

**1998**

**JOINT  
APPROPRIATIONS -  
NATURAL & ECONOMIC  
RESOURCES  
COMMITTEE**

**MINUTES**

**JOINT APPROPRIATIONS SUB-COMMITTEE**

**ON**

**NATURAL AND ECONOMIC RESOURCES**

**1998 SESSION**

Senator R. L. "Bob" Martin

Senate Chair

Representative Frank Mitchell

Senior House Co-Chair

Representative Rex L. Baker

Representative James C. Carpenter

House Co-Chairs

Carolyn Gooden, Senate Clerk

Susan West, House Clerk

Jo Hinton, House Clerk

Ann Jordan, House Clerk

**House Appropriations Sub-Committee on**

**Natural and Economic Resources**

**1998 Session**



**Rep. Frank Mitchell**  
**Senior Co-Chair**



**Rep. Rex Baker**  
**Co-Chair**



**Rep. Jim Carpenter**  
**Co-Chair**



**Rep. Bill Owens**  
**Ranking Minority Member**

## Members



**Rep. Gordon Allen**



**Rep. Arlie Culp**



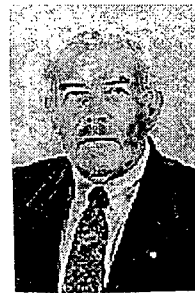
**Rep. Stan Fox**



**Rep. Bobby Ray Hall**



**Rep. Howard Hunter**



**Rep. Joe Tolson**



**Rep. John Weatherly**

**HOUSE APPROPRIATIONS SUB-COMMITTEE ON  
NATURAL AND ECONOMIC RESOURCES**

**1998 SESSION**

Member Clerk	Office Address	Tel #
Rep. Frank Mitchell, Co-Chair Susan West, Clerk	Room 638, LOB	3-5959
Rep. Rex L. Baker, Co-Chair Jo Hinton, Clerk	Room 632, LOB	3-5787
Rep. James C. Carpenter, Co-Chair Ann Jordan, Clerk	Room 537, LOB	3-5777
Rep. William C. Owens, Jr., RMM Marie Sheets	Room 608, LOB	3-0010
Rep. Gordon Allen Lillie Pearce	Room 1220, LB	3-5746
Rep. Arlie F. Culp Waneta Lord	Room 1010, LB	3-5865
Rep. Stan H. Fox Sue Buehlmann	Room 1217, LB	3-5757
Rep. Bobby Ray Hall Paula Covington	Room 637, LOB	3-5906
Rep. Howard J. Hunter, Jr. Barbara Phillips	Room 613, LOB	3-2962
Rep. Joe P. Tolson Gayle Christian	Room 609, LOB	3-5607
Rep. John H. Weatherly Debbie Puckett	Room 503, LOB	3-5849

**MEMBERSHIP LIST**  
**APPROPRIATIONS COMMITTEE NER**

<u>MEMBERSHIP</u>	<u>OFFICE</u>	<u>PHONE</u>
Senator R.L. "Bob" Martin, Chairman	410	5-3040
Senator Tommy Jenkins, Vice-Chair	622	3-6275
Senator Betsy Cochrane	1127	5-2525
Senator Ham Horton	1406	3-3272
Senator Larry Shaw	625	3-4809
Senator David Weinstein	2108	3-5651

**JOINT APPROPRIATIONS SUB-COMMITTEE ON  
NATURAL & ECONOMIC RESOURCES**

[illegible]

## **MEETINGS**

### **House Appropriations Sub-Committee on Natural and Economic Resources**

**1998**

<b>June 11</b>	<b>July 1</b>
<b>June 17</b>	<b>July 2</b>
<b>June 18</b>	<b>July 7</b>
<b>June 24</b>	<b>July 8</b>
<b>June 25</b>	<b>July 9</b>
<b>June 30</b>	<b>July 13</b>
	<b>July 14</b>
	<b>July 16</b>

**October 13**

**October 19**

**October 21**

**Record of these meetings can be found in the notebook of the House Appropriations Sub-Committee on Natural and Economic Resources for 1998.**



