to the Director:

(1) an evaluation for the pollutant according to this Section and 15 NCAC 2D .1100 that demonstrates compliance with the acceptable ambient level in 15A NCAC 2D .1104; or

(2) a compliance schedule containing the information required under Paragraph (c) of this Rule for the proposed modifications to the facility required to comply with the acceptable ambient level according to this Section and Section 15A NCAC 2Q .1100.

(c) The compliance schedule required under Subparagraph (b)(2) of this Rule shall contain the following increments of progress as applicable:

(1) a date by which contracts for emission control and process equipment shall be awarded or orders shall be issued for the purchase of component parts;

(2) a date by which on-site construction or installation of the emission control and process equipment shall begin;

(3) a date by which on-site construction or installation of the emission control and process equipment shall be completed; and

(4) the date by which final compliance shall be achieved.

(d) Final compliance shall be achieved no later than:

(1) six months after the permit modification or renewal is issued if construction or installation of emission control or process equipment is not required;

(2) one year after the permit modification or renewal is issued if construction or installation of emission control or process equipment is required; or

(3) the time that is normally required to construct a stack or install other dispersion enhancement modifications but not more than one year after the permit modification or renewal is issued.

(e) The owner or operator shall certify to the Director within 10 days after each applicable deadline for each increment of progress required under Paragraph (c) of this Rule whether the required increment of progress has been met.

History Note: *Authority G.S. 143-215.3(a)(1); 43-215.107(a)(3),(5); 143B-282; S.L. 1989, c. 168, s. 45; Eff. July 1, 1998.*

15A NCAC 02Q .0709 DEMONSTRATIONS

(a) Demonstrations. The owner or operator of a source who is applying for a permit or permit modification to emit toxic air pollutants shall:

(1) demonstrate to the satisfaction of the Director through dispersion modeling that the emissions of toxic air pollutants from the facility will not cause any acceptable ambient level listed in 15A NCAC 02D .1104 to be exceeded beyond the premises (adjacent property boundary); or

(2) demonstrate to the satisfaction of the Commission or its delegate that the ambient concentration beyond the premises (adjacent property boundary) for the subject toxic air pollutant shall not adversely affect human health (e.g., a risk assessment specific to the facility) though the concentration is higher than the acceptable ambient level in 15A NCAC 02D .1104 by providing one of the following demonstrations:

(A) the area where the ambient concentrations are expected to exceed the acceptable ambient levels in 15A NCAC 02D .1104 is not inhabitable or occupied for the duration of the averaging time of the pollutant of concern, or

(B) new toxicological data that show that the acceptable ambient level in 15A NCAC 02D .1104 for the pollutant of concern is too low and the facility's ambient impact is below the level indicated by the new toxicological data.

(b) Technical Infeasibility and Economic Hardship. This Paragraph shall not apply to any incinerator covered under 15A NCAC 02D .1200. The owner or operator of any source constructed before May 1, 1990, or a perchloroethylene dry cleaning facility subject to a GACT standard under 40 CFR 63.320 through 63.325, or a combustion source as defined in Rule .0703 of this Section permitted before July 10, 2010, who cannot supply a demonstration described in Paragraph (a) of this Rule shall:

(1) demonstrate to the satisfaction of the Commission or its delegate that complying with the guidelines in 15A NCAC 02D .1104 is technically infeasible (the technology necessary to reduce emissions to a level to prevent the acceptable ambient levels in 15A NCAC 02D .1104 from being exceeded does not exist); or

(2) demonstrate to the satisfaction of the Commission or its delegate that complying with the guidelines in 15A NCAC 02D .1104 would result in serious economic hardship. (In deciding if a serious economic hardship exists, the Commission or its delegate shall consider market impact; impacts on local, regional and state economy; risk of closure; capital cost of compliance; annual incremental compliance cost; and environmental and health impacts.)

If the owner or operator makes a demonstration to the satisfaction of the Commission or its delegate pursuant to Subparagraphs (1) or (2) of this Paragraph, the Director shall require the owner or operator of the source to apply maximum feasible control. Maximum feasible control shall be in place and operating within three years from the date that the permit is issued for the maximum feasible control.

(c) Pollution Prevention Plan. The owner or operator of any facility using the provisions of Part (a)(2)(A) or Paragraph (b) of this Rule shall develop and implement a pollution prevention plan consisting of the following minimum elements:

(1) statement of corporate and facility commitment to pollution prevention;

(2) identification of current and past pollution prevention activities;

(3) timeline and strategy for implementation;

(4) description of ongoing and planned employee education efforts;

(5) identification of internal pollution prevention goal selected by the facility and expressed in either qualitative or quantitative terms.

The facility shall submit along with the permit application the pollution prevention plan. The pollution prevention plan shall be maintained on site. A progress report on implementation of the plan shall be prepared by the facility annually and be made available to Division personnel for review upon request.

(d) Modeling Demonstration. If the owner or operator of a facility demonstrates by modeling that no toxic air pollutant emitted from the facility exceeds the acceptable ambient level values given in 15A NCAC 02D .1104 beyond the facility's premises, further modeling demonstration is not required with the permit application. However, the Commission may still require more stringent emission levels according to its analysis under 15A NCAC 02D .1107.

(e) Change in Acceptable Ambient Level. When an acceptable ambient level for a toxic air pollutant in 15A NCAC 02D .1104 is changed, any condition that has previously been put in a permit to protect the previous acceptable ambient level for that toxic air pollutant shall not be changed until:

(1) The permit is renewed, at which time the owner or operator of the facility shall submit an air toxic evaluation showing that the new acceptable ambient level will not be exceeded (If additional time is

needed to bring the facility into compliance with the new acceptable ambient level, the owner or operator shall negotiate a compliance schedule with the Director. The compliance schedule shall be written into the facility's permit and final compliance shall not exceed two years from the effective date of the change in the acceptable ambient level.): or

(2) The owner or operator of the facility requests that the condition be changed and submits along with that request an air toxic evaluation showing that the new acceptable ambient level shall not be exceeded.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998;
Amended Eff. July 10, 2010; February 1, 2005.

15A NCAC 02Q .0710 PUBLIC NOTICE AND OPPORTUNITY FOR PUBLIC HEARING

(a) If the owner or operator of a facility chooses to make a demonstration pursuant to Rule .0709 (a)(2) or (b) of this Section, the Commission or its delegate shall approve or disapprove the permit after a public notice with an opportunity for a public hearing.

(b) The public notice shall be given by publication in a newspaper of general circulation in the area where the facility is located and shall be mailed to persons who are on the Division's mailing list for air quality permit notices.

(c) The public notice shall identify:

(1) the affected facility;
(2) the name and address of the permittee;
(3) the name and address of the person to whom to send comments and requests for public hearing;
(4) the name, address, and telephone number of a Divisional staff person from whom interested persons may obtain additional information, including copies of the draft permit, the application, compliance plan, pollution prevention plan, monitoring and compliance reports, all other relevant supporting materials, and all other materials available to the Division that are relevant to the permit decision;
(5) the activity or activities involved in the permit action;
(6) any emissions change involved in any permit modification;
(7) a brief description of the public comment procedures;
(8) the procedures to follow to request a public hearing unless a public hearing has already been scheduled; and
(9) the time and place of any hearing that has already been scheduled.

(d) The notice shall allow at least 30 days for public comments.

(e) If the Director determines that significant public interest exists or that the public interest will be served, the Director shall require a pubic hearing to be held on a draft permit. Notice of a public hearing shall be given at least 30 days before the public hearing.

(f) The Director shall make available for public inspection in at least one location in the region affected, the information submitted by the permit applicant and the Division=s analysis of that application.

(g) Any persons requesting copies of material identified in Subparagraph (b)(4) of this Rule shall pay ten cents ($0.10) a page for each page copied. Confidential material shall be handled in accordance with Rule .0107 of this Subchapter.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0711 EMISSION RATES REQUIRING A PERMIT

(a) A permit to emit toxic air pollutants is required for any facility whose actual (or permitted if higher) rate of emissions from all sources are greater than any one of the following toxic air pollutant permitting emissions rates:

Pollutant (CAS Number)	Carcinogens lb/yr	Chronic Toxicants lb/day	Acute Systemic Toxicants lb/hr	Acute Irritants lb/hr
acetaldehyde (75-07-0)				6.8
acetic acid (64-19-7)				0.96
acrolein (107-02-8)				0.02
acrylonitrile (107-13-1)		0.4	0.22	
ammonia (7664-41-7)				0.68
aniline (62-53-3)			0.25	
arsenic and inorganic arsenic compounds	0.016			
asbestos (1332-21-4)	1.9×10^{-6}			
aziridine (151-56-4)		0.13		
benzene (71-43-2)	8.1			
benzidine and salts (92-87-5)	0.0010			
benzo(a)pyrene (50-32-8)	2.2			
benzyl chloride (100-44-7)			0.13	
beryllium (7440-41-7)	0.28			
beryllium chloride (7787-47-5)	0.28			
beryllium fluoride (7787-49-7)	0.28			
beryllium nitrate (13597-99-4)	0.28			
bioavailable chromate pigments, as chromium (VI) equivalent	0.0056			
bis-chloromethyl ether (542-88-1)	0.025			
bromine (7726-95-6)				0.052
1,3-butadiene (106-99-0)	11			
cadmium (7440-43-9)	0.37			
cadmium acetate (543-90-8)	0.37			
cadmium bromide (7789-42-6)	0.37			
carbon disulfide (75-15-0)		3.9		
carbon tetrachloride (56-23-5)	460			
chlorine (7782-50-5)		0.79		0.23
chlorobenzene (108-90-7)		46		
chloroform (67-66-3)	290			
chloroprene (126-99-8)		9.2	0.89	
cresol (1319-77-3)			0.56	
p-dichlorobenzene (106-46-7)				16.8
dichlorodifluoromethane (75-71-8)		5200		
dichlorofluoromethane (75-43-4)		10		
di(2-ethylhexyl)phthalate (117-81-7)		0.63		
dimethyl sulfate (77-78-1)		0.063		
1,4-dioxane (123-91-1)		12		
epichlorohydrin (106-89-8)	5600			
ethyl acetate (141-78-6)			36	
ethylenediamine (107-15-3)		6.3	0.64	
ethylene dibromide (106-93-4)	27			
ethylene dichloride (107-06-2)	260			
ethylene glycol monoethyl ether (110-80-5)		2.5	0.48	

ethylene oxide (75-21-8)	1.8			
ethyl mercaptan (75-08-1)			0.025	
fluorides		0.34	0.064	
formaldehyde (50-00-0)				0.04
hexachlorocyclopentadiene (77-47-4)		0.013	0.0025	
hexachlorodibenzo-p-dioxin (57653- 85-7)	0.0051			
n-hexane (110-54-3)		23		
hexane isomers except n-hexane				92
hydrazine (302-01-2)		0.013		
hydrogen chloride (7647-01-0)				0.18
hydrogen cyanide (74-90-8)		2.9	0.28	
hydrogen fluoride (7664-39-3)		0.63		0.064
hydrogen sulfide (7783-06-4)		1.7		
maleic anhydride (108-31-6)		0.25	0.025	
manganese and compounds		0.63		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		0.013		
manganese tetroxide (1317-35-7)		0.13		
mercury, alkyl		0.0013		
mercury, aryl and inorganic compounds		0.013		
mercury, vapor (7439-97-6)		0.013		
methyl chloroform (71-55-6)		250		64
methylene chloride (75-09-2)	1600		0.39	
methyl ethyl ketone (78-93-3)		78		22.4
methyl isobutyl ketone (108-10-1)		52		7.6
methyl mercaptan (74-93-1)			0.013	
nickel carbonyl (13463-39-3)		0.013		
nickel metal (7440-02-0)		0.13		
nickel, soluble compounds, as nickel		0.013		
nickel subsulfide (12035-72-2)	0.14			
nitric acid (7697-37-2)				0.256
nitrobenzene (98-95-3)		1.3	0.13	
n-nitrosodimethylamine (62-75-9)	3.4			
non-specific chromium (VI) compounds, as chromium (VI) equivalent	0.0056			
pentachlorophenol (87-86-5)		0.063	0.0064	
perchloroethylene (127-18-4)	13000			
phenol (108-95-2)			0.24	
phosgene (75-44-5)		0.052		
phosphine (7803-51-2)				0.032
polychlorinated biphenyls (1336-36- 3)	5.6			
soluble chromate compounds, as chromium (VI) equivalent		0.013		
styrene (100-42-5)			2.7	
sulfuric acid (7664-93-9)		0.25	0.025	
tetrachlorodibenzo-p-dioxin (1746- 01-6)	0.00020			
1,1,1,2-tetrachloro-2,2,- difluoroethane (76-11-9)		1100		
1,1,2,2-tetrachloro-1,2- difluoroethane (76-12-0)		1100		
1,1,2,2-tetrachloroethane (79-34-5)	430			
toluene (108-88-3)		98		14.4

toluene diisocyanate,2,4-(584-84-9) and 2,6- (91-08-7) isomers		0.003		
trichloroethylene (79-01-6)	4000			
trichlorofluoromethane (75-69-4)			140	
1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)				240
vinyl chloride (75-01-4)	26			
vinylidene chloride (75-35-4)		2.5		
xylene (1330-20-7)		57		16.4

(b) For the following pollutants, the highest emissions occurring for any 15-minute period shall be multiplied by four and the product shall be compared to the value in Paragraph (a). These pollutants are:

(1) acetaldehyde (75-07-0);
(2) acetic acid (64-19-7);
(3) acrolein (107-02-8);
(4) ammonia (7664-41-7);
(5) bromine (7726-95-6);
(6) chlorine (7782-50-5);
(7) formaldehyde (50-00-0);
(8) hydrogen chloride (7647-01-0);
(9) hydrogen fluoride (7664-39-3); and
(10) nitric acid (7697-37-2).

