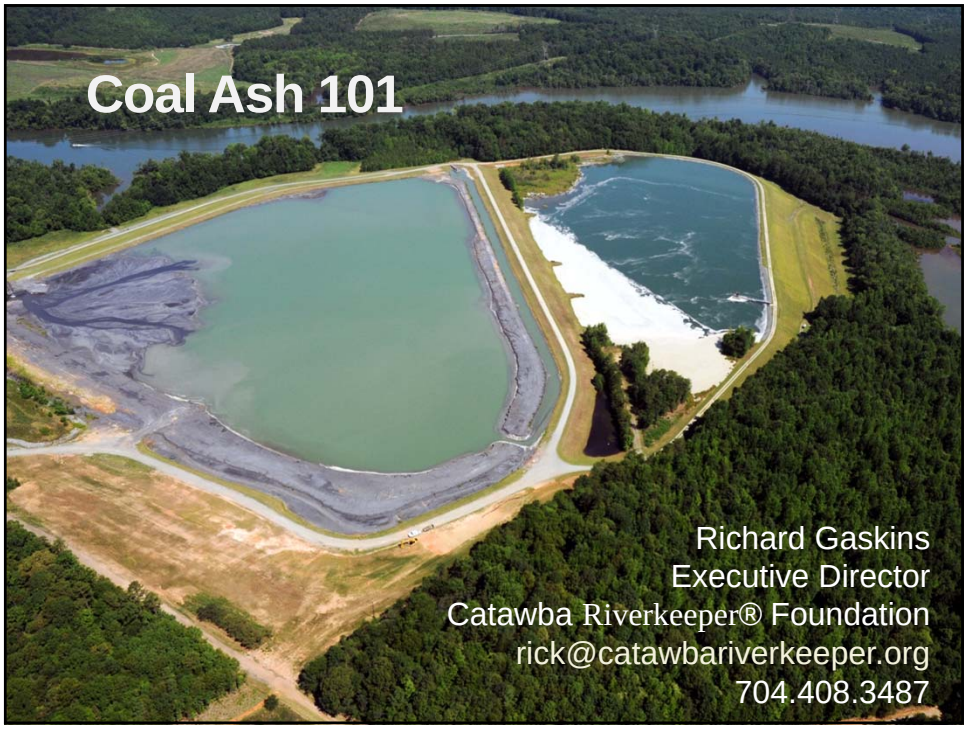
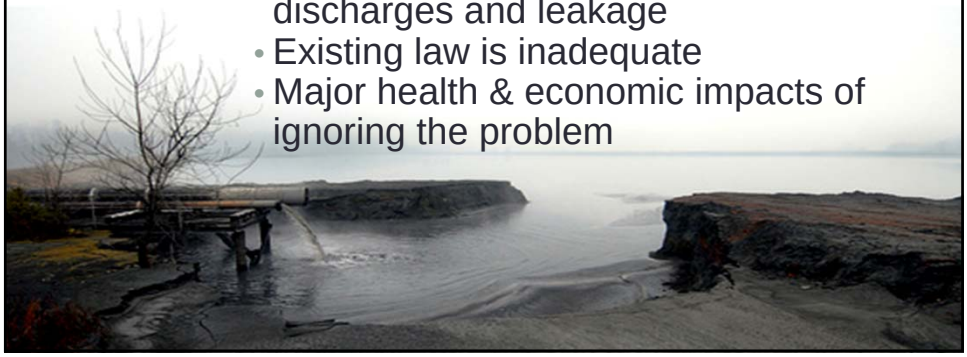


Overview

- Summary
- Background
- Dan River context
- Facts about coal ash
- Issues
  - Water quality issues
  - Risk of catastrophic failures
- Legislative issues

Summary

- Spills are major problem in the Catawba basin but my focus will be on coal ash
- Catastrophic failures such as Dan River and Kingston are inevitable if ash is left in unlined pits beside waterways
- Significant long-term risk from ongoing discharges and leakage
- Existing law is inadequate
- Major health & economic impacts of ignoring the problem



Background

Recent events highlight one aspect of the issue

Avoid contact with water and sediment from the stream, and not to eat any fish or shellfish from that section of the Dan.

- N.C. Department of Health and Human Services

"In all honesty, the numbers we're seeing are of concern for the long-term health of that river and all of the species that rely on it."

- Jamie Kritzer, NCDENR

"The Dan River does not have a clean bill of health. …The bottom line remains that we are concerned for the long-term health of the Dan River. We will continue to test the water in the river as we assess the spill's impact and determine the most appropriate ways to clean up the river. We are in this for the long haul.''

- Tom Reeder, NCDENR

“We need to make sure this never happens again in North Carolina.”

- Governor McCrory, February 6, 2014

"Just letting them [ash ponds] sit there is not the answer to the problem."

- Sen. Tom Apodaca, R-Henderson

“You have our complete, 100 percent commitment to do it right. We are accountable and we will make it right.”

- Paul Newton, President, Duke Energy Utility Operations

As of February 9, Duke said it has no timetable for removing the waste from its leaky unlined ponds.

- "We will rely on science to close ash basins in a way that protects groundwater long-term and is prudent for customers and plant neighbors."
- "Closing ash basins provides the ultimate resolution to these issues, and site-specific engineering studies to determine the most appropriate closure method for each are well under way."

http://www.charlotteobserver.com/2014/02/09/4677837/nc-regulators-shielded-dukes-coal.html#.Uv5dOPldXRs#storylink=cpy

Coal Ash of the Catawba vs. the Dan

In only 29 miles along the Catawba River: 3 Sites. 4 ponds. 445 acres. 5 billion gallons.

Catawba RIVERKEEPER®
ADVOCACY • EDUCATION • PROTECTION

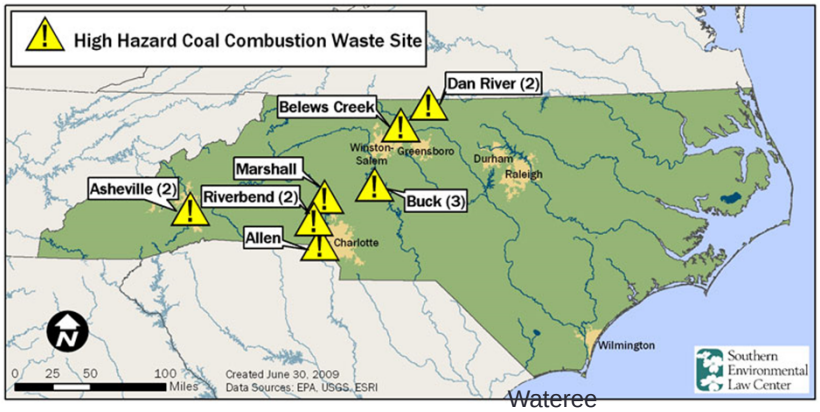



Facility	Dan River Steam Station	Riverbend Steam Station	Allen Steam Station	Marshall Steam Station
City/Town	Eden, NC	Mount Holly, NC	Belmont, NC	Terrell, NC
Waterway On Which Coal Ash Sits	Dan River	Mountain Island Lake (Catawba River)	Lake Wylie (Catawba River)	Lake Norman (Catawba River)
Closest Drinking Water Intakes	Danville, VA; South Boston, VA	Charlotte-Mecklenburg, NC; Gastonia-Gaston, NC; Mount Holly, NC	Belmont, NC; Rock Hill, SC	Mooresville, NC; Lincoln County, NC; Charlotte-Mecklenburg, NC
Year Coal Ash Ponds First Constructed	1954	1950	1965	1963
New Coal Ash Being Generated?	No	No	Yes	Yes
Total Acreage of Coal Ash Ponds	[illegible]	71	+ 62 acres (inactive)	[illegible]
Total Volume (gallons) of Coal Ash Ponds	[illegible]	[illegible]	[illegible] (active; inactive unknown)	2,243,487,[illegible]
Crest Height of Coal Ash Ponds (feet)	[illegible]	80	75	[illegible]
Coal Ash Ponds Unlined?	Yes	Yes	Yes	Yes
On 2010 List of EPA High Hazard Impoundments? (44 Sites)	Yes	Yes	Yes	Yes
Has Site Had a Reported Failure?	Yes (February 2014)	No	Yes (January 1983)	No
Impounding Dike(s) Constructed on Foundation of Ash?	Yes	Yes	Yes	No
Groundwater Contamination Reported by Duke's Wells?	Yes	Yes	Yes	Yes
Illegal Discharges of Seepage?	Yes	Yes	Yes	Unknown
Cited for Maintenance Problems in Engineering Reports? (e.g., sloughing, vegetation and roots, animal burrows)	Yes	Yes	Yes	Yes
Coal Ash Ponds Permitted for Dumping Waste Chemicals?	Yes	Yes	Yes	Yes