# **BILL RECORD**

## **Joint Appropriations Sub-Committee on Natural and Economic Resources**

**There was no action taken on bills by the Joint Appropriations Sub-Committee on Natural and Economic Resources during the 1998 Session. Please refer to the individual notebooks of the House or/and the Senate Appropriations Sub-Committee on Natural and Economic Resources for action taken on bills during the 1998 Session.**

## **Minutes**

### **Joint Appropriations Sub-Committee on**

#### **Natural and Economic Resources**

**May 27, 1998 - 10:00 a.m.**

The Joint Appropriations Sub-Committee on Natural and Economic Resources met Wednesday, May 27, 1998 at 10:00 a.m. in Room 423 of the Legislative Office Building. Representative Frank Mitchell, House Co-Chair, called the meeting to order at 10:05 a.m. House members present were Representatives Mitchell, Baker, Carpenter, Owens, Allen, Culp, Fox, Tolson, and Weatherly.

After introductions, Representative Mitchell gave a brief history of the Warren County PCB Landfill, and reviewed the status report from the study (see Attachments A & B). Senator Horton asked what do PCBs do. Senator Martin replied PCBs come from oil inside transformers. Senator Martin asked what were the findings of the study that cost \$1 million. Henry Lancaster, Deputy Secretary of the Department of Environment and Natural Resources, replied the appropriation was spent to identify technology for detoxifying the property and assessments by two vendors. Gary Pearson, Director of Legislative Affairs for Laidlaw Environmental Services, Inc., introduced the regional staff from Laidlaw, and explained what the company does. Senator Cochrane asked what is "through put" rates. (This question was answered during Mr. Noles presentation--they are production rates). Senator Martin asked why was the dirt being moved. Representative Mitchell replied the commitment had been made to the citizens of Warren County that the landfill would be cleaned up, and noted funding for the clean-up is in the Governor's recommended budget. Senator Martin asked what is the harm. Mr. Lancaster replied there is a ongoing debate about the affects of PCBs, and explained that there is water in the landfill which is causing concern. Representative Owens asked where would the dirt be moved to. Mr. Pearson replied the contaminated soil will be moved to their facility in Utah. Senator Cochrane asked why didn't Laidlaw respond during the time bid requests were being accepted by the DENR. Mr. Pearson replied Laidlaw doesn't do the type of processing that is explained in the proposal. Senator Cochrane asked Mr. Lancaster if the process had been determined when bids were requested. Mr. Lancaster replied twelve technologies placed bids for the clean-up and two were finally considered. Representative Baker asked if the scientific advisors involved with the initial study were associated in any way with the technologies chosen. Mr. Lancaster replied they were not. Representative Baker asked what was the hazard of leaving PCBs in the landfill. Jim Noles, Facility Manager of Laidlaw's facility in Reidsville, explained the history of a PCB spill that happened in Caldwell County, and the process that Laidlaw would use to clean up the Warren County site (see Attachment C). He explained that Laidlaw didn't submit a proposal because of the process (detoxification) that was being required (Mr. Noles answered Senator Horton's previous question at this time). He noted that PCBs