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. January 1, 2010; June 1, 2008; April 1, 2005; February 1, 2005; April 1, 2001.

15A NCAC 02Q .0712 CALLS BY THE DIRECTOR

Notwithstanding any other provision of this Section or 15A NCAC 2D .1104, upon a written finding that a source or facility emitting toxic air pollutants presents an unacceptable risk to human health based on the acceptable ambient levels in 15A NCAC 2D .1104 or epidemiology studies, the Director may require the owner or operator of the source or facility to submit a permit application to comply with 15A NCAC 2D .1100 for any or all of the toxic air pollutants emitted from the facility.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45;*
Rule originally codified as part of 15A NCAC 2H .0610;
Eff. July 1, 1998.

15A NCAC 02Q .0713 POLLUTANTS WITH OTHERWISE APPLICABLE FEDERAL STANDARDS OR REQUIREMENTS

(a) This Rule applies to the establishment of emission limitations or any other requirements pursuant to the requirements of this Section or 15A NCAC 2D .1100 for which a standard or requirement has been promulgated under Section 112 of the federal Clean Air Act including those contained in 15A NCAC 2D .1110 and .1111.

(b) For each facility subject to emission standards or requirements under Section 112 of the federal Clean Air Act, permits issued or revised according to Section .0500 of this Subchapter shall contain specific conditions that:

(1) reflect applicability criteria no less stringent than those in the otherwise applicable federal standards or requirements;

(2) require levels of control for each affected facility and source no less stringent than those contained in the otherwise applicable federal standards or requirements;

(3) require compliance and enforcement measures for each facility and source no less stringent than those in the otherwise applicable federal standards or requirements;

(4) express levels of control, compliance, and enforcement measures in the same form and units of measure as the otherwise applicable federal standards or requirements; and

(5) assure compliance by each affected facility no later than would be required by the otherwise applicable federal standard or requirement.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.108; 143B-282; S.L. 1989, c. 168, s. 45; Eff. July 1, 1998.*

15A NCAC 02Q .0714 WASTEWATER TREATMENT SYSTEMS AT PULP AND PAPER MILLS

(a) This Rule applies to wastewater collection and treatment systems at pulp and paper mills that are exempted under Rule .0702 of this Section.

(b) Except for facilities that employ activated sludge type wastewater treatment systems, the owner or operator of a wastewater collection and treatment system covered under this Rule shall:

(1) submit to the Director estimates of hydrogen sulfide, total reduced sulfur, and methyl mercaptan emissions from wastewater collection and treatment systems and components using estimation methods or factors developed through industry testing and analytical studies and approved by the Director by November 1, 2005. In deciding approval of the estimation methods and factors, the Director shall consider field validation procedures including the number of valid samples taken, when measurements are made, laboratory and field measurement quality assurance procedures, and other information necessary in producing accurate and precise measurements. The Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by January 1, 2006;

(2) using the emission estimates developed under Subparagraph (b)(1), perform air dispersion modeling of all hydrogen sulfide emission sources, including all emissions associated with the wastewater collection and treatment system, as described in 15A NCAC 02D .1106 (a) through (i). If the modeling analysis demonstrates that predicted concentrations of hydrogen sulfide are below the acceptable ambient levels outlined in 15A NCAC 02D .1104, no further plan development, measurement or monitoring action is required to maintain the exemption provided by this Rule. The results of the favorable modeling demonstration must be submitted to the Director by July 1, 2006. The Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by September 1, 2006;

(3) if the dispersion modeling performed under Subparagraph (b)(2) of this rule shows that the acceptable ambient level for hydrogen sulfide is exceeded, submit to the Director, on or before September 30, 2006, for approval by the Director, an ambient air quality monitoring plan designed to assess actual ambient levels of hydrogen sulfide typical of pulp and paper mill operations. The monitoring plan may be undertaken at each of the individual mill sites or, at the option of the affected mill sites, it may be undertaken at a single North Carolina mill site that the Director determines to be representative of the industry. The Director shall complete review and make the decision regarding approval of the monitoring plan by December 31, 2006;

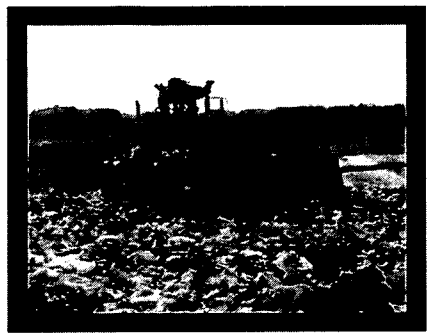
(4) by June 30, 2007, implement the ambient monitoring study plan required in Subparagraph (b)(3) to determine the actual ambient levels of hydrogen sulfide near pulp and paper mills;

(5) complete the ambient hydrogen sulfide monitoring plan and report the results to the Director and to the Chairperson of the Environmental Management Commission by December 31, 2008 and the Director shall report to the Environmental Management Commission the information submitted under this Subparagraph by February 28, 2009 for further consideration.

(c) To perform ambient monitoring for hydrogen sulfide under Subparagraph (b)(3) of this Rule, the owner or operator shall use monitoring methods and procedures approved by the Director. The Director shall approve the monitoring methods and procedures if he determines that they are an appropriate measure of ambient air concentrations of hydrogen sulfide.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143B-282; Eff. April 1, 2005.*

Division of Waste Management






PROPOSED PERMIT FEE CHANGES FOR SANITARY LANDFILLS AND TRANSFER STATIONS

Michael E. Scott, Solid Waste Section Chief

Presentation Outline

- Overview of the Session Law (SB 810)
- Basis for Proposed Permit Fee Changes
- Proposed Permit Fee Changes
- Update on Permit Term Rule Development

SECTION 15.1. No later than July 1, 2013, the Commission for Public Health shall adopt rules to allow applicants for sanitary landfills the option to (i) apply for a permit to construct a five-year phase of landfill development and apply to amend the permit to construct subsequent five-year phases of landfill development; or (ii) apply for a permit to construct a 10-year phase of landfill development and apply to amend the permit to construct subsequent 10-year phases of landfill development, with a limited review of the permit five years after issuance of the initial permit and five years after issuance of each amendment for subsequent phases of development. No later than July 1, 2013, the Commission shall also adopt rules to allow applicants for permits for transfer stations the option to (i) apply for a permit with a five-year duration to construct and operate a transfer station; or (ii) apply for a permit with a 10-year duration to construct and operate a transfer station, with a limited review of the permit five years after issuance of the initial permit and five years after issuance of any amendment to the permit. In developing these rules, the Department of Environment and Natural Resources shall examine the current fee schedule for permits for sanitary landfills and transfer stations as set forth under G.S. 130A-295.8 and formulate recommendations for adjustments to the current fee schedule sufficient to address any additional demands associated with review of permits issued for 10-year phases of landfill development and the issuance permits with a duration of up to 10 years for transfer stations. The Department shall report its findings and recommendations, including any legislative proposals, to the Environmental Review Commission on or before December 1, 2012. The rules required by this section shall not become effective until the fee schedule set forth under G.S. 130A-295.8 is amended as necessary to address any additional demands associated with review of permits issued for 10-year phases of landfill development and the issuance of permits with a duration of up to 10 years to construct and operate transfer stations.

Solid Waste Permit Fees

Permit Fees

- G.S. 130A-295.8
- In place for 5 fiscal years
- Permit fees partially fund the implementation of the Solid Waste Program and offset appropriations

Staff

- 44 program staff
- Funded with permit fees and appropriations

Facility Types

- 40 Municipal Solid Waste LF
- 53 Construction and Demolition LF
- 16 Industrial LF
- 86 Transfer Stations

10-Year Permits and Staff FTEs

- Increased initial processing time compared to 5 year permits
- 10 year permits will result in (5 year) reviews that take less time compared to a typical amendment
- Proposed fee adjustments are being made to reflect the amount of work staff will perform

Proposed Solid Waste Permit Fees

	Permit Application Types:		New		Amendment		Modification	
		Duration:	5-Year	10-Year	5-Year	10-Year	5-Year / Review of 10-Year Permit	10-Year (Major)
# Facilities Active	**Facility Type**	**Category**	**Fee**	**Proposed Fee**	**Fee**	**Proposed Fee**	**Fee**	**Proposed Fee**
20	MSWLF	< 100,000 tpy	$25,000	$38,500	$15,000	$ 28,500	$ 1,500	$ 7,500
20	MSWLF	>100,000 tpy	$50,000	$77,000	$30,000	$ 57,000	$ 3,000	$15,000
45	C&DLF	< 100,000 tpy	$15,000	$22,500	$ 9,000	$ 16,500	$ 1,500	$ 4,500
8	C&DLF	>100,000 tpy	$30,000	$46,000	$18,500	$ 34,500	$ 2,500	$ 9,250
5	IND LF	< 100,000 tpy	$15,000	$22,500	$ 9,000	$ 16,500	$ 1,500	$ 4,500
11	IND LF	>100,000 tpy	$30,000	$46,000	$18,500	$ 34,500	$ 2,500	$ 9,250
86	Transfer Station		$ 5,000	$ 7,500	$ 3,000	$ 5,500	$ 500	$ 1,500

Proposed Fee Example

Renewal of MSWLF < 100,000 tpy Permit	Years 1-5	Years 6-10	Total
Active Permit 5-Year Duration 2 x (5-Year Amendment Fee)	$15,000	$ 15,000	$30,000
Active Permit 10-Year Duration 10-Year Amendment Fee + Review of 10-Year Permit Fee	$28,500	$ 1,500	$30,000

Permit fees remain revenue neutral regardless of permit term- $30,000 for a MSW <100,000 tpy (10 year term or two 5 year terms)

Permit Fee Summary Points

- Overall amount of permit fee revenue collected will not change under the proposed permit fees
- Timing of payment amounts will be different
- Permit holders will have the choice of selecting a five-year or 10-year permit term under the new state law
- Proposed fees were presented to a small group of industry representatives

Definition of 5-Year Review / Major Modification
Proposed changes to G.S. 130A-295.8

- (3c) Permit modification means any of the following: An application for the five-year review of a ten -year permit including review of the Operations Plan, Closure Plan, Post-Closure Plan, Financial Assurance Cost Estimates, Environmental Monitoring Plans and other applicable plans.

- (4) "Permit major modification" means any of the following:

  An application for any change to the approved engineering plans for a sanitary landfill or transfer station permitted for a ten year design capacity that does not constitute a "permit amendment" or a "new permit".

Solid Waste Rule Proposal

Proposed new rule language:

15A NCAC 13B .0206 OPTION TO APPLY FOR ISSUANCE OF 10-YEAR PERMIT FOR SANITARY LANDFILL OR TRANSFER STATION

(a) An applicant for a sanitary landfill or transfer station permit subject to Section .0400, .0500 or .1600 of these rules may apply for a design, construction and operation phase of five years or a design, construction and operation phase of ten years. A permit for a ten-year phase of construction and operation of a sanitary landfill shall meet the five-year phase requirements contained in Section .0500 and .1600, applied in two five-year increments.

(b) A permit issued for a designed phase of ten years shall be subject to review within five years of the issuance date, as provided in Rule .0201(g). Permit modifications issued for a ten-year phase of construction or operation of a sanitary landfill or transfer station shall be made in accordance with rules in effect at the time of review and include an updated operations plan for the facility, revisions to the closure and post-closure plans and costs, and updates to the environmental monitoring plans.

Solid Waste Rule Proposal

Proposed rule language changes see (2)(g):

15A NCAC 13B .0504 APPLICATION REQUIREMENTS FOR SANITARY LANDFILLS

A permit for a sanitary landfill shall be based upon a particular stream of identified waste, as set forth in Rule .0504 (g)~~(i) and (ii)~~ of this Section. Any substantial change in the population or area to be served, or in the type, quantity or source of waste shall require a new permit and operation plan, including waste determination procedures where appropriate. ~~Five sets of plans shall be required with each application.~~

(2)(g) Site development showing phases or progression of ~~operation.~~ operation in five-year or ten-year phases of construction and operation.

Proposed Timeline

- OSBM approved the rule fiscal note (11/12)
- Publication of proposed rules in the NC Register (1/2/13)
- Effective date of the proposed rules (7/1/13 ?)
- Approval of proposed fee changes?
- Summer 2013 ?- Agency will review applications for 10 year permits



Questions ?