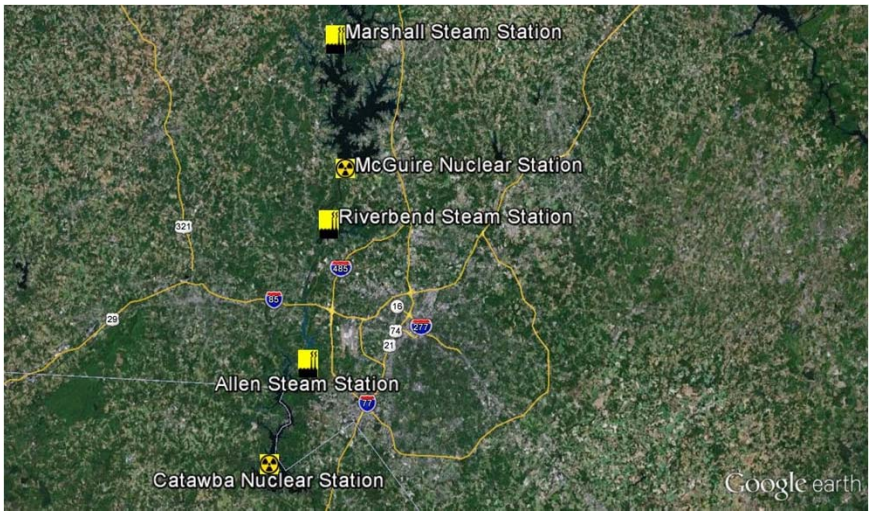
Table compiled from engineering reports and information requests received by the EPA from Duke Energy. For more information, visit www.CatawbaRiverkeeper.org and find us on Facebook.

Coal Ash Waste

- EPA Identified 45 coal ash ponds as High Hazard Potential
  - **7 are in North Carolina**
  - **4 of these 45 are along the Catawba River**
  - **Additional inactive waste ponds on the Catawba**



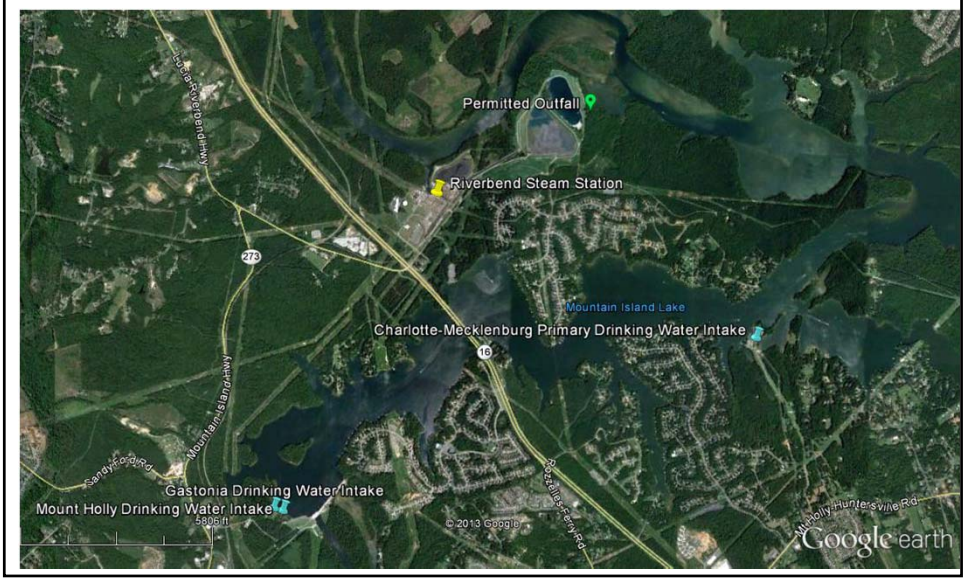
Charlotte-area Power Plants

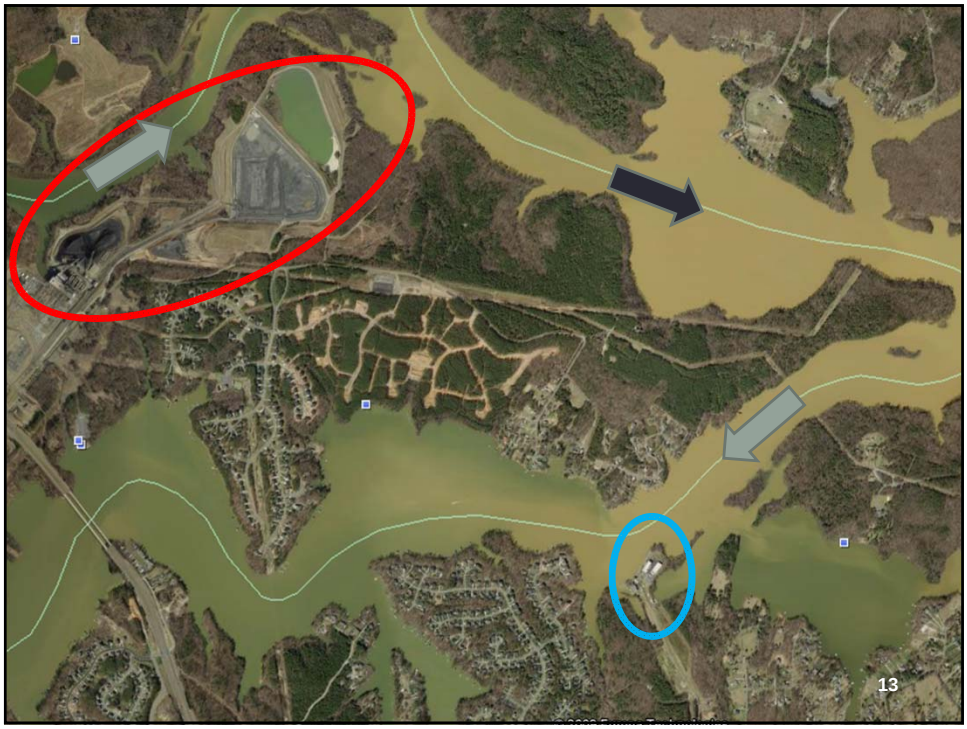


Lake Norman (Marshall)

Lake Wylie (Allen)

Mountain Island Lake (Riverbend)





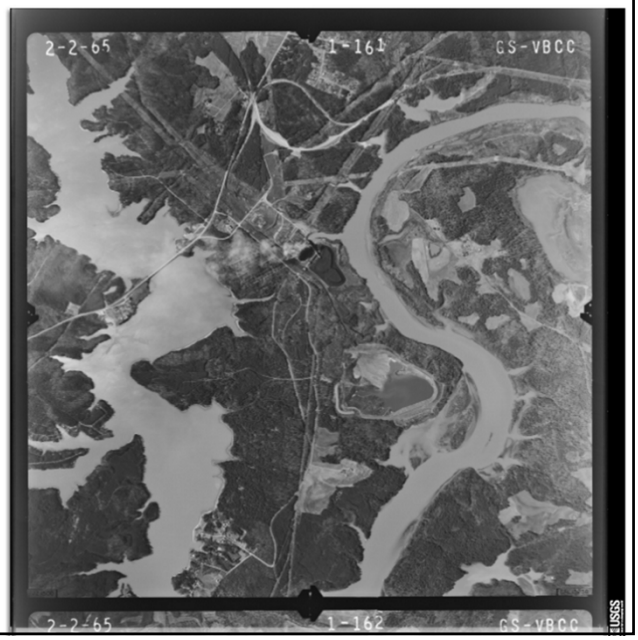
Riverbend

- Mount Holly, NC
- Plant built in 1920s; waste pond at current location in 1950
- Two UNLINED ponds cover 71 acres
- Crest is 80 feet above surface of Mountain Island Lake
  - Lake is also a drinking water reservoir for 860,000 people in Charlotte-Mecklenburg, Gastonia, Mount Holly, Matthews, Mint Hill and other municipalities
- Power generation ceased as of April 1, 2013
  - Ponds remain active