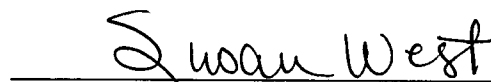
can be a carcinogen (cancer) risk to humans if there are high levels of PCBs in the body, and are commonly digested or inhaled. Senator Martin asked about the unknowns of the BCD process. Mr. Noles replied the unknown was how the process of this magnitude would take place on site. Representative Allen asked if the soil along the roads in Person County has been tested for carcinogens. Mike Kelly, Deputy Director of the Division of Waste Management at DENR, explained that extensive testing had been done to ensure the contaminated soil had been removed. He further noted there had been no cancer data or study performed on the citizens who were exposed. Representative Allen asked if the soil had been tested on a continuous basis to detect any traces of PCBs in the soil. Mr. Kelly replied there had not been any testing performed on a continuous basis but explained how the removal process ensures the contaminants are completely removed. Representative Allen continued by asking if any cases of cancer had been reported in the area as a result of exposure to PCBs. Mr. Noles replied that OSHA had completed a study on the effects of the exposure to PCBs which resulted in legislation becoming federal law. Senator Martin asked if transformers still contain oil. Mr. Noles replied transformers contain a different type of compound today that isn't as hazardous as it was. He further noted that PCBs aren't used in Canada or the United States today. Senator Cochrane asked what happens if the State discovers PCB contaminants in the soil sometime after the clean-up has been completed. Mr. Noles replied EPA has comprehensive methods that ensure removal of the contaminants from the soil. Senator Cochrane asked if Laidlaw's proposal would ensure complete removal with no additional costs in the future. Mr. Noles replied Laidlaw's proposal was complete. Representative Culp asked what incentives are there for the citizens that live close to the facility in Utah. Dan Martin, Division of Sales Director for Laidlaw, replied the county is not a residential area and is zoned specifically for waste management. Representative Fox asked if this is a preliminary cost estimate, and when would a firm figure be available. Mr. Noles replied Laidlaw would stand by this figure but this was an estimate for a type of technology that should be considered. Representative Baker asked if the estimate for the BCD process included the same amount of soil. Representative Mitchell replied it does, and explained how the two processes differ. Representative Baker also asked if 60,000 tons of contaminated soil is a reasonable amount to consider for the process. Mr. Kelly replied 60,000 tons is a reasonable figure, and explained how this estimate was reached. Representative Baker asked what happens to the 1.5 million gallons of water that is in the landfill. Mr. Noles replied the water can be treated on site, moved to a wastewater facility, or be treated through another process. Senator Shaw asked Mr. Lancaster how DENR had reviewed the bids from the two technologies. Mr. Lancaster explained how the technologies were compared through the results of testing and what a full-scale clean-up operation would cost using the technologies. He further noted the bidding will be open to vendors who want to participate in the BCD process. Senator Jenkins asked if Laidlaw would assume full liability. Mr. Noles replied Laidlaw would assume liability now as well as in the future. Representative Allen asked what was the liner made of (at the Warren County Landfill). Mr. Kelly replied the primary liner is composed of clay and a plastic liner covers the landfill. Representative Owens asked Mr. Lancaster why the BCD process was chosen over total removal of the contaminated soil. Mr. Lancaster replied the Warren County citizens who were involved in this decision didn't want the soil moved,

didn't want to consider a process that would create problems for other citizens, and chose a process that could be handled on site. Representative Owens asked if the Warren County citizens were aware of the \$8 million difference to the taxpayers. Mr. Lancaster replied he wasn't sure the proposal including the impact water would have to the price tag. Representative Carpenter asked Mr. Lancaster if the Warren County citizens were aware that the State wouldn't be liable if the BCD process didn't work. Mr. Lancaster replied they understood. Representative Carpenter noted the issue deals with liability and the cost. Mr. Kelly explained the liability issue to the State, and the process of detoxification. Representative Tolson asked if the BCD technology proposal included the cost of removing the water as well as treating the contaminated soil. Mr. Noles replied Laidlaw's process requires 10-18% moisture which will have no additional cost. Representative Weatherly asked Mr. Noles if the contaminated soil could be incinerated or placed in a containment landfill in Utah depending on the cost. Mr. Noles replied both processes could be handled at the Utah facility. Representative Culp asked Mr. Kelly what is the distance between the nearest resident and the landfill. Mr. Kelly replied the distance is ½ mile. Representative Culp asked how many counties were affected originally by the spill. Mr. Kelly replied 14 counties were originally affected. Representative Mitchell asked Mr. Noles if the estimate of contaminated soil in the proposal would be accurate enough to not affect a cost change. Mr. Noles replied their estimate would be accurate. Representative Fox asked what were the hazards of removing and moving the soil. Mr. Kelly replied the hazards involved in removing and moving the soil would be for potential air admissions and spills during transporting the soil. Senator Cochrane remarked that moving the soil a short distance from the landfill to the processing location on site could cause air emissions in which Mr. Kelly agreed could happen. He noted the exposure to others would be greater if hauling a greater distance. Senator Shaw asked Mr. Noles about Laidlaw's insurance liabilities in which Ned Murray, Regional Director of Sales for Laidlaw, explained. Senator Shaw asked if Laidlaw had a financial reserve in the case of a law suit in which Mr. Murray explained they do. Representative Culp asked if Laidlaw has a low level radioactive waste facility. Mr. Noles replied they don't but can handle mixed radioactive and hazardous waste at select facilities.