NCDENR
North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Mitch Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FROM: Kari Barsness KB
Director of Legislative and Intergovernmental Affairs

SUBJECT: Recommendations on Solid Waste Fee Adjustments

DATE: November 29, 2012

Pursuant to S.L. 2012-187, Section 15.1, the department shall report to the Environmental Review Commission on recommendations for adjusting the current fees for landfill and transfer station permits that are sufficient to address any additional demands associated with review of new 10-year permits. The department shall report by December 1, 2012. Please consider the attached report as the formal submission of this reporting requirement.

If you have any questions or need additional information, please contact me by phone at (919) 707-8618 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Assistant Secretary for Environment, Robin W. Smith
Dexter R. Matthews, Director, Division of Waste Management
Jennifer Hoffmann, Fiscal Research Division
Mariah Matheson, Research Division

Proposed Permit Fee Changes for Sanitary Landfills and Transfer Stations G.S. 130A-295.8

12/1/12

North Carolina Department of Environment and Natural Resources
Dee Freeman
Secretary

Division of Waste Management
Dexter R. Matthews
Director

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Proposed Permit Fee Changes for Sanitary Landfills and Transfer Stations G.S. 130A-295.8

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Agency Contact: Michael Scott, Section Chief
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Michael.Scott@ncdenr.gov

Necessity:

The Division of Waste Management seeks to change the Solid Waste permit fees related to sanitary landfills and transfer station permits to comply with recent changes in state law regarding permit duration. Specifically, the Regulatory Reform Act of 2012 (Appendix A) allows the option for a sanitary landfill or a transfer station to apply for a permit with a 10-year duration. The current statutory requirements for permit fees are based on five-year permit durations. The proposed statutory changes are necessary to comply with the new state law and to provide continued funding to the Solid Waste Program with permit fees that are reflective of the work incurred by program staff in reviewing permit submittals for 10-year durations. It is important to note that the overall amount of permit fee revenue collected from sanitary landfills and transfer stations will not change under the proposed permit fee adjustments, but the timing of payments will be different. Sanitary landfill and transfer station operators will have the choice of selecting a five-year or 10-year permit term and the associated fee under the new state law.

I. Summary

The proposed statutory fee changes (Appendix B) were prompted by Senate Bill 810 Section 15.1, ratified June 28, 2012. The bill requires the Commission for Public Health to adopt rules that would allow the regulated community to obtain "a permit to construct a 10-year phase of a landfill development" or "a permit with a 10-year duration to construct and operate a transfer station." The bill also required the Department of Environment and Natural Resources to examine the current fee schedule for permits for sanitary landfills and transfer stations as set forth under G.S. 130A-295.8, and to formulate recommendations to adjust the current fee schedule sufficient to address any additional demands associated with review of permits issued for 10-year phases of landfill development and the issuance of permits with a duration of 10 years for transfer stations.

Permit fees are credited to the Solid Waste Management Account, a non-reverting account that is used along with appropriations and other fee money for salaries and costs of the Solid Waste Program. The Solid Waste Program includes staff involved in permitting facilities, enforcing solid waste regulations and laws, statewide and local government planning, facility and government reporting, and administration of several special waste programs such as the Scrap Tire Program, White Goods Program and the Electronics Program.

II. Introduction and Purpose of Statute Change(s)

Current landfill and transfer station regulations require a permit amendment every five years for construction and facility operation. A 2012 change in state law allows sanitary landfills and transfer stations to apply for permits with a 10-year duration. The private solid waste companies within the industry expressed a desire for the lengthened permit term for sanitary landfills and transfer stations. The legislation enacted in July 2012 was initiated by the companies who manage waste disposal and transfer. The extension of permit duration is a trend that is occurring nationwide. In recent years, both Virginia and South Carolina have approved similar changes. The extended term of the permit will be helpful for long-range planning for the industry and will allow the industry flexibility to construct the individual landfill phases as needed by volume instead of by a particular date.

Table 1 below presents a breakdown of the different facilities that will be affected by the proposed statutory permit fee changes. Municipal Solid Waste Landfills (MSWLF), Construction and Demolition Landfills (C&DLF), Industrial Landfills (IND LF), and Transfer Stations are included in the table along with the proposed fee modifications (New 10-year duration, Amend 10-year duration, Major Modification of 10-year duration).

Proposed Fee Schedule 5-Year and 10-Year Duration Permits			***New Permit***	***New 10-Year Duration Permit***	***Permit Amendment***	***Amend 10-Year Duration Permit***	***5-Year Review of 10-Year Duration Permit (Modification)***	***Major Mod of 10-Year Duration Permit***
# Facilities Active	**Facility Type**	**Category**	**Fee**	**Proposed Fee**	**Fee**	**Proposed 10-Yr Amendment Fee**	**Fee**	**Proposed Major Modification Fee**
20	MSWLF	< 100,000 tpy	$25,000	$38,500	$15,000	$28,500	$1,500	$7,500
20	MSWLF	≥100,000 tpy	$50,000	$77,000	$30,000	$57,000	$3,000	$15,000
45	C&DLF	< 100,000 tpy	$15,000	$22,500	$9,000	$16,500	$1,500	$4,500
8	C&DLF	≥100,000 tpy	$30,000	$46,000	$18,500	$34,500	$2,500	$9,250
5	IND LF	< 100,000 tpy	$15,000	$22,500	$9,000	$16,500	$1,500	$4,500
11	IND LF	≥100,000 tpy	$30,000	$46,000	$18,500	$34,500	$2,500	$9,250
86	Transfer Station		$5,000	$7,500	$3,000	$5,500	$500	$1,500

III. Impact on State Government Permit Fee Revenues

The new state law will allow facilities to have 10-year permit durations. Fee revenue, if adjusted according to the proposed statute language (See Appendix B), will show increased revenue during the first five years and an equal decrease in funding during the second five years. This is a result of 10-year permit fees that will be higher than the current five-year fees. The overall amount of permit fee revenue collected from sanitary landfills and transfer stations will not change under the proposed permit fee adjustments, but the timing of payments will be different. This pattern will continue for the life of the facility.

Because there is a potential cost savings for facilities in obtaining 10-year permits due to decreased consulting costs, the agency anticipates that the majority of facilities will switch to the 10-year permit option. Applications for 10-year permits for sanitary landfills and transfer stations will include more information for Solid Waste staff to review compared to the current five-year submittals. The additional information for 10-year permit terms will result in more staff time being dedicated to these permit submittals. This additional time allocation will be balanced at the five-year mark when a limited review is conducted on a 10-year permit versus a conventional five-year amendment.

IV. Conclusion

Changes to the current solid waste statutes for permit fees are requested in order to provide continued funding to the Solid Waste Program in a proportional amount to the work incurred by program staff for review of sanitary landfill and transfer station permits for 10-year terms. Program staff have identified the additional demands associated with reviewing permits with extended terms and have proposed the attached fee adjustments as changes that are necessary based on the extended review time for permits with 10-year terms.

Appendix A: S.L. 2012-187, Regulatory Reform Act of 2012

S.L. 2012-187, Section 15.1 reads:

"SECTION 15.1.
No later than July 1, 2013, the Commission for Public Health shall adopt rules to allow applicants for sanitary landfills the option to (i) apply for a permit to construct a five-year phase of landfill development and apply to amend the permit to construct subsequent five-year phases of landfill development; or (ii) apply for a permit to construct a 10-year phase of landfill development and apply to amend the permit to construct subsequent 10-year phases of landfill development, with a limited review of the permit five years after issuance of the initial permit and five years after issuance of each amendment for subsequent phases of development. No later than July 1, 2013, the Commission shall also adopt rules to allow applicants for permits for transfer stations the option to (i) apply for a permit with a five-year duration to construct and operate a transfer station; or (ii) apply for a permit with a 10-year duration to construct and operate a transfer station, with a limited review of the permit five years after issuance of the initial permit and five years after issuance of any amendment to the permit. In developing these rules, the Department of Environment and Natural Resources shall examine the current fee schedule for permits for sanitary landfills and transfer stations as set forth under G.S. 130A-295.8 and formulate recommendations for adjustments to the current fee schedule sufficient to address any additional demands associated with review of permits issued for 10-year phases of landfill development and the issuance permits with a duration of up to ten years for transfer stations. The Department shall report its findings and recommendations, including any legislative proposals, to the Environmental Review Commission on or before December 1, 2012. The rules required by this section shall not become effective until the fee schedule set forth under G.S. 130A-295.8 is amended as necessary to address any additional demands associated with review of permits issued for 10-year phases of landfill development and the issuance of permits with a duration of up to ten years to construct and operate transfer stations."

Appendix B: Changes Proposed by DENR to General Statute

130A-295.8 is proposed for amendment to read:

§ 130A-295.8. Fees applicable to permits for solid waste management facilities.

(a) The Solid Waste Management Account is established as a non-reverting account within the Department. All fees collected under this section shall be credited to the Account and shall be used to support the solid waste management program established pursuant to G.S. 130A-294.

(a1) Permits for sanitary landfills and transfer stations shall be issued for a design and operation phase of five years or a design and operation phase of ten years. A permit issued for a designed phase of ten years shall be subject to a limited review within five years of the issuance date.

(b) As used in this section:

(1) "New permit" means any of the following:

a. An application for a permit for a solid waste management facility that has not been previously permitted by the Department. The term includes one site suitability review, the initial permit to construct, and one permit to operate the constructed portion of a phase included in the permit to construct.

b. An application that proposes to expand the boundary of a permitted waste management facility for the purpose of expanding the permitted activity.

c. An application that includes a proposed expansion to the boundary of a waste disposal unit within a permitted solid waste management facility.

d. An application for a substantial amendment to a solid waste permit, as defined in G.S. 130A-294.

(2) "Permit amendment" means any of the following:

a. An application for a permit to construct and one permit to operate for the second and subsequent phases of landfill development described in the approved facility plan for a permitted solid waste management facility.

b. An application for the five-year renewal of a permit for a permitted solid waste management facility.

c. Any application that proposes a change in ownership or corporate structure of a permitted solid waste management facility.

(3) "Permit modification" means any of the following:

a. An application for any change to the plans approved in a permit for a solid waste management facility that does not constitute a "permit amendment" or a "new permit".

b. A second or subsequent permit to operate for a constructed portion of a phase included in the permit to construct.

c. An application for the five-year review of a ten -year permit including review of the Operations Plan, Closure Plan, Post-Closure Plan, Financial Assurance Cost Estimates, Environmental Monitoring Plans and other applicable plans.

(4) "Permit major modification" means an application for any change to the approved engineering plans for a sanitary landfill or transfer station permitted for a ten-year design capacity that does not constitute a "permit amendment" or a "new permit".

(c) An applicant for a permit shall pay an application fee upon submission of an application according to the following schedule:

(1) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, New Permit– $25,000.

(1A) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, New Permit (Ten-Year) – $38,500.

(2) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, Amendment– $15,000.

(2A) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, Amendment (Ten-Year) – $28,500.

(3) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, Modification – $1,500.

(3A) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, Major Modification (Ten-Year) – $7,500.

(4) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, New Permit– $50,000.

(4A) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, New Permit (Ten-Year) – $77,000.

(5) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, Amendment– $30,000.

(5A) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, Amendment (Ten-Year) – $57,000.

(6) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, Modification – $3,000.

(6A) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, Major Modification (Ten-Year) – $15,000.

(7) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, New Permit– $15,000.

(7A) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, New Permit (Ten-Year) – $22,500.

(8) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, Amendment– $9,000.

(8A) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, Amendment (Ten-Year) – $16,500.

(9) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, Modification – $1,500.

(9A) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, Major Modification (Ten-Year) – $4,500.

(10) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, New Permit– $30,000.

(10A) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, New Permit (Ten-Year) – $46,000.

(11) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, Amendment– $18,500.

(11A) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, Amendment (Ten-Year) – $34,500.

(12) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, Modification – $2,500.

(12A) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, Major Modification (Ten-Year) – $9,250.

(13) Industrial Landfill accepting less than 100,000 tons/year of solid waste, New Permit– $15,000.

(13A) Industrial Landfill accepting less than 100,000 tons/year of solid waste, New Permit (Ten-Year) – $22,500.

(14) Industrial Landfill accepting less than 100,000 tons/year of solid waste, Amendment– $9,000.

(14A) Industrial Landfill accepting less than 100,000 tons/year of solid waste, Amendment (Ten-Year) – $16,500.

(15) Industrial Landfill accepting less than 100,000 tons/year of solid waste, Modification – $1,500.

(15A) Industrial Landfill accepting less than 100,000 tons/year of solid waste, Major Modification (Ten-Year) – $4,500.

(16) Industrial Landfill accepting 100,000 tons/year or more of solid waste, New – $30,000.

(16A) Industrial Landfill accepting 100,000 tons/year or more of solid waste, New Permit (Ten-Year) – $46,000.

(17) Industrial Landfill accepting 100,000 tons/year or more of solid waste, Amendment– $18,500.

(17A) Industrial Landfill accepting 100,000 tons/year or more of solid waste, Amendment (Ten-Year) – $34,500.

(18) Industrial Landfill accepting 100,000 tons/year or more of solid waste, Modification – $2,500.