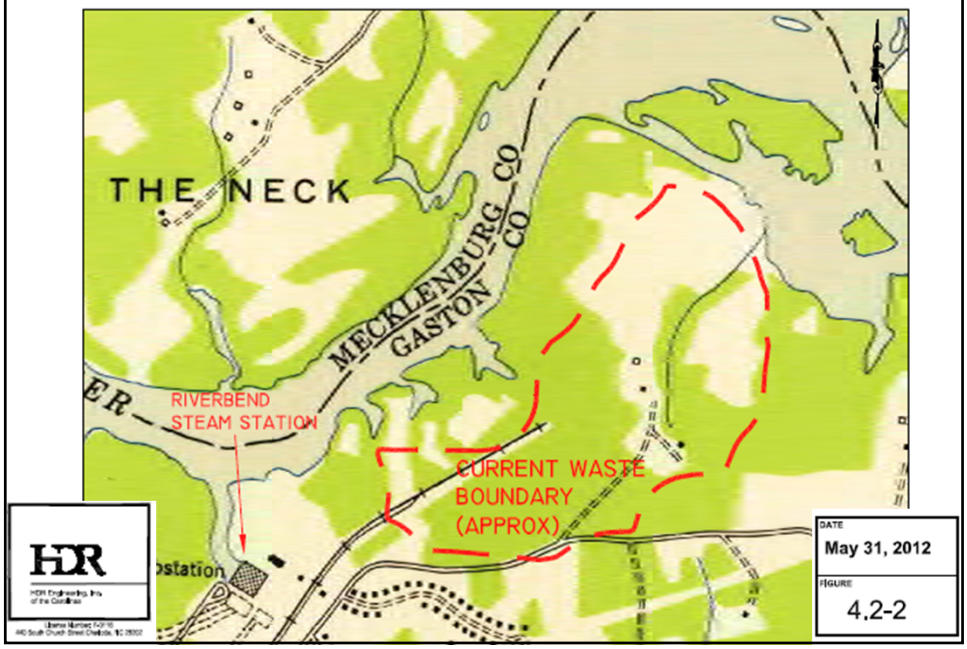
Riverbend 1965

Plant built in 1920s

Current ponds date to 1950s



Extent of Waste



Regulation

- NPDES (National Pollution Discharge Elimination System)
  - Clean Water Act (1972)
  - Targeted contaminants and testing frequency vary site-to-site
  - As infrequent as quarterly
  - Many metals not tested
- **Coal ash not regulated as waste**
  - Household trash is more regulated under Subtitle D (Non-hazardous solid wastes)
- Some repurposing allowed
  - Drywall, concrete
  - Inadequate demand
- EPA Maximum Contaminant Levels
  - Legally enforceable drinking water standards for public systems

Coal Ash

Coal ash and leachate from coal ash contains toxic metals and other hazardous substances.

- Duke likes to point out that the metals and other toxic elements in coal as are naturally occurring, which is true,
- But burning coal increases the concentration of these elements in the ash.

What else goes into ash ponds?

- It is not just ash. Virtually all wastes are permitted to go into the coal ash ponds. Even the current permit allows wastes such as boiler wash down, other boiler cleaning wastes, biocides, metal cleaning wastes, laboratory wastes, vehicle wash water, coal pile runoff, sump discharges and domestic waste to be dumped untreated into the ash ponds.
- The wastes are diluted, but not really treated.

Five Types of Discharges from the Ash Ponds

1. Direct permitted discharge of water from ash ponds.

Permitted Discharges

- Duke states that it is in compliance with its permit, but
- The permit contains **no limits for** the contaminants of most concern: **arsenic, selenium and mercury.**
- **Thus, to say that the permitted discharge point is in compliance, says very little.**

EFFLUENT CHARACTERISTICS	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow			Weekly	Pump logs or estimate	Influent or Effluent
Total Suspended Solids[1]	23.0 mg/L	75.0 mg/L	Monthly	Grab	Effluent
Oil and Grease	11.0 mg/L	15.0 mg/L	Annually	Grab	Effluent
Total Copper[2]	1.0 mg/L	1.0 mg/L	Quarterly	Grab	Effluent
Total Iron[2]	1.0 mg/L	1.0 mg/L	Quarterly	Grab	Effluent
Total Arsenic[2]			Quarterly	Grab	Effluent
Total Selenium[2]			Quarterly	Grab	Effluent
Total Mercury			Quarterly	Grab	Effluent
Total Phosphorus			Semi-annually	Grab	Effluent
Total Nitrogen (NO_2 + NO_3 + TKN)			Semi-annually	Grab	Effluent
pH[3]			Monthly	Grab	Effluent
Chronic Toxicity[4]			Quarterly	Grab	Effluent

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

PERMIT

TO DISCHARGE WASTEWATER UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

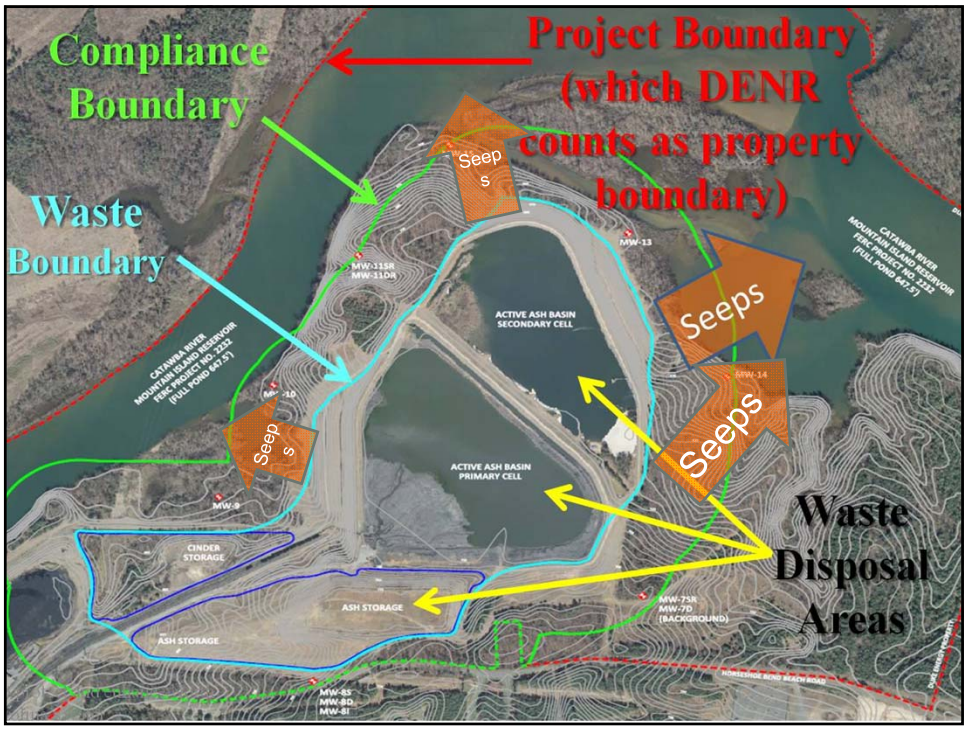
A.(16.) ASH POND CLOSURE

The facility shall prepare an Ash Pond Closure Plan in anticipation of the facility closure. This P submitted to the Division one year prior to the closure of the facility.

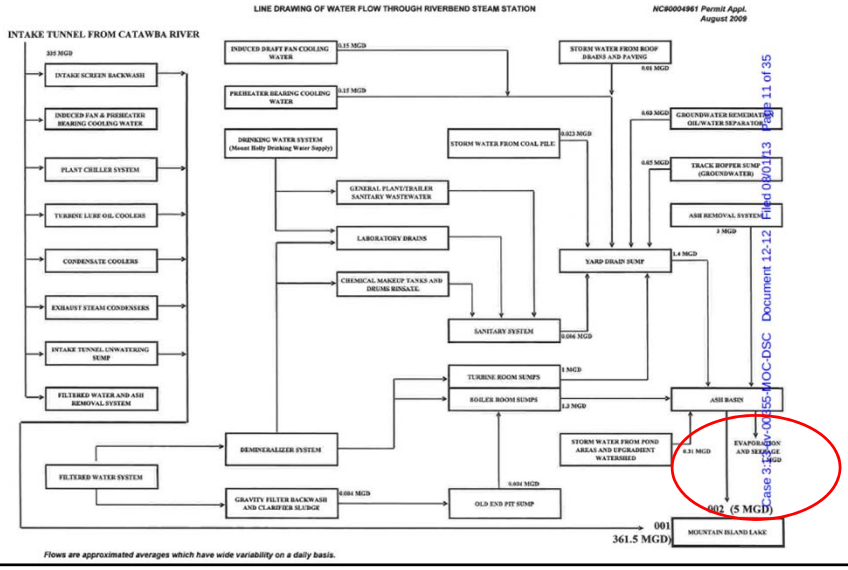
- Facility formally closed April 1, 2013
- Duke plans to study closure options in 2014
- No certain date on when Duke will propose a cleanup option

Five Types of Discharges from the Ash Ponds

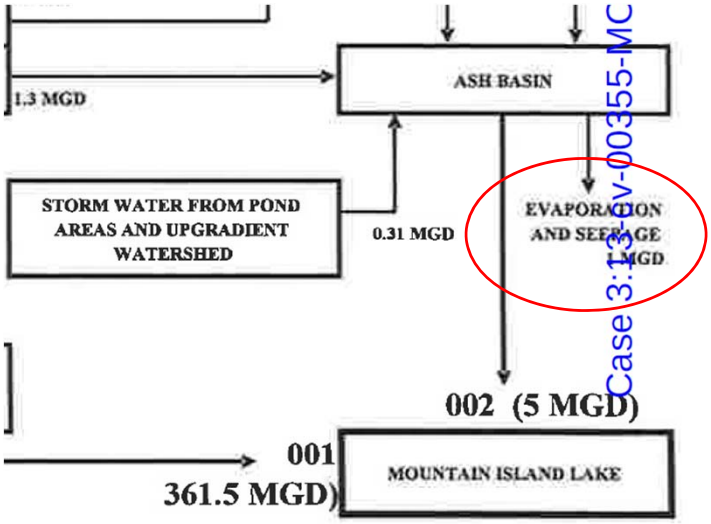
1. Direct permitted discharge of water from ash ponds.
2. Unpermitted, illegal seepages of ash waste through and under the earthen dams.