Respectfully submitted,



Frank Mitchell  
House Co-Chair



Susan West  
Clerk

## VISITOR REGISTRATION SHEET

## APPROPRIATIONS/Natural & Economic Resources

**May 27, 1998**

Name of Committee

Date \_\_\_\_\_

VISITORS: PLEASE SIGN BELOW AND RETURN TO COMMITTEE CLERK

NAME

**FIRM OR AGENCY AND ADDRESS**

L. Gumm	REDC
Becki Stuart	DPAB
Doug Lassiter	NC Septic Tank Assoc
Jane Smith	DENR
Sherrill Harris	DENR
Chris Fournier	San Basnight's Office
Maybloom	LAIDLAW
Edward Murrey	Laidlaw
Jim Niles	Laidlaw
Dan Martin	Laidlaw
Mike Kelly	Dan
Kat Williamson	DWM
Opus Munkman	Fiscal Research
Diane Long	DENR
DeVine	DENR
John H. Cyrus	N.C. State Exchange
Mitchell Setzer	Smith Setzer & Sons, Inc.
Jim Brown	N.C. State Ports.
John Holman	DENR

**NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES**

**DIVISION OF WASTE MANAGEMENT**



**JAMES B. HUNT JR.  
GOVERNOR**

**WAYNE MCDEVITT  
SECRETARY**

**WILLIAM L. MEYER  
DIRECTOR**

# **STATUS REPORT**

## **PCB LANDFILL WARREN COUNTY, NC**

### **DETOXIFICATION STUDY**

#### **REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION**

**APRIL 27, 1998**

## **SPEAKERS:**

**Mrs. Dollie Burwell**  
**Citizen of Warren County**  
**Co-chair, PCB Working Group**

**Michael Kelly, CPM**  
**Deputy Director**  
**Division of Waste Management**

**Mr. Patrick Barnes, PG**  
**Science Advisor**  
**Barnes, Ferland & Associates**

**Dr. Joel Hirschhorn**  
**Science Advisor**  
**Hirschhorn & Associates**

**Mr. Henry Lancaster**  
**Deputy Secretary**  
**DENR**

**Phase II - PRELIMINARY DESIGN REPORT  
PCB LANDFILL DETOXIFICATION  
Warren County, North Carolina**

**Prepared for**

**THE JOINT WARREN COUNTY/STATE PCB LANDFILL  
WORKING GROUP AND  
THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT  
AND NATURAL RESOURCES**

**March, 1998**

**Prepared by**

**ICF KAISER ENGINEERS, INC.  
Gateway View Plaza  
1600 W. Carson Street  
Pittsburgh, Pennsylvania 15219**

**ETG ENVIRONMENTAL, INC.  
16 Hagerty Boulevard  
West Chester, Pennsylvania 19382**

**In Association with:**

**BFA Environmental, Inc.  
3655 Maguire Blvd. Suite 150  
Orlando, FL 32803**

**Hirschhorn & Associates, Inc.  
2401 Blueridge Ave. Suite 411  
Wheaton, MD 20902**



## **EXECUTIVE SUMMARY**

The State of North Carolina owns and maintains a closed landfill containing Polychlorinated Biphenyls (PCBs) and dioxin/furan contaminated materials in Warren County, NC. The materials in the landfill were generated from cleanup of areas along state roads where PCB materials were illegally disposed. Due to considerable local opposition to the construction of the landfill, the residents of Warren County were assured by the Governor and the state legislature in the early 1980s that the landfill would be eliminated through detoxification when feasible and effective detoxification technology became available.