(18A) Industrial Landfill accepting 100,000 tons/year or more of solid waste, Major Modification (Ten-Year) – $9,250.

(19) Tire Monofill, New Permit – $1,750.

(20) Tire Monofill, Amendment – $1,250.

(21) Tire Monofill, Modification – $500.

(22) Treatment and Processing, New Permit – $1,750.

(23) Treatment and Processing, Amendment – $1,250.

(24) Treatment and Processing, Modification – $500.

(25) Transfer Station, New Permit – $5,000.

(25A) Transfer Station, New Permit (Ten-Year) – $7,500.

(26) Transfer Station, Amendment – $3,000.

(26A) Transfer Station, Amendment (Ten-Year) – $5,500.

(27) Transfer Station, Modification – $500.

(27A) Transfer Station, Major Modification (Ten Year)– $1,500.

(28) Incinerator, New Permit – $1,750.

(29) Incinerator, Amendment – $1,250.

(30) Incinerator, Modification – $500.

(31) Large Compost Facility, New Permit – $1,750.

(32) Large Compost Facility, Amendment – $1,250.

(33) Large Compost Facility, Modification – $500.

(34) Land Clearing and Inert, New Permit – $1,000.

(35) Land Clearing and Inert, Amendment – $500.

(36) Land Clearing and Inert, Modification – $250.

H17

NORTH CAROLINA GENERAL ASSEMBLY

ENVIRONMENTAL REVIEW COMMISSION

REPORT TO THE
2013 SESSION
of the
2013 GENERAL ASSEMBLY

XXXXXX, 2013

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TRANSMITTAL LETTER

xxxxxxxx 2013

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TO THE MEMBERS OF THE 2013 REGULAR SESSION
OF THE 2013 GENERAL ASSEMBLY

Pursuant to Article 12D of Chapter 120 of the General Statutes, the Environmental Review Commission submits its report and recommendations to the 2013 Regular Session of the 2013 General Assembly.

Respectfully submitted,

Senator David Rouzer

Representative Mitchell Gillespie

Representative Ruth Samuelson

Co-Chairs
Environmental Review Commission

STATUTORY AUTHORITY

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NORTH CAROLINA GENERAL STATUTES
ARTICLE 12D.

Environmental Review Commission.

§ 120-70.41. Commission established.

The Environmental Review Commission is hereby established.

§ 120-70.42. Membership; cochairs; vacancies; quorum.

(a) The Environmental Review Commission shall consist of six Senators appointed by the President Pro Tempore of the Senate, six Representatives appointed by the Speaker of the House of Representatives, who shall serve at the pleasure of their appointing officer, the Chair or a Cochair of the Senate Committee on Agriculture, Environment, and Natural Resources or the equivalent committee, the Chair or a Cochair of the House of Representatives Committee on Environment and Natural Resources or the equivalent committee, the Chair or a Cochair of the Senate Committee on Appropriations – Natural and Economic Resources or the equivalent committee, and the Chair or a Cochair of the House of Representatives Committee on Appropriations – Natural and Economic Resources or the equivalent committee.

(b) The President Pro Tempore of the Senate shall designate one Senator to serve as cochair and the Speaker of the House of Representatives shall designate one Representative to serve as cochair.

(c) Except as otherwise provided in this subsection, a member of the Commission shall continue to serve for so long as the member remains a member of the General Assembly and no successor has been appointed. A member of the Commission who does not seek reelection or is not reelected to the General Assembly may complete a term of service on the Commission until the day on which a new General Assembly convenes. A member of the Commission who resigns or is removed from service in the General Assembly shall be deemed to have resigned or been removed from service on the Commission. Any vacancy that occurs on the Environmental Review Commission shall be filled in the same manner as the original appointment.

(d) A quorum of the Environmental Review Commission shall consist of nine members.

§ 120-70.43. Powers and duties.

(a) The Environmental Review Commission shall have the following powers and duties:

(1) To evaluate actions of all boards, commissions, departments, and other agencies of the State and local governments as such actions relate to the environment or protection of the environment, including but not limited to an evaluation of:

a. Benefits of each program relative to costs;
b. Achievement of program goals;
c. Use of measures by which the success or failure of a program can be measured; and
d. Conformity with legislative intent;

(2) To study on a continuing basis the organization of State government as it relates to the environment or to the protection of public health and the environment, including but not limited to:
a. Improvements in administrative structure, practices, and procedures;
b. Increased integration and coordination of programs and functions;
c. Increased efficiency in budgeting and use of resources;
d. Efficient administration of licensing, permitting, and grant programs;
e. Prompt, effective response to environmental emergencies;
f. Opportunities for effective citizen participation; and
g. Broadening of career opportunities for professional staff;

(3) To make any recommendations it deems appropriate regarding the reorganization and consolidation of environmental regulatory agencies and the recodification of statutes relating to the environment, including but not limited to:
a. Ways in which agencies may operate more efficiently and economically;
b. Ways in which agencies can provide better services to the State and to the people; and
c. Instances in which functions of agencies are duplicative, overlapping, incomplete in scope or coverage, fail to accomplish legislative objectives, or for any other reason should be redefined or redistributed;

(4) To review and evaluate changes in federal law and regulations, relevant court decisions, and changes in technology affecting the environment or protection of the environment;

(5) To review existing and proposed State law and rules affecting the environment or protection of the environment and to determine whether any modification of law or rules is in the public interest;

(6) To make reports and recommendations, including draft legislation, to the General Assembly from time to time as to any matter relating to the powers and duties set out in this section; and

(7) To undertake such additional studies as it deems appropriate or as may from time to time be requested by the President Pro Tempore of the Senate, the Speaker of the House of Representatives, either house of the General Assembly, the Legislative Research Commission, the Joint Legislative Commission on Governmental Operations, the Joint Legislative Utility Review Committee, or the Joint Select Committee on Low-Level Radioactive Waste and to make such reports and

recommendations to the General Assembly regarding such studies as it deems appropriate; provided that the Environmental Review Commission shall not undertake any study which the General Assembly has assigned to another legislative commission or committee.

(b) The Environmental Review Commission may continue the study of environmental agency consolidation and reorganization. The study of environmental agency consolidation shall include, but is not limited to:

(1) Monitoring the implementation of Session Laws 1989, c. 727;

(2) Evaluation of the organization, programs, and operation of the Department of Environment and Natural Resources;

(3) Evaluation of the organization, functions, powers, and duties of the components of the Department of Environment and Natural Resources, including boards, commissions, councils, and regional offices; and

(4) Recodification of the General Statutes relating to the environment and environmental agencies.

(c) In addition to its general powers and duties, the Environmental Review Commission shall have the following powers and duties with respect to hazardous waste management:

(1) To study the current and projected need for hazardous waste treatment, storage, and disposal capacity in the State in light of anticipated generation of hazardous waste and alternatives for hazardous waste treatment and disposal;

(2) To evaluate the potential for the development of additional hazardous waste treatment, storage, and disposal capacity by the private sector;

(3) To study the necessity for and scope of hazardous waste treatment, storage, and disposal facilities which are sited, owned, or operated by the State;

(4) To review progress in securing a volunteer county to host a hazardous waste treatment facility;

(5) To study incentives and compensation for the community which hosts, either voluntarily or involuntarily, a hazardous waste treatment facility, including any additional incentives and compensation which may be needed, whether there should be differential compensation for a volunteer county, options for use of funds by local governments, distribution of compensation among local governments, and methods of providing flexibility in the development of an incentives and compensation package for a particular local community;

(6) To review progress in developing interstate agreements for the treatment, storage, and disposal of hazardous waste;

(7) To assist in the development of cooperative, comprehensive regional approach to hazardous waste treatment and disposal;

(8),(9) Repealed by Session Laws 2001-474, s. 12.

(10) To study the capacity assurance requirement under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Pub. L. No. 96-510, 94 Stat. 2767, 42 U.S.C. 9601 et seq., as amended,

and the Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 100 Stat. 1613, as amended as it relates to the continued eligibility of North Carolina for remedial actions under Superfund;

(11) To study alternatives available to the State for dealing with hazardous waste and the ramifications of those alternatives; and

(12) To receive and evaluate reports of every State agency, board, and commission which has any power or duty with respect to hazardous waste management.

§ 120-70.44. Additional powers.

The Environmental Review Commission, while in the discharge of official duties, may exercise all the powers provided for under the provisions of G.S. 120-19, and G.S. 120-19.1 through G.S. 120-19.4. The Environmental Review Commission may meet at any time upon the call of either cochairman, whether or not the General Assembly is in session. The Environmental Review Commission may meet in the Legislative Building or the Legislative Office Building upon the approval of the Legislative Services Commission.

Notwithstanding any rule or resolution to the contrary, proposed legislation to implement any recommendation of the Environmental Review Commission regarding any study the Environmental Review Commission is authorized to undertake or any report authorized or required to be made by or to the Environmental Review Commission may be introduced and considered during any session of the General Assembly.

§ 120-70.45. Compensation and expenses of members.

Members of the Environmental Review Commission shall receive subsistence and travel expenses at the rates set forth in G.S. 120-3.1.

§ 120-70.46. Staffing.

The Legislative Services Officer shall assign as staff to the Environmental Review Commission professional employees of the General Assembly, as approved by the Legislative Services Commission. Clerical staff shall be assigned to the Environmental Review Commission through the offices of the Supervisor of Clerks of the Senate and Supervisor of Clerks of the House of Representatives. The expenses of employment of clerical staff shall be borne by the Environmental Review Commission.

§ 120-70.47. Funding.

From funds available to the General Assembly, the Legislative Services Commission shall allocate monies to fund the work of the Environmental Review Commission.

COMMISSION MEMBERSHIP

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ENVIRONMENTAL REVIEW COMMISSION

2012-2013 Membership

Pursuant to G.S. 120-70.42, the Environmental Review Commission consists of six members appointed by the President Pro Tempore of the Senate, six members appointed by the Speaker of the House of Representatives, the Chair or a Cochair of the Senate Committee on Agriculture, Environment, and Natural Resources, the Chair or a Cochair of the House of Representatives Committee on Environment and Natural Resources, the Chair or a Cochair of the Senate Committee on Appropriations – Natural and Economic Resources, and the Chair or a Cochair of the House of Representatives Committee on Appropriations – Natural and Economic Resources.

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COMMISSION PROCEEDINGS

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The Environmental Review Commission met three times during the interim between the 2012 and the 2013 Regular Sessions of the General Assembly. The Commission's Charge can be found **here**. The following is a brief summary of the Commission's proceedings. Detailed minutes and information from each Commission meeting are available in the Legislative Library and **online**.

October 11, 2012

AGENDA

9:30 a.m. Thursday
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Ruth Samuelson, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5minutes)*
   Jeff Hudson, Commission Counsel

4. Quarterly reports by the Environmental Management Commission (EMC) as to its operations, activities, programs, and progress for the period from January 2012 through September 2012 (G.S. 143B-282(b)) *(30 minutes)*
   Stephen T. Smith, Chairman
   Environmental Management Commission

5. Annual State Water Supply Plan Report (G.S. 143-355(n)) *(45 minutes)*
   Thomas A. Reeder, Director
   Division of Water Resources, Department of Environment and Natural Resources (DENR)

6. Report on the 2011 Agriculture Water Use Survey (G.S. 106-24(b)) *(30 minutes)*
   Vernon Cox, Environmental Programs Specialist
   Department of Agriculture and Consumer Services

7. Presentation on the State Erosion and Sedimentation Control Program *(30 minutes)*

Robin Smith, Assistant Secretary for Environment, DENR

Tracy Davis, Director
Division of Energy, Mineral, and Land Resources, DENR

8. Plastics Recycling *(1 hour)*

Scott B. Mouw, Chief
Community and Business Assistance Section
Division of Environmental Assistance and Outreach, DENR

Scott Booth
Chief Operating Officer
Envision Plastics

Chris Bradley
Vice President of Operations
Clear Path Recycling, LLC

Terry Turner
Product Development Manager
Unifi, Inc.

Charles J. Lancelot, Ph.D.
Executive Director, Plastics Environmental Council

9. Commission discussion and announcements

10. Adjourn

The first meeting of the Environmental Review Commission (ERC or Commission) was held on Thursday October 11, 2012 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Samuelson presided.

Mr. Jeff Hudson, Commission Counsel, gave an overview of the meeting agenda and the reports received by the Commission.

Mr. Stephen Smith, Chairman of the Environmental Management Commission (EMC), provided the Commission with quarterly reports on the operations, activities, programs, and progress for the EMC from January 2012 through September 2012.

The Commission discussed various issues relating to the buffer rules, including making the buffer rules more efficient and elective cutting by a forester. Commission members asked about the 303(d) list process. Mr. Smith explained that the 303(d) list process refers to a section of the federal Clean Water Act, which gives the State the

authority to determine which waters should be designated as impaired. The Clean Water Act requires that a list of impaired waters be prepared and sent to the United States Environmental Protection Agency (USEPA) for either approval or disapproval. Each state develops a strategy and process to deal with those impaired waters.