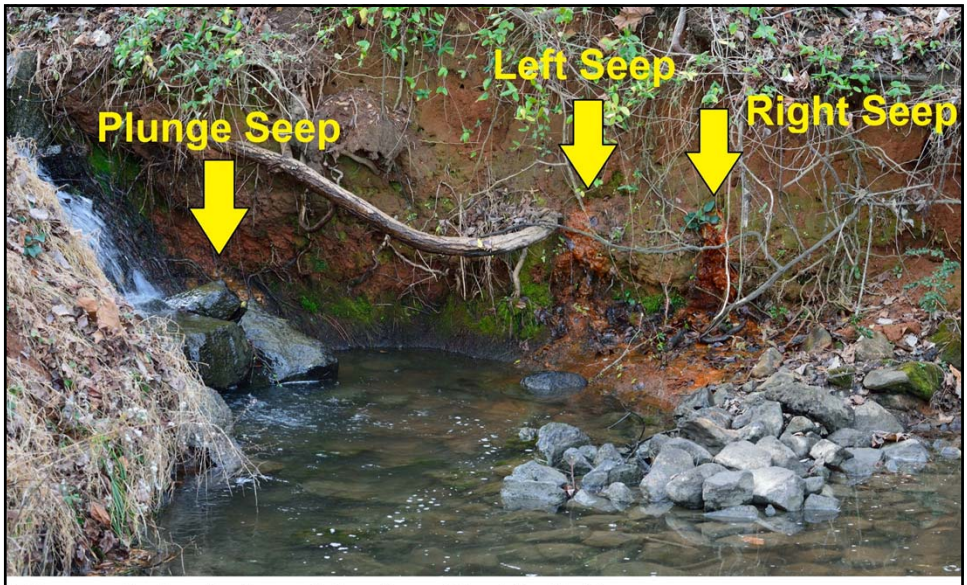


2009 Permit Renewal Application



2009 Permit Renewal Application





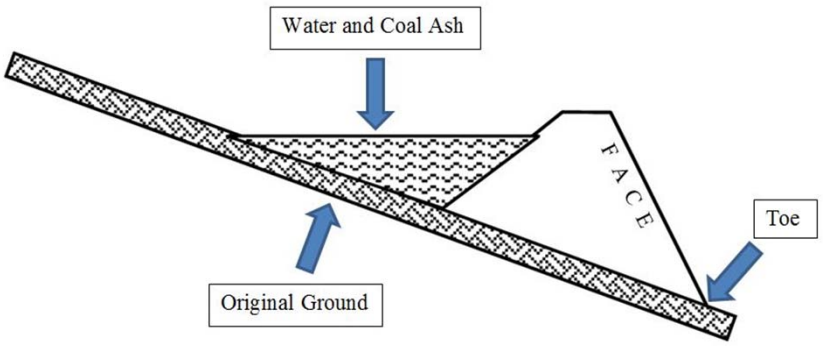
Mountain Island Lake Outfall Seeps

These seeps have developed (or at least significantly intensified) since December. Each seep discharge is at least equivalent to a typical drinking water fountain.

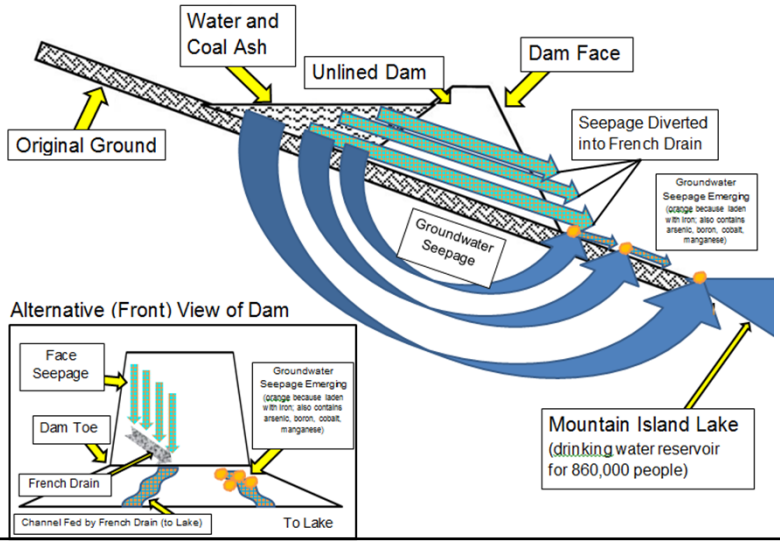
Five Types of Discharges from the Ash Ponds

1. Direct permitted discharge of water from ash ponds.
2. Seepages of ash waste through and under the earthen dams, which are unpermitted.
3. Leakage of contaminants from the unlined ponds into the groundwater.

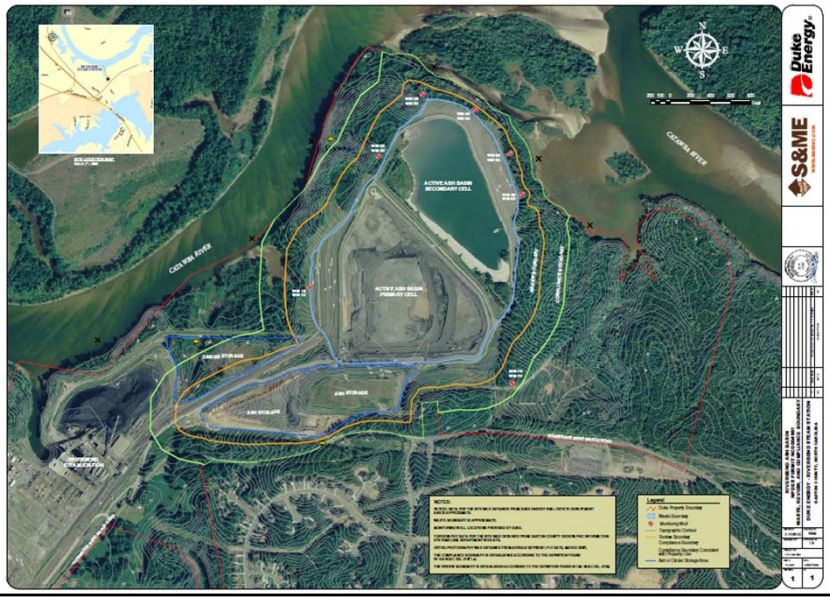
Coal Ash Pond Diagram



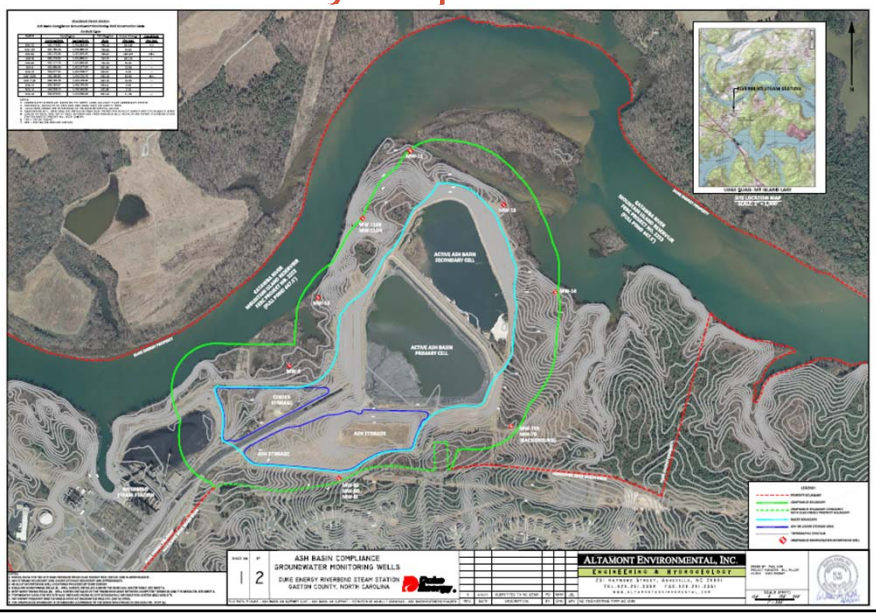
Coal Ash Pond Diagram



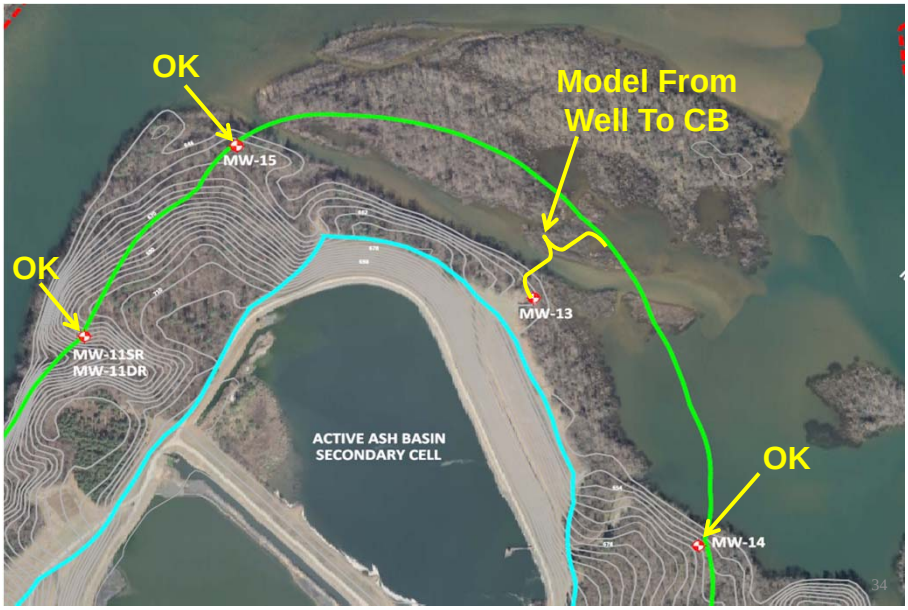
2009 Boundary Map



2011 Boundary Map



Riverbend Groundwater Contamination
Compliance boundary extends into drinking water reservoir



Duke Supplemental Groundwater Monitoring Report (6/21/13)

The report containing the predictive modeling is found in Appendix A. The results of the predictive groundwater modeling are summarized below:

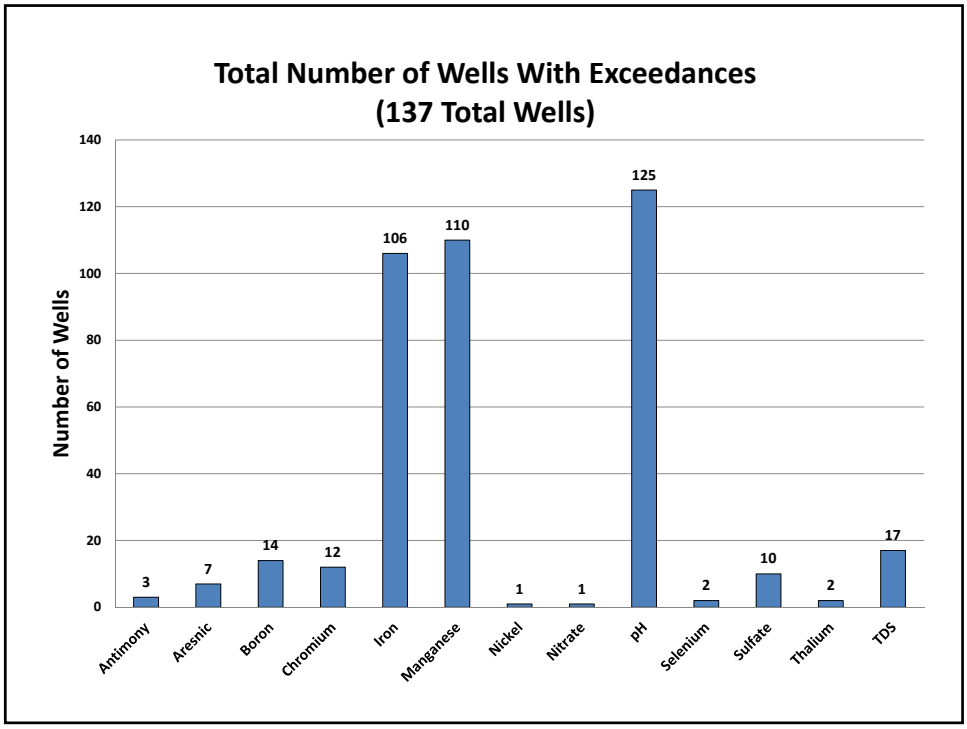
MW-9 – The model-predicted iron concentration at the compliance boundary for the February, June, and October 2012 sampling events was greater than the 2L Standard. The model-predicted manganese concentration at the compliance boundary for the February 2012 sampling event was greater than the 2L Standard.

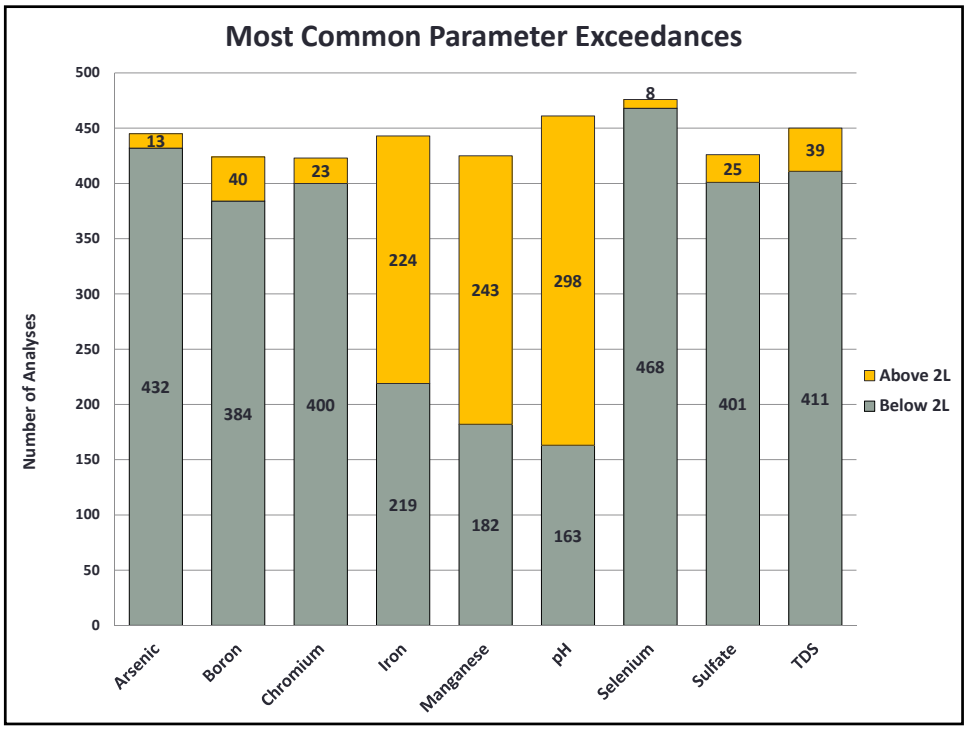
MW-10 – The model-predicted iron and manganese concentrations at the compliance boundary for the February 2012 sampling event were greater than the 2L Standard. The model-predicted manganese concentration at the compliance boundary for the October 2012 sampling event was greater than the 2L Standard.

MW-13 – The model-predicted iron and manganese concentrations at the compliance boundary for the February, June, and October 2012 sampling events were greater than the 2L Standard.