There was Commission discussion on ecological flow, the methodology that the Department of Environment and Natural Resources (DENR) uses to create a list of impaired waters, and whether or not the EMC should be involved in developing that method. The Commission requested more information on ecological flow at the November meeting.

Mr. Thomas A. Reeder, Director, Division of Water Resources (DWR), DENR, provided an annual report on the State Water Supply Plan and other information related to water resources in the State, including water efficiency, hydrologic modeling, ecological flows, assistance to local governments, storage alternatives, coastal plain aquifers, shale gas and water quantity, drought response preparation, pending interbasin transfers (IBT), and protecting drinking water sources.

Mr. Reeder noted that there are several dozen water systems in the State that cannot account for 31% to 50% of their water. According to Mr. Reeder, this water loss is partially due to geography. The mountain region of the State may be subject to more water loss, as the water must be pumped at increased pressures through mountainous terrain. In addition to geography, Mr. Reeder said that improper metering, antiquated systems, and lack of staff could contribute to pervasive water loss.

Mr. Reeder noted that there are several water systems that will require an IBT by 2050. Mr. Reeder said that he would provide the Commission with the specific water systems at the ERC meeting in November.

There was additional Commission discussion on aquifer incursion, desalination, leakages, water efficiency, pressure in the aquifers, and the OASIS modeling system versus the CHEOPS modeling system.

Mr. Vernon Cox, Environmental Programs Specialist, Department of Agriculture and Consumer Services, provided a report on the 2011 Agriculture Water Use Survey. Mr. Cox discussed agricultural average daily withdrawals, historical comparisons, ground water withdrawals, and surface water withdrawals.

There was Commission discussion on aquaculture and hydroelectric withdrawals and the percentage of agriculture water usage. Mr. Cox said that agriculture water usage in North Carolina is about 1% of total water consumption in the State.

Ms. Robin Smith, Assistant Secretary for Environment, DENR and Mr. Tracy Davis, Director of the Division of Energy, Mineral and Land Resources, DENR, presented on the State Erosion and Sedimentation Control Program, including permitting, express permitting, inspections, and enforcement.

Mr. Davis explained how the local sedimentation programs are delegated by the State and noted that DENR still monitors the local programs. If the local sedimentation program is not performing it could be placed on probation and if problems persist, DENR will take the program back.

There was Commission discussion on engineering reviews and why erosion control plans sealed by a licensed engineer were not adequate. Mr. Davis indicated that DENR typically reviews plans within 20 days. A Commission member asked why the mountain counties and jurisdictions have a higher percentage of delegated programs? Some Commission members were concerned about the State program's solvency, express permits, and DENR's responsiveness. One member remarked that the sedimentation program's funding has been cut by the Legislature, so there are fewer people on staff to inspect the sites.

Mr. Scott Mouw, Chief of the Community and Business Assistance Section, Division of Environmental Assistance and Outreach, DENR, presented an update on the degradable plastics study. Mr. Mouw also discussed basic kinds of plastics, products made from plastic feedstocks, recovery of plastic bottles, and recycled plastic markets.

Mr. Mouw explained the difference between high-density polyethylene (HDPE) and polyethylene terephthalate (PET) plastic bottles. Commission members asked if there was an increase in jobs in the plastic industry? Mr. Mouw said that North Carolina has had major investments in plastic bottle reclamation. According to Mr. Mouw, plastics recycling has doubled in the past five to six years.

Mr. Scott Booth, Chief Operating Officer of Envision Plastics, spoke about Envision Plastics history, HDPE recycling, recycling process cycle, environmental impacts, and the customers and companies that use Envision Plastics' products. Mr. Booth discussed certain types of agricultural products and plastics with contaminants, such as motor oil, battery acid, and antifreeze. Mr. Booth said that Envision Plastics has a wastewater treatment plant, which aids in the recyclability of those products. Mr. Booth noted that Envision Plastics does not typically recycle hazardous chemical containers. Mr. Booth also discussed the separation of plastics by color, degradable plastics, and bioresins.

Mr. Chris Bradley, Vice President of Operations, Clear Path Recycling, LLC, spoke about Clear Path Recycling's history, impacts on the State recycling market, markets served, degradable additives and impacts, and threats to PET recycling. According to Mr. Bradley, 80% of the landfill impact is eliminated by the reclamation of PET bottles and byproducts. Mr. Bradley explained that the tolerance level of degradable plastics in the recycling waste stream is unknown. Mr. Bradley further explained recycling feedstocks.

Mr. Terry Turner, Product Development Manager, Unifi, Inc., spoke about Unifi's history, the synthetic yarn the company produces, the manufacturing process, and the product's uses, which include fabrics and clothing.

Dr. Charles J. Lancelot Executive Director of Plastics Environmental Council, discussed the biodegradability of conventional plastics in landfills, degradable plastics in the recycle stream, and bioplastics versus conventional plastics. Dr. Lancelot explained that most plastics are permanent if no degradable additives are included.

November 15, 2012

AGENDA

9:30 a.m. Thursday
Room 544 Legislative Office Building
Raleigh, North Carolina

1. Call to order
   Representative Mitch Gillespie, Presiding

2. Introductory remarks by Cochairs *(5 minutes)*
   Senator David Rouzer
   Representative Mitch Gillespie
   Representative Ruth Samuelson

3. Report from the Commission Counsel *(5 minutes)*
   Jeff Hudson, Commission Counsel

4. Presentation on development and prioritization of the State's list of impaired waters, pursuant to Section 303(d) of the federal Clean Water Act *(30 minutes)*
   Chuck Wakild, Director
   Division of Water Quality, Department of Environment and Natural Resources (DENR)

5. Presentation on ecological flow determinations for development of hydrologic models *(1 hour)*
   Thomas A. Reeder, Director
   Division of Water Resources, DENR

6. Presentation on potential mining for uranium in Virginia and possible impacts and issues for North Carolina *(30 minutes)*
   Thomas A. Reeder, Director
   Division of Water Resources, DENR

7. Presentation on L&S Hydro v Piedmont Triad Regional Water Authority litigation *(45 minutes)*
   Richard B. Whisnant, Associate Professor of Public Law and Government
   School of Government, University of North Carolina at Chapel Hill

8. Annual report on the Inactive Hazardous Sites Program (G.S. 130A-310.10) *(1 hour)*

Dexter Matthews, Director
DWM, DENR

9. Commission discussion and announcements

10. Adjourn

The second meeting of the Environmental Review Commission (ERC or Commission) was held on Thursday November 15, 2012 at 9:30 a.m. in Room 544 of the Legislative Office Building. Representative Gillespie presided.

Mr. Chuck Wakild, Director of the Division of Water Quality (DWQ) in the Department of Environment and Natural Resources (DENR), provided the Commission with a presentation on the development and prioritization of the State's list of impaired waters pursuant to Section 303(d) of the federal Clean Water Act. Mr. Wakild described that the Environmental Management Commission (EMC) is statutorily authorized to implement the federal Clean Water Act, and specifically authorized to identify and prioritize impaired waters and developing total maximum daily loads (TMDLs) for impaired waters. The "303(d) list" includes those waters that are identified by the State that do not meet any water quality standard. The 303(d) list is prepared and sent to the U.S. Environmental Protection Agency (USEPA) for approval by April 1 in even-numbered years. Under the Clean Water Act, states adopt standards for in-stream water quality and the 303(d) listing process is conducted to determine if water bodies meet water quality standards. The 303(d) list is used for basin plans, targeting DWQ and other entities for technical and financial assistance, informing permitting, and developing TMDLs as required by federal law. The EMC adopted a new 303(d) assessment methodology at the November 8, 2012 meeting that involves public review and comment, Water Quality Committee (of the EMC) approval, and EMC approval.

Mr. Tom Reeder, Director of the Division of Water Resources (DWR) in DENR, provided the Commission with a presentation on ecological flow determinations for development of hydrologic models. Mr. Reeder described ecological flows as the site-specific flow needed to remain in a water body in order to maintain instream uses. Mr. Reeder explained the difference between ecological flow and minimum flows which are defined as the minimum threshold to maintain aquatic life for short periods of time. Mr. Reeder updated the Commission with DENR's activities including those required by S.L. 2010-143 to identify the flow necessary to maintain ecological integrity, the creation of a Science Advisory Board to assist in characterizing and determining ecological flows, incorporating ecological flows into hydrologic river basin models, and determining if ecological flows will be adversely impacted by existing or future water withdrawals. DENR views ecological flows as a planning rather than policy tool. Mr. Reeder identified utilities, public water supply, industry, agriculture, and mining as the withdrawals with the greatest potential to impact ecological flow. Public water supply systems on run-of-the-river systems have the greatest potential to impact ecological flow. Mr. Reeder discussed potential positive impacts of ecological flows and promotion of water security.

Mr. Tom Reeder, Director of DWR in DENR, provided the Commission with a presentation on the potential for uranium mining in Virginia and the possible impacts and issues for North Carolina. Mr. Reeder identified the location of the proposed mining site in Coles Hill, Virginia and its location proximate to Kerr Lake in the Roanoke River Basin. Mr. Reeder briefly explained the process of uranium mining and milling and how the proposed process may produce 11 million cubic yards of radioactive tailings stored in in aboveground impoundments of up to 40 acres in size. Mr. Reeder listed potential physical impacts to North Carolina from tailing containment failure to include: radioactive tailings washing downstream; increased radiation levels more than 10 to 20 times the Safe Drinking Water Act levels in Kerr Lake; the possibility of taking more than two years to flush contamination; and the potential for re-suspension of particulate contamination during periods of high flow. Presently, the uranium mining ban in Virginia remains in place, the study ordered by Governor McDonnell is being finalized, and the Virginia Legislature may consider lifting the mining ban during the 2013 legislative session. To date, North Carolina has handled the situation through the Roanoke River Bi-State Commission which adopted a resolution opposed to mining in August 2012 that was sent to the legislatures and governors of both Virginia and North Carolina.

Mr. Richard Whisnant, Associate Professor of Public Law and Government at the School of Government at the University of North Carolina at Chapel Hill, presented the Commission with an overview of the *L&S Hydro v Piedmont Triad Regional Water Authority* litigation. Mr. Whisnant listed some significant water law issues at stake in the trial including the nature of riparian water rights and how they stack up against nonriparian users, such as public water supply and the difference between the law of beneficial use of water in streams and lakes versus the law of liability for damages for water flowing across land. Mr. Whisnant also noted the concern about contingent liability of all other entities with eminent domain powers who have responsibility for water withdrawals that may reduce flows to downstream riparian owners, specifically are there temporal or spatial limits to the injuries? Mr. Whisnant also discussed some of the implications of this litigation on efforts to improve water security in North Carolina and recommended the legislature adopt clearly stated policy goals to help guide administrative and judicial decisions and to regulate large withdrawals or uses.

Mr. Dexter Matthews, Director of the Division of Waste Management in DENR presented the Commission with the annual report of the Inactive Hazardous Sites Program and the Bernard Allen Memorial Drinking Water Fund. Mr. Matthews described the Inactive Hazardous Sites Program, the types of sites that are included in the Program, and an overview of the current inventory of sites contaminated with hazardous substances for the 2011-2012 fiscal year. Mr. Matthews stated that sites are designated as "high-risk" when there are exposure concerns including contaminated drinking water supplies, direct contact with contaminated soils on residential properties, and vapors from contaminated groundwater entering homes or other buildings. Mr. Matthews described orphan sites and the inherent difficulty with determining responsible parties. Mr. Matthews identified sources of funding for orphaned sites, discussed pre-regulatory

landfills, and use of the Bernard Allen Memorial Drinking Water Fund and the Inactive Hazardous Sites Cleanup Fund. Lastly, Mr. Matthews provided the Commission with history and an update on the Stony Hill Road private well contamination and made numerous recommendations.

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LEGISLATIVE PROPOSALS

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#18

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2013

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BILL DRAFT 2013-TPz-2 [v.6] (11/28)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
12/7/2012 3:54:57 PM

Short Title:	DENR Support for Regional Water Supply System.	(Public)
Sponsors:	(Primary Sponsor).	
Referred to:		

A BILL TO BE ENTITLED

AN ACT TO REQUIRE THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES TO SUPPORT THE APPLICATION OF A REGIONAL WATER SUPPLY SYSTEM FOR ALL REQUIRED FEDERAL APPROVALS, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. § 143-355.7 reads as rewritten:

"**§ 143-355.7. Water supply development; State-local cooperation.**

(a) At the request of one or more units of local government, the Department may assist the local government in identifying the preferred water supply alternative that alone or in combination with other water sources will provide for the long-term water supply needs documented in the local water supply plan and meet all of the following criteria:

(1) Are economically and practically feasible.

(2) Make maximum, practical beneficial use of reclaimed wastewater and stormwater.

(3) Comply with water quality classifications and standards.

(4) Avoid or mitigate impacts to threatened or endangered species to the extent such species are protected by State or federal law.

(5) Maintain downstream flows necessary to protect downstream users.

(6) Do not have significant adverse impacts on other water withdrawals or wastewater discharges.

(7) Avoid or mitigate water quality impacts consistent with the requirements of rules adopted by the Environmental Management Commission to implement 33 U.S.C. § 1341.

(b) During the alternatives analysis, the Department shall request relevant information regarding the potential alternatives, including the establishment or expansion of the water supply reservoir or other water supply resources, from other State agencies with jurisdiction over any natural resources that will be impacted under the potential alternatives identified by the Department. Unless the local government agrees to an extension of time, the Department shall determine the preferred alternative within two years of the execution of a contract with the requesting local government for the costs of the analysis.

(b1) The determination of the preferred alternative shall be binding on all State agencies unless the Department determines from its further evaluation during its review of any State or

federal permit applications for the project that another preferred alternative should be selected in light of additional information brought forward during the permit reviews. The Department shall provide its full support and favorable endorsement of any State or federal permit applications for the preferred alternative when all of the following conditions are met:

(1) The regional water supply system has acquired or will acquire the property necessary for construction of the water supply reservoir or other water supply resource.

(2) The local water supply plan shows that the regional water supply system has implemented appropriate conservation measures similar in effect to the measures in comparably sized North Carolina regional water supply systems.

(3) The regional water supply system has developed and is implementing measures to replace existing leaking infrastructure that is similar in effect to the measures being implemented by comparably sized North Carolina regional water systems.

(4) The regional water supply system has entered into a contractual agreement to pay the expenses incurred by the Department under this section.

(c) If the Department provides an analysis of practicable alternatives for meeting a water supply need under this section, the analysis shall be accepted by the Department and the Department of Administration for purposes of satisfying the requirements of the North Carolina Environmental Policy Act and any State permit or authorization that requires identification and assessment of practicable alternatives, including, but not limited to, a request for an interbasin transfer pursuant to G.S. 143-215.22L.

(d) The Department may provide technical assistance to a unit of local government in obtaining federal permits for the preferred water supply alternative identified pursuant to subsection (a) of this section. For purposes of providing technical assistance and conducting studies in support of a proposed water supply project under this section, the Department may enter into an agreement with one or more units of local government to conduct studies or modeling. The agreement shall specify the allocation of costs for any studies or modeling prepared by the Department in support of the project.

~~(e) When the Department has identified the most practicable alternative, a regional water supply system may request that the Department become a co-applicant for all required federal approvals for the alternative identified by the Department. The Department may become a co-applicant when all of the following conditions are met:~~

~~(1) The regional water supply system has acquired or will acquire the property necessary for construction of the water supply reservoir or other water supply resource.~~

~~(2) The local water supply plan shows that the regional water supply system has implemented appropriate conservation measures similar in effect to the measures in comparably sized North Carolina regional water supply systems.~~

~~(3) The regional water supply system has developed and is implementing measures to replace existing leaking infrastructure that is similar in effect to the measures being implemented by comparably sized North Carolina regional water systems.~~

~~(4) The regional water supply system has entered into a contractual agreement to pay the expenses incurred by the Department as a co-applicant for the project approval.~~

(f) Nothing in this section shall be construed to limit the authority of the Department to require environmental permits or to apply and enforce environmental standards pursuant to State law."

SECTION 2. This act is effective when it becomes law.

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2013

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BILL DRAFT 2013-RIfz-4 [v.4] (11/29)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
12/7/2012 11:57:17 AM

Short Title: Adjust landfill permit fee timing. (Public)

Sponsors: (Primary Sponsor).

Referred to:

A BILL TO BE ENTITLED

AN ACT TO MAKE ADJUSTMENTS TO THE FEE SCHEDULE FOR PERMITS FOR SANITARY LANDFILLS AND TRANSFER STATIONS TO REFLECT EXTENSION OF THE DURATION OF THESE PERMITS AS DIRECTED BY S.L. 2012-187, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 130A-294 is amended by adding a new subsection to read:

"(a2) Permits for sanitary landfills and transfer stations shall be issued for: (i) a design and operation phase of five years, or (ii) a design and operation phase of ten years. A permit issued for a design and operation of phase of ten years shall be subject to a limited review within five years of the issuance date."

SECTION 2. G.S. 130A-295.8 reads as rewritten:

"**§ 130A-295.8. Fees applicable to permits for solid waste management facilities.**

(a) The Solid Waste Management Account is established as a nonreverting account within the Department. All fees collected under this section shall be credited to the Account and shall be used to support the solid waste management program established pursuant to G.S. 130A-294.

(b) As used in this section:

(1) "New permit" means any of the following:

a. An application for a permit for a solid waste management facility that has not been previously permitted by the Department. The term includes one site suitability review, the initial permit to construct, and one permit to operate the constructed portion of a phase included in the permit to construct.

b. An application that proposes to expand the boundary of a permitted waste management facility for the purpose of expanding the permitted activity.

c. An application that includes a proposed expansion to the boundary of a waste disposal unit within a permitted solid waste management facility.

d. An application for a substantial amendment to a solid waste permit, as defined in G.S. 130A-294.

(2) "Permit amendment" means any of the following:

a. An application for a permit to construct and one permit to operate for the second and subsequent phases of landfill development described in the approved facility plan for a permitted solid waste management facility.

b. An application for the five-year renewal of a permit for a permitted solid waste management facility or for a permit review of a permitted solid waste management facility.

c. Any application that proposes a change in ownership or corporate structure of a permitted solid waste management facility.

(3) "Permit modification" means any of the following:

a. An application for any change to the plans approved in a permit for a solid waste management facility that does not constitute a "permit amendment" or a "new permit".

b. A second or subsequent permit to operate for a constructed portion of a phase included in the permit to construct.

c. An application for a five-year limited review of a ten-year permit, as required by G.S. 130A-294(a2), including review of the operations plan, closure plan, post-closure plan, financial assurance cost estimates, environmental monitoring plans, and any other applicable plans for the facility.

(4) "Major permit modification" means an application for any change to the approved engineering plans for a sanitary landfill or transfer station permitted for a ten-year design capacity that does not constitute a "permit amendment," a "new permit," or "permit modification."

(c) An applicant for a permit shall pay an application fee upon submission of an application according to the following schedule:

(1) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, New ~~Permit—~~Permit (Five-Year) – $25,000.

(1a) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, New Permit (Ten-Year) – $38,500.

(2) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, ~~Amendment—~~Amendment (Five-Year) – $15,000.

(2a) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, Amendment (Ten-Year) – $28,500.

(3) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, ~~Modification—~~Modification (Five-Year) – $1,500.

(3a) Municipal Solid Waste Landfill accepting less than 100,000 tons/year of solid waste, Major Modification (Ten-Year) – $7,500.

(4) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, New ~~Permit—~~Permit (Five-Year) – $50,000.

(4a) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, New Permit (Ten-Year) – $77,000.

(5) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, ~~Amendment—~~Amendment (Five-Year) – $30,000.

(5a) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, Amendment (Ten-Year) – $57,000.

(6) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, ~~Modification—~~Modification (Five-Year) – $3,000.

(6a) Municipal Solid Waste Landfill accepting 100,000 tons/year or more of solid waste, Major Modification (Ten-Year) – $15,000.

(7) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, New ~~Permit~~ Permit (Five-Year) – $15,000.

(7a) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, New Permit (Ten-Year) – $22,500.

(8) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, ~~Amendment~~ Amendment (Five-Year) – $9,000.

(8a) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, Amendment (Ten-Year) – $16,500.

(9) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, ~~Modification~~ Modification (Five-Year) – $1,500.

(9a) Construction and Demolition Landfill accepting less than 100,000 tons/year of solid waste, Major Modification (Ten-Year) – $4,500.

(10) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, New ~~Permit~~ Permit (Five-Year) – $30,000.

(10a) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, New Permit (Ten-Year) – $46,000.

(11) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, ~~Amendment~~ Amendment (Five-Year) – $18,500.

(11a) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, Amendment (Ten-Year) – $34,500.

(12) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, ~~Modification~~ Modification (Five-Year) – $2,500.

(12a) Construction and Demolition Landfill accepting 100,000 tons/year or more of solid waste, Major Modification (Ten-Year) – $9,250.

(13) Industrial Landfill accepting less than 100,000 tons/year of solid waste, New ~~Permit~~ Permit (Five-Year) – $15,000.

(13a) Industrial Landfill accepting less than 100,000 tons/year of solid waste, New Permit (Ten-Year) – $22,500.

(14) Industrial Landfill accepting less than 100,000 tons/year of solid waste, ~~Amendment~~ Amendment (Five-Year) – $9,000.

(14a) Industrial Landfill accepting less than 100,000 tons/year of solid waste, Amendment (Ten-Year) – $16,500.

(15) Industrial Landfill accepting less than 100,000 tons/year of solid waste, ~~Modification~~ Modification (Five-Year) – $1,500.

(15a) Industrial Landfill accepting less than 100,000 tons/year of solid waste, Major Modification (Ten-Year) – $4,500.

(16) Industrial Landfill accepting 100,000 tons/year or more of solid waste, New ~~Permit~~ Permit (Five-Year) – $30,000.

(16a) Industrial Landfill accepting 100,000 tons/year or more of solid waste, New Permit (Ten-Year) – $46,000.

(17) Industrial Landfill accepting 100,000 tons/year or more of solid waste, ~~Amendment~~ Amendment (Five-Year) – $18,500.

(17a) Industrial Landfill accepting 100,000 tons/year or more of solid waste, Amendment (Ten-Year) – $34,500.

(18) Industrial Landfill accepting 100,000 tons/year or more of solid waste, ~~Modification~~ Modification (Five-Year) – $2,500.

(18a) Industrial Landfill accepting 100,000 tons/year or more of solid waste, Major Modification (Ten-Year) – $9,250.

(19) Tire Monofill, New Permit – $1,750.

(20) Tire Monofill, Amendment – $1,250.

(21) Tire Monofill, Modification – $500.

(22) Treatment and Processing, New Permit – $1,750.
(23) Treatment and Processing, Amendment – $1,250.
(24) Treatment and Processing, Modification – $500.
(25) Transfer Station, New ~~Permit~~ Permit (Five-Year) – $5,000.
(25a) Transfer Station, New Permit (Ten-Year) – $7,500.
(26) Transfer Station, ~~Amendment~~ Amendment (Five-Year) – $3,000.
(26a) Transfer Station, Amendment (Ten-Year) – $5,500.

(27) Transfer Station, ~~Modification~~ Modification (Five-Year) – $500.
(27a) Transfer Station, Major Modification (Ten-Year) – $1,500.
(28) Incinerator, New Permit – $1,750.
(29) Incinerator, Amendment – $1,250.
(30) Incinerator, Modification – $500.
(31) Large Compost Facility, New Permit – $1,750.
(32) Large Compost Facility, Amendment – $1,250.
(33) Large Compost Facility, Modification – $500.
(34) Land Clearing and Inert, New Permit – $1,000.
(35) Land Clearing and Inert, Amendment – $500.
(36) Land Clearing and Inert, Modification – $250.

(d) A permitted solid waste management facility shall pay an annual permit fee on or before 1 August of each year according to the following schedule:

(1) Municipal Solid Waste Landfill – $3,500.
(2) Post-Closure Municipal Solid Waste Landfill – $1,000.
(3) Construction and Demolition Landfill – $2,750.
(4) Post-Closure Construction and Demolition Landfill – $500.
(5) Industrial Landfill – $2,750.
(6) Post-Closure Industrial Landfill – $500.
(7) Transfer Station – $750.
(8) Treatment and Processing Facility – $500.
(9) Tire Monofill – $500.
(10) Incinerator – $500.
(11) Large Compost Facility – $500.
(12) Land Clearing and Inert Debris Landfill – $500.

(e) The Department shall determine whether an application for a permit for a solid waste management facility that is subject to a fee under this section is complete within 90 days after the Department receives the application for the permit. A determination of completeness means that the application includes all required components but does not mean that the required components provide all of the information that is required for the Department to make a decision on the application. If the Department determines that an application is not complete, the Department shall notify the applicant of the components needed to complete the application. An applicant may submit additional information to the Department to cure the deficiencies in the application. The Department shall make a final determination as to whether the application is complete within the later of: (i) 90 days after the Department receives the application for the permit less the number of days that the applicant uses to provide the additional information; or (ii) 30 days after the Department receives the additional information from the applicant. The Department shall issue a draft permit decision on an application for a permit within one year after the Department determines that the application is complete. The Department shall hold a public hearing and accept written comment on the draft permit decision for a period of not less than 30 or more than 60 days after the Department issues a draft permit decision. The Department shall issue a final permit decision on an application for a permit within 90 days after the comment period on the draft permit decision closes. The

Department and the applicant may mutually agree to extend any time period under this subsection. If the Department fails to act within any time period set out in this subsection, the applicant may treat the failure to act as a denial of the permit and may challenge the denial as provided in Chapter 150B of the General Statutes."

SECTION 3. This act is effective when it becomes law, and applies to permit applications submitted on or after July 1, 2013.