GW Standard (eff. 1/1/2010)				6.5-8.5	300	50
Units				SU	ug/l	ug/l
Note: NA "Not Analyzed" & NS "Not Sampled"				pH (field)	Iron	Manganese
Units				SU	ug/l	ug/l
Facility Name: Riverbend Steam Station (NC0004961)						
Well Name	Dist. to Compliance Boundary (ft) Inside Boundary - Annual Modeling	Dist. to Compliance Boundary (ft) At Boundary	Sample Collection Date (Month-Year)			
MW-7SR		~75	Dec 2010	5.5	125	256
MW-7SR			Feb 2011	5.3	790	413
MW-7SR			Jun 2011	5.3	495	304
MW-7SR			Oct 2011	5.4	532	167
MW-7SR			Feb 2012	5.1	285	113
MW-7SR			Jun 2012	5.2	520	122
MW-7SR			Oct 2012	5.2	221	67
MW-7D		~75	Dec 2010	5.8	< 10	< 5
MW-7D			Feb 2011	5.6	< 10	< 5
MW-7D			Jun 2011	5.8	< 10	< 5
MW-7D			Oct 2011	5.8	< 10	< 5
MW-7D			Feb 2012	5.6	< 10	< 5
MW-7D			Jun 2012	5.7	< 10	< 5
MW-7D			Oct 2012	5.7	< 10	< 5
MW-8S		~30	Dec 2010	5.3	53	123
MW-8S			Feb 2011	5.2	41	135
MW-8S			Jun 2011	4.9	73	144
MW-8S			Oct 2011	5.2	16	135
MW-8S			Feb 2012	5.1	58	133
MW-8S			Jun 2012	5.1	24	126
MW-8S			Oct 2012	5	19	104
MW-8I		~30	Dec 2010	6.8	787	538
MW-8I			Feb 2011	6.4	643	290
MW-8I			Jun 2011	6.3	812	43
MW-8I			Oct 2011	6.4	942	52
MW-8I			Feb 2012	6.4	976	32
MW-8I			Jun 2012	6.4	853	39
MW-8I			Oct 2012	6.1	618	23
MW-8D		~30	Dec 2010	7.1	2640	743
MW-8D			Feb 2011	6.8	1330	671
MW-8D			Jun 2011	7.0	777	622
MW-8D			Oct 2011	6.8	954	535
MW-8D			Feb 2012	6.8	1480	452
MW-8D			Jun 2012	6.8	1320	174
MW-8D			Oct 2012	6.5	2050	82

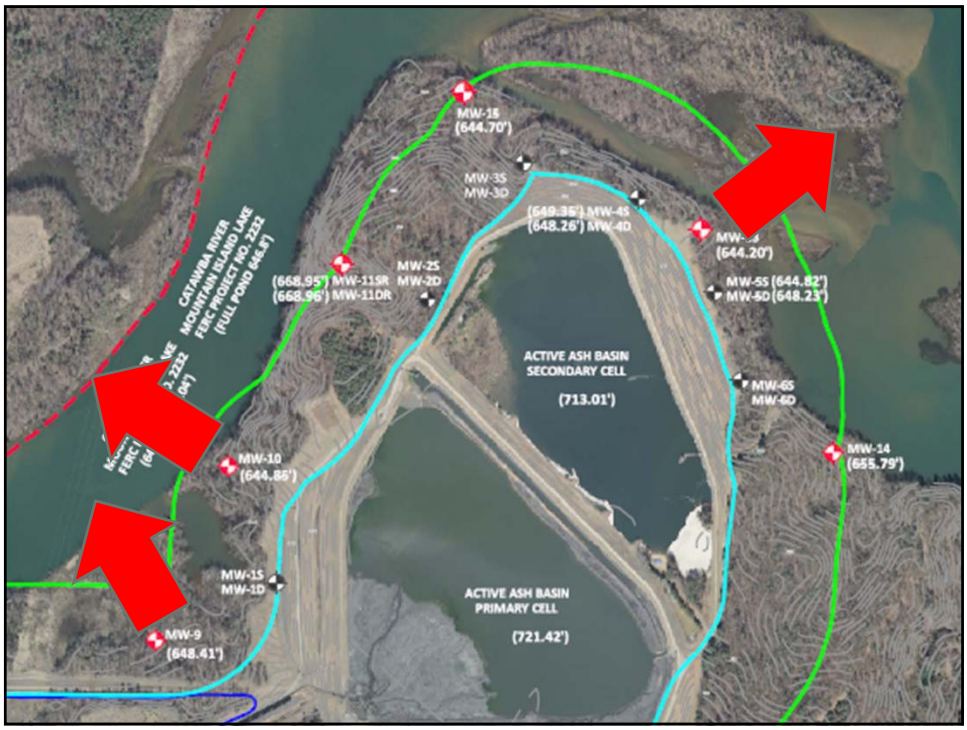
GW Standard (eff. 1/1/2010)				6.5-8.5	300	50
Units				SU	ug/l	ug/l
Note: NA "Not Analyzed" & NS "Not Sampled"				pH (field)	Iron	Manganese
Units				SU	ug/l	ug/l
Facility Name: Riverbend Steam Station (NC0004961)						
Well Name	Dist. to Compliance Boundary (ft) Inside Boundary - Annual Modeling	Dist. to Compliance Boundary (ft) At Boundary	Sample Collection Date (Month-Year)			
MW-11SR		X	Dec 2010	NS	NS	NS
MW-11SR			Feb 2011	6.1	486	384
MW-11SR			Jun 2011	5.8	138.00	59.00
MW-11SR			Oct 2011	5.6	87	30
MW-11SR			Feb 2012	5.7	63	24
MW-11SR			Jun 2012	5.7	39	17
MW-11SR			Oct 2012	5.8	30	16
MW-11DR		X	Dec 2010	NS	NS	NS
MW-11DR			Feb 2011	5.8	21	168
MW-11DR			Jun 2011	5.6	13.00	103.00
MW-11DR			Oct 2011	5.6	< 10	87
MW-11DR			Feb 2012	5.7	11	101
MW-11DR			Jun 2012	5.7	< 10	92
MW-11DR			Oct 2012	5.8	< 10	87
MW-14		~20	Dec 2010	6.9	554	270
MW-14			Feb 2011	7.0	378	55
MW-14			Jun 2011	6.8	175	43
MW-14			Oct 2011	6.8	58	193
MW-14			Feb 2012	6.8	935	353
MW-14			Jun 2012	6.7	206	56
MW-14			Oct 2012	6.7	98	20
MW-15		~20	Dec 2010	NC	NC	NC
MW-15			Feb 2011	5.3	227	55
MW-15			Jun 2011	5.2	274	64
MW-15			Oct 2011	5.2	198	81
MW-15			Feb 2012	5.2	399	86
MW-15			Jun 2012	5.1	45	52
MW-15			Oct 2012	5.2	55	46


Total Number of Wells With Exceedances
(137 Total Wells)
Number of Wells
140
120
100
80
60
40
20
0
3
7
14
12
106
110
1
1
125
2
10
2
17
Antimony
Aresnic
Boron
Chromium
Iron
Manganese
Nickel
Nitrate
pH
Selenium
Sulfate
Thalium
TDS


Most Common Parameter Exceedances
Number of Analyses
500
450
400
350
300
250
200
150
100
50
0
13
40
23
224
243
298
8
39
25
432
384
400
219
182
163
468
401
411
Above 2L
Below 2L
Arsenic
Boron
Chromium
Iron
Manganese
pH
Selenium
Sulfate
TDS

Five Types of Discharges from the Ash Ponds

1. Direct permitted discharge of water from ash ponds.
2. Seepages of ash waste through and under the earthen dams, which are unpermitted.
3. Leakage of contaminants from the unlined ponds into the groundwater.
4. Migration of contaminated groundwater into the river.



Surface Water

- Lake/River
  - "Dilution is the solution to pollution"
  - Arsenic: EPA MCL of 10 ppb
- Charlotte-Mecklenburg Storm Water Services testing
  - Multiple exceedences, especially around summer and dry periods
  - 1.8 to 3.6 times MCL in reservoir cove near primary outfall
- Catawba Riverkeeper Foundation
  - Char-Meck Drinking Water Intake (DWI)
  - Outfall
  - Consistent with data Duke reports to EPA, DENR

Mtn. Island Lake Ambient Water

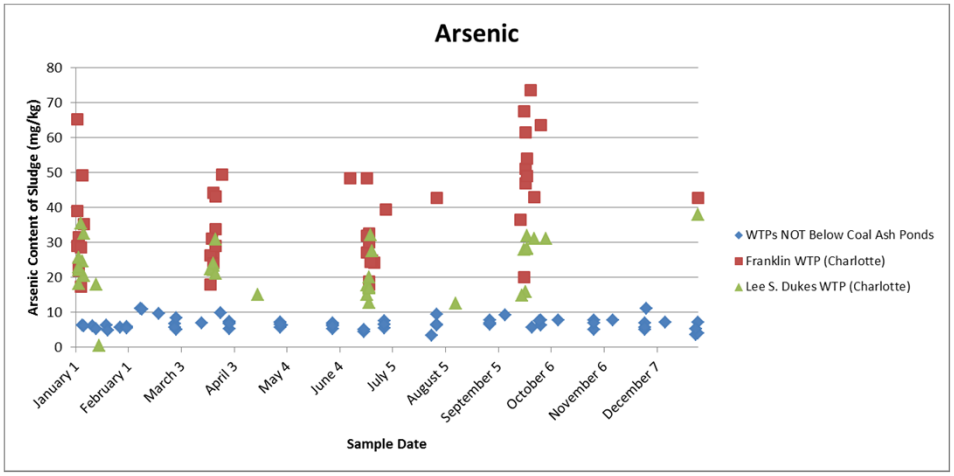
Periodic exceedances of water standards, including Arsenic
(EPA Max Contaminant Level for Arsenic is 10 ug/l).
Don't know if PCB problems in fish related to power plants.