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2013

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BILL DRAFT 2013-RIz-5 [v.5] (11/15)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
12/7/2012 11:53:26 AM

Short Title:	Bernard Allen Fund Modifications.	(Public)
Sponsors:	(Primary Sponsor).	
Referred to:		

A BILL TO BE ENTITLED

AN ACT TO MODIFY THE BERNARD ALLEN MEMORIAL EMERGENCY DRINKING WATER FUND TO ALLOW GREATER FLEXIBILITY FOR USE OF MONIES IN THE FUND, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 87-98 reads as rewritten:

"**§ 87-98. Bernard Allen Memorial Emergency Drinking Water Fund.**

(a) The Bernard Allen Memorial Emergency Drinking Water Fund is established under the control and direction of the Department. The Fund shall be a nonreverting, interest-bearing fund consisting of monies appropriated by the General Assembly or made available to the Fund from any other source and investment interest credited to the Fund.

(b) The Fund may be used to pay ~~for notification,~~for:

(1) Notification, to the extent practicable, of persons aged 18 and older who reside in any dwelling unit, and the senior official in charge of any business, at which drinking water is supplied from a private drinking water well or improved spring that is located within 1,500 feet of, and at risk from, known groundwater contamination. The senior official in charge of the business shall take reasonable measures to notify all employees of the business of the groundwater contamination, including posting a notice of the contamination in a form and at a location that is readily accessible to the employees of the business. ~~The Fund may also be used by the Department to pay the~~

(2) The costs of testing of private drinking water wells and improved springs for suspected contamination up to once every three years upon request by a person who uses the ~~well and for the~~ well, or more frequent testing if the concentration of one or more contaminants in a private drinking water well is increasing over time and there is a significant risk that the concentration of a contaminant will exceed the drinking water action levels set forth in subsection (c) of this section within a three year period.

(3) Additional testing to confirm the results of a previous test.

(4) The temporary or permanent provision of alternative drinking water supplies to persons whose drinking water well or improved spring is contaminated. Under this ~~subsection.~~section, an alternative drinking water supply includes

the repair, such as use of a filtration system, or replacement of a contaminated well or the connection to a public water supply.

(5) Monitoring of filtration systems used in connection with temporary or permanent alternative drinking water supplies provided pursuant to this section.

(c) The Department shall disburse monies from the Fund based on financial need and on the risk to public health posed by groundwater contamination and shall give priority to the provision of services under this section to instances when an alternative source of funds is not available. The Fund shall not be used to provide alternative water supply to households with incomes greater than three hundred percent (300%) of the current federal poverty level. The Fund may be used to provide alternative drinking water supplies if the Department determines that the concentration of one or more contaminants in the private drinking water well or improved spring exceeds the federal maximum contaminant level, or the federal drinking water action level as defined in 40 Code of Federal Regulations § 141.1 through § 141.571 (1 July 2007) and 40 Code of Federal Regulations § 143.3 (1 July 2007). For a contaminant for which a federal maximum contaminant level or drinking water action level has not been established, the State groundwater standard established by the Environmental Management Commission for the concentration of that contaminant shall be used to determine whether the Fund may be used to provide alternative drinking water supplies. The Fund may also be used to provide alternative drinking water supplies as provided in this section if the Department determines that the concentration of one or more contaminants in a private drinking water well is increasing over time and that there is a significant risk that the concentration of a contaminant will exceed the federal maximum contaminant level or drinking water action level, or the State groundwater standard. A determination of the concentration of a contaminant shall be based on a sample of water collected from the private drinking water well within the past 12 months.

(c1) In disbursing monies from the Fund, the Department shall give preference to provision of permanent replacement water supplies by connection to public water supplies and repair or replacement of contaminated wells over the provision of temporary water supplies. In providing alternative drinking water supplies, the Department shall give preference to connection to a public water supply system or to construction of a new private drinking water well over the use of a filtration system if the Department determines that the costs of periodic required maintenance of the filtration system would be cost-prohibitive for users of the alternative drinking water supply.

(c2) If the Department provides an alternative drinking water supply by extension of a waterline, the Department may disburse from the Fund no more than ~~ten~~ fifty thousand dollars ~~($10,000)~~($50,000) per household or other service connection. For projects where more than ten residences are eligible for alternative water supplies under this section, no~~No~~ more than one-third of the total cost of the project may be paid from the Fund. The Department may combine monies from the Fund with monies from other sources in order to pay the total cost of the project.

(c3) The Fund shall be used to provide alternative drinking water supplies only if the Department determines that the person or persons who are responsible for the contamination of the private drinking water well is or are not financially viable or cannot be identified or located and if the Department determines that one of the following applies:

(1) The contamination of the private drinking water well is naturally occurring.

(2) The owner of the property on which the private drinking water well is located did not cause or contribute to the contamination or control the source of the contamination.

(3) The source of the contamination is the application or disposal of a hazardous substance or pesticide that occurred without the consent of the owner of the property on which the private drinking water well is located.

(c4) The Department may use up to one hundred thousand dollars ($100,000) annually of the monies in the Fund to pay the personnel and other direct costs associated with the implementation of this section.

(c5) The Fund shall not be used for remediation of groundwater contamination.

(c6) Nothing in this section expands, contracts, or modifies the obligation of responsible parties under Article 9 or 10 of Chapter 130A of the General Statutes, this Article, or Article 21A of this Chapter to assess contamination, identify receptors, or remediate groundwater or soil contamination.

(c7) In disbursing monies from the Fund for replacement water supplies, the Department shall give priority to circumstances in which a well is contaminated as the result of non-naturally occurring groundwater contamination in the area over circumstances in which a well has naturally occurring contamination.

(d) The Department shall establish criteria by which the Department is to evaluate applications and disburse monies from this Fund and may adopt any rules necessary to implement this section.

(e) The Department, in consultation with the Commission for Public Health and local health departments, shall report no later than ~~1 October~~October 1 of each year to the Environmental Review Commission, the House of Representatives and Senate Appropriations Subcommittees on Natural and Economic Resources, and the Fiscal Research Division of the General Assembly on the implementation of this section. The report shall include the purpose and amount of all expenditures from the Fund during the prior fiscal year, a discussion of the benefits and deficiencies realized as a result of the section, and may also include recommendations for any legislative action."

SECTION 2. This act is effective when it becomes law.

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2013

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BILL DRAFT 2013-TFz-1 [v.3] (12/06)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
12/7/2012 2:53:31 PM

Short Title: Amend Environmental Laws 2013. (Public)

Sponsors: (Primary Sponsor).

Referred to:

A BILL TO BE ENTITLED

AN ACT TO AMEND CERTAIN ENVIRONMENTAL AND NATURAL RESOURCES LAWS TO: (1) ALLOW 10-YEAR PHASE LANDFILL DEVELOPMENTS TO APPLY FOR A PERMIT TO OPERATE; AND (2) CLARIFY THE PROCESS FOR APPEALS FROM CIVIL PENALTIES ASSESSED BY A LOCAL GOVERNMENT THAT HAS ESTABLISHED AND ADMINISTERS AN EROSION AND SEDIMENTATION CONTROL PROGRAM APPROVED UNDER G.S. 113A-60, AND TO PROVIDE THAT CIVIL PENALTIES ASSESSED BY A LOCAL GOVERNMENT PURSUANT TO THE SEDIMENTATION POLLUTION CONTROL ACT OF 1973 SHALL BE REMITTED TO THE CIVIL PENALTY AND FORFEITURE FUND, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

The General Assembly of North Carolina enacts:

SECTION 1. Section 15.1 of S.L. 2012-187 reads as rewritten:

"**SECTION 15.1.** No later than July 1, 2013, the Commission for Public Health shall adopt rules to allow applicants for sanitary landfills the option to (i) apply for a permit to construct and operate a five-year phase of landfill development and apply to amend the permit to construct and operate subsequent five-year phases of landfill development; or (ii) apply for a permit to construct and operate a 10-year phase of landfill development and apply to amend the permit to construct and operate subsequent 10-year phases of landfill development, with a limited review of the permit five years after issuance of the initial permit and five years after issuance of each amendment for subsequent phases of development. No later than July 1, 2013, the Commission shall also adopt rules to allow applicants for permits for transfer stations the option to (i) apply for a permit with a five-year duration to construct and operate a transfer station; or (ii) apply for a permit with a 10-year duration to construct and operate a transfer station, with a limited review of the permit five years after issuance of the initial permit and five years after issuance of any amendment to the permit. In developing these rules, the Department of Environment and Natural Resources shall examine the current fee schedule for permits for sanitary landfills and transfer stations as set forth under G.S. 130A-295.8 and formulate recommendations for adjustments to the current fee schedule sufficient to address any additional demands associated with review of permits issued for 10-year phases of landfill development and the issuance permits with a duration of up to 10 years for transfer stations.

The Department shall report its findings and recommendations, including any legislative proposals, to the Environmental Review Commission on or before December 1, 2012. The rules required by this section shall not become effective until the fee schedule set forth under G.S. 130A-295.8 is amended as necessary to address any additional demands associated with review of permits issued for 10-year phases of landfill development and the issuance of permits with a duration of up to 10 years to construct and operate transfer stations."

SECTION 2. G.S. 113A-64 reads as rewritten:

"**§ 113A-64. Penalties.**

(a) Civil Penalties. –

(1) Any person who violates any of the provisions of this Article or any ordinance, rule, or order adopted or issued pursuant to this Article by the Commission or by a local government, or who initiates or continues a land-disturbing activity for which an erosion and sedimentation control plan is required except in accordance with the terms, conditions, and provisions of an approved plan, is subject to a civil penalty. The maximum civil penalty for a violation is five thousand dollars ($5,000). A civil penalty may be assessed from the date of the violation. Each day of a continuing violation shall constitute a separate violation.

(2) The Secretary or a local government that administers an erosion and sedimentation control program approved under G.S. 113A-60 shall determine the amount of the civil penalty and shall notify the person who is assessed the civil penalty of the amount of the penalty and the reason for assessing the penalty. The notice of assessment shall be served by any means authorized under ~~G.S. 1A-1, Rule 4, and~~ G.S. 1A-1. A notice of assessment by the Secretary shall direct the violator to either pay the assessment or contest the assessment within 30 days by filing a petition for a contested case under Article 3 of Chapter 150B of the General Statutes. If a violator does not pay a civil penalty assessed by the Secretary within 30 days after it is due, the Department shall request the Attorney General to institute a civil action to recover the amount of the assessment. A notice of assessment by a local government shall direct the violator to either pay the assessment or contest the assessment within 30 days by filing a petition for hearing with the local government as directed by procedures within the local ordinances or regulations adopted to establish and enforce the erosion and sedimentation control program. If a violator does not pay a civil penalty assessed by a local government within 30 days after it is due, the local government may institute a civil action to recover the amount of the assessment. The civil action may be brought in the superior court of any county where the violation occurred or the violator's residence or principal place of business is located. A civil action must be filed within three years of the date the assessment was due. An assessment that is not contested is due when the violator is served with a notice of assessment. An assessment that is contested is due at the conclusion of the administrative and judicial review of the assessment.

(3) In determining the amount of the penalty, the Secretary or a local government shall consider the degree and extent of harm caused by the violation, the cost of rectifying the damage, the amount of money the violator saved by noncompliance, whether the violation was committed willfully and the prior record of the violator in complying or failing to comply with this ~~Article.~~Article, or any ordinance, rule, or order adopted or issued pursuant to this Article by the Commission or by a local government.

(4) Repealed by Session Laws 1993 (Reg. Sess., 1994), c. 776, s. 11.

(5) The clear proceeds of civil penalties collected by the Department or other State agency or a local government under this subsection shall be remitted to the Civil Penalty and Forfeiture Fund in accordance with G.S. 115C-457.2. ~~Civil penalties collected by a local government under this subsection shall be credited to the general fund of the local government as nontax revenue.~~

(b) Criminal Penalties. – Any person who knowingly or willfully violates any provision of this Article or any ordinance, rule, regulation, or order duly adopted or issued by the Commission or a local government, or who knowingly or willfully initiates or continues a land-disturbing activity for which an erosion and sedimentation control plan is required, except in accordance with the terms, conditions, and provisions of an approved plan, shall be guilty of a Class 2 misdemeanor that may include a fine not to exceed five thousand dollars ($5,000)."

SECTION 3. This act is effective when it becomes law.

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2013

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BILL DRAFT 2013-TAz-1 [v.3] (11/15)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
12/10/2012 4:42:27 PM

Sponsors: (Primary Sponsor).

Referred to:

A JOINT RESOLUTION EXPRESSING THE NORTH CAROLINA GENERAL ASSEMBLY'S OPPOSITION TO URANIUM MINING IN VIRGINIA, INCLUDING THE PROPOSED VIRGINIA URANIUM, INC. PROJECT AT COLES HILL, AND TO THE ELIMINATION OF THE EXISTING LEGISLATIVE MORATORIUM ON URANIUM MINING IN VIRGINIA, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

Whereas, in the past four years there have been a number of studies relating to uranium mining in Virginia, several of which have dealt specifically with the proposed Virginia Uranium, Inc. mine and milling facility at Coles Hill in Pittsylvania County, upstream of the John H. Kerr Reservoir, Lake Gaston, and communities in northeast North Carolina; and

Whereas, two of the studies consisted of economic assessments of the proposed Coles Hill project, and both studies found that one large, or several small, accidents or releases would significantly reverse the economic benefit of the project, even if no serious harm to people or the environment occurred; and

Whereas, at the request of the Virginia Coal and Energy Commission, the National Academy of Sciences (NAS) has completed a study entitled "Uranium Mining in Virginia: Scientific, Technical, Environmental, Human Health and Safety, and Regulatory Aspects of Uranium Mining and Processing in Virginia," the purpose of which was to address a series of detailed questions about uranium mining, processing, and reclamation in order to assist the Commonwealth of Virginia in making decisions concerning the proposed uranium mining project; and

Whereas, the NAS study indicates that: (1) disposal cells in which radioactive tailings are stored represent significant long-term risks for radiological and other contamination; (2) limited data exists to confirm the long-term effectiveness of uranium tailings disposal cells; and (3) extreme natural events combined with human error have the potential to result in the release of contaminants if disposal cells are not designed, constructed, or maintained properly, or if such cells fail to perform as envisioned; and

Whereas, the NAS study concluded that the Commonwealth of Virginia has no experience with uranium mining, that the federal government has little or no experience applying existing laws and regulations to states with wet climates and extreme precipitation events, and that "there are gaps in legal and regulatory coverage for activities involved in uranium mining, processing, reclamation, and long-term stewardship...[and]...steep hurdles to be surmounted before mining and/or processing could be established within a regulatory environment that is

appropriately protective of the health and safety of workers, the public, and the environment."; and

Whereas, Michael Baker Engineers and the National Center for Computational Hydroscience and Engineering, under contract to the City of Virginia Beach, completed a study (the "Michael Baker Study") of the downstream water quality impacts that would occur from a hypothetical, catastrophic breach of a single, above-grade uranium mine tailings cell located near Coles Hill; and

Whereas, it is acknowledged that if all of the tailings are secured in properly designed, constructed, and maintained below-grade disposal cells, the likelihood of a major release of tailings to surface water is significantly reduced; and

Whereas, although existing regulations indicate that below-grade disposal of uranium tailings is preferable to above-grade disposal, exceptions have been made for environmental reasons, such as conflict with groundwater conditions, or for reasons of economic feasibility, both of which may exist at the Coles Hill site or at heretofore undiscovered uranium mining sites; and

Whereas, the NAS study specifically dismissed the notion that below-grade disposal of tailings would automatically be required, noting that the first mine and mill permit to be issued in more than three decades allowed partially above-grade disposal cells, notwithstanding the fact that the safest and most environmentally sound solution was below-grade disposal; and

Whereas, the Michael Baker Study indicates that in the aftermath of an assumed catastrophe, radioactivity in the main body of Kerr Lake and Lake Gaston would remain above United States Environmental Protection Agency Maximum Contaminant Levels for up to three months during wet years and up to sixteen months during dry years; and

Whereas, for a number of legal, regulatory, political, institutional, and technical reasons, it is highly likely that a major release of tailings downstream from the Coles Hill site would force the North Carolina communities downstream, including Kerr Lake, Lake Gaston, and Roanoke Rapids to discontinue water withdrawals for indefinite periods of time; and

Whereas, release of radioactive tailings such as that modeled in the Michael Baker Study would have devastating adverse economic and other effects on the communities in northeastern North Carolina; and

Whereas, even a release of radioactive tailings of lesser proportions than the worst-case scenario modeled in the Michael Baker Study would result in serious economic impacts to those areas even after radioactivity levels declined to levels within legal limits because of the inevitability of negative public perceptions and the resultant damage to the region's image and reputation as attractive business and vacation destinations; and

Whereas, while the probability of a major tailings release is small, the adverse consequences of such a release would be enormous and unacceptable; and

Whereas, on July 9, 2012, the North Carolina delegation to the Roanoke River Basin Bi-State Commission stated, by resolution, its opposition to uranium mining in Virginia, including the proposed Virginia Uranium, Inc. project at Coles Hill, and to the elimination of the existing legislative moratorium on uranium mining in Virginia; and

Whereas, on July 9, 2012, the North Carolina delegation to the Roanoke River Basin Bi-State Commission requested, by resolution, that the Roanoke River Bi-State Commission concur with the North Carolina delegation to the Commission by official resolution; and

Whereas, on August 27, 2012, the Roanoke River Basin Bi-State Commission adopted a resolution advising the General Assemblies and the Governors of the Commonwealth of Virginia and the State of North Carolina on the mining and milling of uranium in Virginia; and

Whereas, on August 27, 2012 the Roanoke River Basin Bi-State Commission, by resolution, supported the prohibition on uranium mining in Virginia, and stated its opposition to elimination or modification of the existing legislative moratorium in Virginia; and

Whereas, the Roanoke River Basin Bi-State Commission transmitted its resolution to the General Assembly of North Carolina; Now therefore,

Be it resolved, by the House of Representatives, the Senate concurring,

SECTION 1. The General Assembly of North Carolina expresses its opposition to uranium mining in Virginia, including the proposed Virginia Uranium, Inc. project at Coles Hill, and further opposes the elimination of the existing legislative moratorium on uranium mining in Virginia.

SECTION 2. The Secretary of State shall transmit certified copies of this resolution to each member of the North Carolina Congressional delegation, the General Assembly of Virginia, and the Governor of Virginia.

SECTION 3. This resolution is effective upon ratification.

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2013

U D

BILL DRAFT 2013-RIz-7 [v.6] (12/05)

(THIS IS A DRAFT AND IS NOT READY FOR INTRODUCTION)
12/7/2012 4:52:44 PM

Short Title: Sedimentation Ctrl./Financial Assurance. (Public)

Sponsors: (Primary Sponsor).

Referred to:

A BILL TO BE ENTITLED

AN ACT TO REQUIRE FINANCIAL ASSURANCE FOR LAND-DISTURBING ACTIVITY INVOLVING MORE THAN TWENTY ACRES TO ENSURE THAT SUFFICIENT FUNDS ARE AVAILABLE TO COMPLY WITH THE REQUIREMENTS OF THE SEDIMENTATION POLLUTION CONTROL ACT OF 1973.

The General Assembly of North Carolina enacts:

SECTION 1. Article 4 of Chapter 113A of the General Statutes is amended by adding a new section to read:

"**§ 113A-54.3. Financial assurance for establishment of permanent ground cover**

(a) No person shall initiate any land-disturbing activity that will disturb more than 20 acres on a tract unless the person establishes financial assurance that will ensure that sufficient funds are available to comply with the requirements of this Article, and any rule, ordinance, or order adopted or issued pursuant to this Article by the Commission or by an delegated local program with jurisdiction, until permanent ground cover sufficient to control erosion has been established and the site has been closed by the Department or delegated local program. State and local governmental agencies, including water or sewer authorities or districts, organized under the appropriate Articles of the General Statutes shall not be subject to the provisions of this section. For purposes of this section, "delegated local program" means a local government that administers an erosion and sedimentation control program approved under G.S. 113A-60.

(b) The financial assurance required by this section shall be in one of the following forms:

(1) A surety performance bond made by a surety bonding company licensed and authorized to do business in North Carolina.

(2) A cash deposit in the form of an assignment to the permitting entity of a certificate of deposit with an institution licensed and authorized to do business in North Carolina as security for the bond.

(3) A cash deposit in the form of an official bank check drawn in favor of the permitting entity and deposited with same.

(4) An irrevocable letter of credit from an institution licensed and authorized to do business in North Carolina deposited with the permitting entity. A letter of credit must be accompanied by a performance guarantee in the amount of one hundred twenty-five percent (125%) of the required surety.



(5) Security in a form not listed above as established by rule by the Commission.

(c) Assets used to meet the financial assurance requirements of this section shall be in a form that will allow the Department or a delegated local program to readily access funds for the purposes set out in this section. Assets used to meet financial assurance requirements of this section shall not be accessible to the person conducting the land-disturbing activity except as approved by the Department or the applicable delegated local program.

(d) The financial assurance shall be continuous in nature and shall remain in force until cancelled or released by the Department or an applicable delegated local program. Cancellation shall be effectuated only upon 60 days written notice to the Department or delegated local program and the financially responsible party.

(e) The Department and each delegated local program shall establish a standard rate per disturbed acre in order to determine the amount of financial assurance required. The standard rate shall be sufficient to assure compliance with the requirements of this Article, and any rule, ordinance, or order adopted or issued pursuant to this Article by the Commission or by a delegated local program until permanent ground cover sufficient to control erosion has been established and the site has been closed by the Department or delegated local program. If an applicant disagrees with a determination by the Director or a delegated local program concerning the amount of financial assurance required for a land-disturbing project, the applicant may submit an estimate of costs for installing and maintaining the erosion and sedimentation control measures as shown on the approved plan and costs for establishing permanent ground cover from a third party contractor to be used as the amount of financial assurance. The estimate shall be provided to the Director or delegated local program within 30 days following the receipt of the initial determination as to the amount of financial assurance required from the Director or delegated local program. The Director or delegated local program shall notify the applicant within 30 days of receiving the estimate from the third party contractor of the final determination as to the amount of financial assurance required, and the process and conditions used to set the amount of financial assurance.

(f) The amount of the financial assurance required may be reduced as permanent ground cover is established on portions of the area of land disturbance. The financial assurance shall be released when the Department or delegated local program determines that permanent ground cover sufficient to control erosion has been established and the site has been closed by the Department or delegated local program.

(g) The financial assurance shall be subject to forfeiture to the Department or delegated local program if uncorrected violations of G.S. 113A-57 continue at a site for more than 60 days.

(h) If the Department or delegated local program determines that forfeiture of the financial assurance is necessary, it shall request the Attorney General, or in the case of a delegated local program, its local attorney, to initiate forfeiture proceedings against the financial assurance filed by the applicant; provided, however, that no such request shall be made for forfeiture until the applicant has been given written notice of the violation and a reasonable opportunity to take corrective action. A proceeding shall be brought in the name of the State of North Carolina or the local government, in the case of delegated local programs. In such proceedings, the amount of the financial assurance, less any amount released by the Department or delegated local program, shall be treated as liquidated damages and subject to forfeiture. All funds collected as a result of such proceedings shall be placed in a special fund and used by the Department or the delegated local program to bring the land-disturbing activity into compliance with G.S. 113A-57. Any funds in excess of the costs of achieving compliance shall be refunded to the applicant. Forfeiture of the financial assurance shall not release the person conducting the land-disturbing activity from the responsibility to comply with the

provisions of this Article, and any rule, ordinance, or order adopted or issued pursuant to this Article by the Commission or by a delegated local program."

SECTION 2. This act becomes effective July 1, 2013, and applies to land-disturbing activity initiated on or after that date.

11/19

General Assembly of North Carolina

Environmental Review Commission
State Legislative Building
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December 13, 2012

Governor Bob McDonnell
Office of the Governor
Patrick Henry Building, 3rd Floor
1111 East Broad Street
Richmond, Virginia 23219

Re: Opposition to possible uranium mining in Virginia

Dear Governor McDonnell,

The Environmental Review Commission is a permanent joint commission of the North Carolina General Assembly. The Commission is charged with reviewing, studying, and recommending actions that relate to the environment, public health, and the protection of the environment and public health in North Carolina.

The Commission has received information about the possible elimination of the legislative moratorium on uranium mining in the Commonwealth of Virginia and the mining project proposed by Virginia Uranium, Inc. in Coles Hill in Pittsylvania County. The proposed Coles Hill uranium mining site is located upstream from John H. Kerr reservoir, Lake Gaston, and many communities in northeast North Carolina. The proposed mining and milling operations may produce 11 million cubic yards of radioactive tailings stored in aboveground impoundments of up to 40 acres in size.

The Commission learned that the modeled impacts of a catastrophic breach of an aboveground uranium tailings impoundment on downstream water quality in Kerr Lake and Lake Gaston could result in radiation above the United States Environmental Protection Agency Maximum Contaminant Levels for up to three months during wet years and up to sixteen months during dry years. The North Carolina Department of Environment and Natural Resources stated that a release of radioactive tailings could have devastating adverse socioeconomic impacts on the communities of northeastern North Carolina including:

- Impacts to the public water supply of more than 118,000 North Carolinians

- Impacts to numerous industrial facilities
- Impacts on over 60 agricultural operations in Bertie, Granville, Halifax, Vance, and Warren counties
- Impacts on recreation and tourism at Kerr Lake and Lake Gaston with possible economic losses of more than $15 million per year

At its December 13, 2012 meeting, the Commission expressed significant concern regarding the potential lifting of the existing legislative moratorium on uranium mining in Virginia. The Commission requests that you consider the possible adverse impacts to Kerr Lake, Lake Gaston, and many communities in northeastern North Carolina if the existing legislative moratorium on uranium mining is lifted and mining activities commence by Virginia Uranium, Inc. at Coles Hill.

Thank you for your consideration of this matter.

Sincerely,

Senator David Rouzer Representative Mitch Gillespie Representative Ruth Samuelson

Co-chairs, Environmental Review Commission

cc: Members of the Environmental Review Commission
[Members of the North Carolina Congressional Delegation]
Tom Reeder
Jeffrey Hudson