A	B	C	D	E	F	G	H	I	J	K	L
Sampno	Coldate	Site	Analyte	Qualifier	Result	Aunit	MDL	RecordID	TransfDate	SQL_ID	QCDate
AD37689	1/13/2010	RB1	Arsenic	<	5	ug/L	5	256111	1/26/2010	719804	1/21/2010
AD43552	3/9/2010	RB1	Arsenic	<	5	ug/L	5.0	258515	3/30/2010	728033	3/29/2010
AD49964	5/6/2010	RB1	Arsenic		23	ug/L	5.0	260558	6/2/2010	734571	5/11/2010
AD51927	5/21/2010	RB1	Arsenic		6.4	ug/L	5.0	261324	6/2/2010	733874	6/1/2010
AD56864	7/7/2010	RB1	Arsenic		8.6	ug/L	5.0	262433	7/21/2010	741449	7/20/2010
AD63735	9/7/2010	RB1	Arsenic		5.5	ug/L	5.0	265513	9/22/2010	750880	9/21/2010
AD67093	10/5/2010	RB1	Arsenic		16	ug/L	5.0	266396	10/15/2010	754866	10/14/2010
AD71186	11/11/2010	RB1	Arsenic	<	5	ug/L	5.0	269239	12/1/2010	760338	11/19/2010
AD77643	1/19/2011	RB1	Arsenic	<	5	ug/L	5.0	282548	2/24/2011	822656	1/26/2011
AD82967	3/8/2011	RB1	Arsenic		18	ug/L	5.0	285471	3/24/2011	828175	3/21/2011
AD89120	5/9/2011	RB1	Arsenic	<	5	ug/L	5.0	288386	5/25/2011	836243	5/20/2011
AD92138	6/8/2011	RB1	Arsenic		22	ug/L	5.0	289206	6/21/2011	840446	6/20/2011
AD96092	7/18/2011	RB1	Arsenic	<	5	ug/L	5.0	292690	8/5/2011	848036	7/21/2011
AD99448	8/16/2011	RB1	Arsenic	<	5	ug/L	5.0	293543	9/1/2011	850498	8/23/2011
AE02244	9/12/2011	RB1	Arsenic	<	5	ug/L	5.0	294807	10/1/2011	853694	9/16/2011
AE08198	11/8/2011	RB1	Arsenic	<	5	ug/L	5.0	296739	11/23/2011	862996	11/15/2011
AE15033	1/17/2012	RB1	Arsenic	<	5	ug/L	5.0	299662	1/24/2012	871021	1/23/2012
AE20601	3/8/2012	RB1	Arsenic	<	5	ug/L	5.0	301849	3/21/2012	878036	3/20/2012
AE26430	5/7/2012	RB1	Arsenic		35	ug/L	5.0	304974	6/8/2012	889439	5/21/2012
AE30438	6/13/2012	RB1	Arsenic	<	5	ug/L	5.0	305738	7/3/2012	893688	6/22/2012

Where do contaminants go?

- Do not simply pass through or flush out with surface water
- Transition from dissolved to particulate phase
  - Settle out on bottom of lake/river
- Contaminants ~10,000x concentrated on particle surfaces
- Contaminants ~25x concentrated in pore water
  - Pore water is the water content of sediment
- Can be re-released into water column
- Groundwater contamination

Water Treatment Plant Sludge



Five Types of Discharges from the Ash Ponds

1. Direct permitted discharge of water from ash ponds.
2. Seepages of ash waste through and under the earthen dams, which are unpermitted.
3. Leakage of contaminants from the unlined ponds into the groundwater.
4. Migration of contaminated groundwater into the river.
5. Potential for catastrophic release

2009 Lockheed-Martin Report

3.4 Foundation Conditions

Documents reviewed by CHA indicate that the Original Primary Dike was not constructed on wet ash, slag or other unsuitable materials. The raised portion of this dike redacted) was partially construction (upstream side) on sluiced ash. The Secondary Dike does not appear to have been constructed on wet ash, slag or other unsuitable materials. The Intermediate Dike was constructed on sluiced ash.

CHA was not provided with documentation of foundation preparation for the Primary, Secondary or Intermediate Dikes.

Final Report
Assessment of Dam Safety of
Coal Combustion Surface Impoundments
Duke Energy
Riverbend Steam Station
Mount Holly, North Carolina

2009 Lockheed-Martin Report

4.10 Hazard Assessment

We recommend that a breach analysis be performed for the Primary and Secondary Ash Ponds to determine whether development downstream would suggest a high hazard classification is warranted for the impoundments.

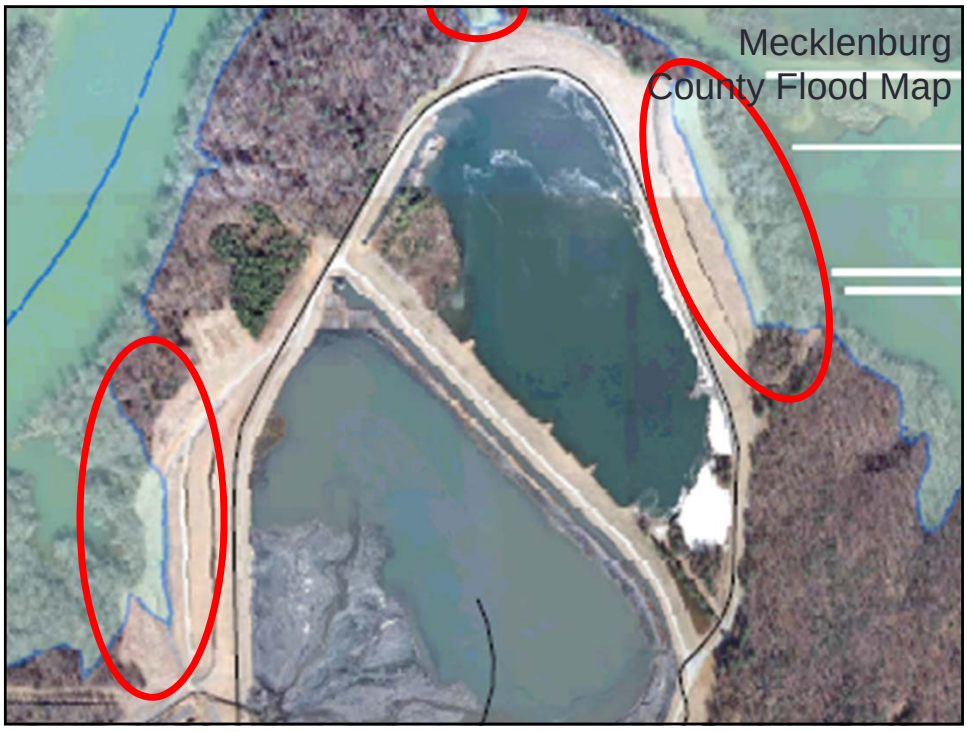
4.11 Stability Analyses

The CHA recreated cross sections outlined in Section 3.3.2 indicate that the factors of safety for the loading conditions calculated are above the minimum required factors of safety as discussed in Section 3.3. CHA recommends that soil properties, including shear strength under current conditions, be confirmed for the primary dike. We also recommend that a rapid drawdown analysis be performed for the dike once the soil properties are confirmed.

CHA was not provided with stability analyses for the secondary dike. We recommend Duke Energy perform stability analyses for this embankment including steady state, flood surcharge, rapid drawdown, and seismic loading conditions. CHA performed preliminary analyses for each of these loading conditions, except for the rapid drawdown condition, using similar parameters as used by Duke Energy for the primary dike. These preliminary analyses indicate that the factors of safety are at or slightly the minimum required factors of safety as discussed in Section 3.3. However, the soil properties need to be confirmed.

Stability analyses should also be performed for the intermediate dike.

Final Report



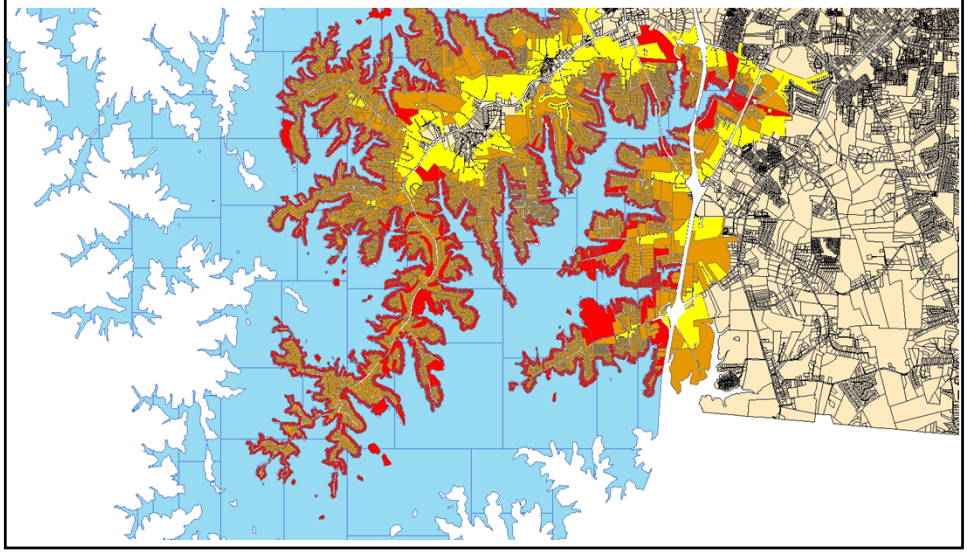
Home surrounded by toxic coal ash sludge after the Tennessee Valley Authority coal ash spill (Kingston, TN).

What happens if an active or inactive ash pond fails?

2008 TVA Spill

- ~$2 billion clean-up cost
  - TVA ruled liable
  - Lawsuits still in courts
- Small, rural area
  - Similar spill in urban area would have greater impact

Economic Impact



Economic Impact

- Lake Norman

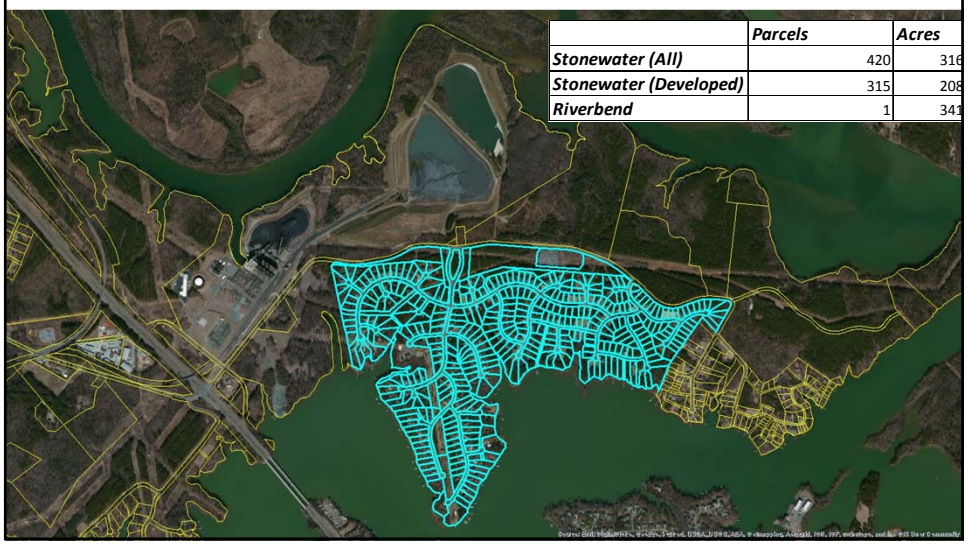
County	Total Tax	#Parcels	#Acres	Tax%	Parcel%	Acre%
Lincoln	**$ 7,972,486,743.00**	**50952**	**181330.8**			
Lincoln_LF	$ 1,228,112,432.00	2197	2207.5	15.40%	4.31%	1.22%
Lincoln_.25	$ 1,867,599,366.00	5048	5053.1	23.43%	9.91%	2.79%
Lincoln_.5	$ 2,050,015,300.00	6039	6175.7	25.71%	11.85%	3.41%
Iredell	**$ 17,861,850,813.00**	**92900**	**365402.4**			
Iredell_LF	$ 3,529,784,920.00	6237	11051.1	19.76%	6.71%	3.02%
Iredell_.25	$ 5,942,207,368.00	14363	20845.4	33.27%	15.46%	5.70%
Iredell_.5	$ 6,716,155,411.00	17197	25416.4	37.60%	18.51%	6.96%
Catawba	**$ 14,787,731,500.00**	86678	251931.74			
Catawba_LF	n/a	n/a	n/a	n/a	n/a	n/a
Catawba_.25	n/a	n/a	n/a	n/a	n/a	n/a
Catawba_.5	n/a	n/a	n/a	n/a	n/a	n/a
Mecklenburg	**$ 315,150,949,732.00**	**377583**	**626407.9**			
Mecklenburg	$ 2,718,219,600.00	3628	2933.7	0.86%	0.96%	0.47%
Mecklenburg	$ 7,803,072,290.00	7353	6457.1	2.48%	1.95%	1.03%
Mecklenburg	$ 10,371,555,098.00	9057	10860.3	3.29%	2.40%	1.73%

Economic Impact

- Gaston County (MIL and Lake Wylie)

County	Total Tax	#Parcels	#Acres	Tax%	Parcel%	Acre%
Gaston	**$ 13,140,911,837**	**102,406**	**214,293**			
MIL LF	$ 86,246,593	208	2,135	0.66%	0.20%	1.00%
MIL 0.25	$ 237,469,286	677	2,943	1.81%	0.66%	1.37%
MIL 0.5	$ 259,853,427	811	4,924	1.98%	0.79%	2.30%
LW LF	$ 386,480,280	955	6,113	2.94%	0.93%	2.85%
LW 0.25	$ 809,886,014	3,327	10,424	6.16%	3.25%	4.86%
LW 0.5	$ 1,191,591,065	5,830	13,692	9.07%	5.69%	6.39%

Economic Impact



	Parcels	Acres
Stonewater (All)	420	316
Stonewater (Developed)	315	208
Riverbend	1	341

Economic Impact

- Stonewater

	Land Value	Total Value	Land Value/acre	Total Value/acre
Stonewater (All)	$ 41,863,245	$ 162,555,517	$ 132,479	$ 514,416
Stonewater (Developed)	$ 34,426,090	$ 155,116,316	$ 165,510	$ 745,752
Riverbend	$ 2,204,287	$ 2,204,287	$ 6,464	$ 6,464

Removing Ash Ponds is Feasible

- Wateree River (Wateree Station)

SCE&G Settlement

- SCE&G powerplant on Wateree River (Eastover, SC)
- Groundwater contamination (arsenic)
- CRF filed suit May 2012
- Settled August 2012, agreeing to:
  - Completely remove ash in unlined ponds and move away from river
  - Switch to dry ash handling with lined basins

IN THE UNITED STATES DISTRICT COURT
DISTRICT OF SOUTH CAROLINA
COLUMBIA DIVISION

CATAWBA RIVERKEEPER FOUNDATION, INC.

PLAINTIFF,

v.

SOUTH CAROLINA ELECTRIC & GAS COMPANY, A SUBSIDIARY OF SCANA CORPORATION,

DEFENDANT.

CASE NO. 3:12-CV-00124-JFA

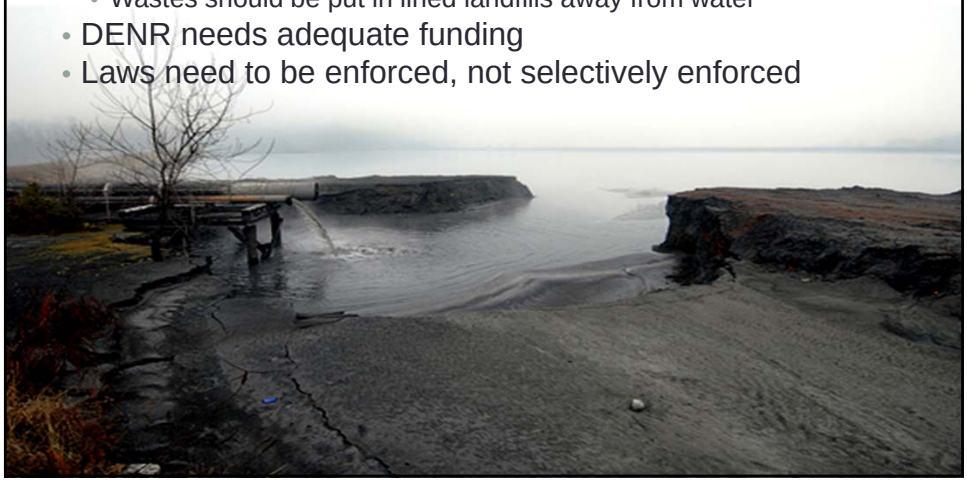
SETTLEMENT AGREEMENT AND RELEASE

What Needs to Be Done

- Clean up site
  - 'Leave it as you found it'
  - Place material in lined landfill
  - SCE&G and SCANA precedent
- Why?
  - Groundwater contamination
  - Seeps
  - **Potential for failure**
    - Water supply threat
    - Economic impact
  - Maximum contamination will peak decades from now
  - 'Other' chemicals

Legislative Issues

- Legislature should set deadlines for removal of ash from unlined facilities beside rivers, streams and drinking water reservoirs – including closed facilities.
  - Capping unlined waste pits should be banned
  - Wastes should be put in lined landfills away from water
- DENR needs adequate funding
- Laws need to be enforced, not selectively enforced



Questions?