In 1995 the North Carolina General Assembly appropriated one million dollars to study detoxification feasibility and to investigate the site. After an extensive review of potential detoxification technologies, the Joint Warren County/State PCB Landfill Working Group (Working Group) selected Base Catalyzed Decomposition (BCD) and Gas Phase Chemical Reduction as the technologies for consideration for detoxification of the PCB Landfill. Actual landfill materials were tested in a Phase I bench scale study utilizing each of these two technologies.

As a result of these Phase I studies, the Working Group concluded that feasible and effective detoxification technology is now available and selected BCD as the preferred technology for detoxification of the PCB Landfill. ETG Environmental, Inc. (ETG) was subsequently awarded a contract to perform this Phase II preliminary design of a full-scale BCD detoxification system to remediate the PCB Landfill (ETG performed the successful Phase I bench scale BCD study). The primary purpose of this report is to

develop sufficient conceptual design information to allow for preparation of a cost estimate to form the basis to request funding from the State legislature for final design and detoxification of the PCB Landfill utilizing the BCD process.

The BCD process utilizes non-incineration chemical reactions to detoxify the PCBs and dioxins/furans in the contaminated materials. Chlorine atoms are chemically removed from the PCB and dioxin/furan molecules, and replaced with hydrogen, rendering them non-hazardous. The resulting non-hazardous oil can be recycled off-site. Detoxified soils will be replaced on-site, covered and revegetated. The process has been proven at several full-scale project applications.

The preliminary conceptual design of the full scale detoxification project is divided into two components. The first component provides written conceptual designs for site preparation, excavation, treatment, confirmation/verification sampling, stormwater management, security, site reclamation, decontamination, and demobilization. These aspects of the project have been conceptually designed to provide the basis for a detailed cost estimate for detoxification. Drawings have been provided to supplement these conceptual design items.

The second component presents those aspects of the project which will be completed during the final design portion of the Phase III Design/Build detoxification. Outlines have been provided to introduce these final design items, as follows: emergency response plan, permitting plan, performance demonstration plan, air monitoring plan, quality assurance plan, health and safety plan, construction quality assurance plan, and technical specifications.

To assist in the overall project oversight, a Citizens Advisory Board (CAB) would be established as a committee to the Working Group and would include an independent science advisor (s). The Design/Build detoxification contractor would include Program Management, working in conjunction with the state, to ensure that the local community has a strong role in the detoxification project's implementation. The Design/Build detoxification contractor would also include a coordinator to ensure maximum economic benefit to local/minority businesses and the local economy. Direct local economic impact is estimated in the range of \$3-5 million, which includes the hiring of local individuals and utilization of local businesses for supplies, material, and services to support the detoxification project.

A detailed cost estimate has been prepared to perform the detoxification project utilizing the BCD process. A cost of \$23,975,000 is presented, which includes a \$2,079,000 contingency to account for the following assumptions, which could change as the detoxification project progresses:

1. Quantity and characteristics of the material to be treated. 60,000 tons of material at 10-12% moisture content and average concentration of 500 parts per million (ppm) for PCBs has been assumed.
2. Regulatory uncertainties associated with permit acquisition and final design activities.
3. Modifications required to the detoxification project as a result of final design changes that may result from the permit/final design process.

## **Dr. Joel Hirschhorn**

Doctor Hirschhorn received an engineering Ph.D. from Reusselaer Polytechnic Institute and was a full Professor of engineering at the University of Wisconsin, Madison for many years. He was also a senior official at the U.S. Congressional Office of Technology Assessment where he helped shape several federal environmental laws. He is a nationally recognized expert on toxic waste site cleanups and technologies. He has published hundreds of papers and several technical books, and is the Editor of the Journal Remediation. As an environmental consultant he has worked for many leading industrial companies, state and federal agencies, and grassroots community groups needing independent technical advice.

## **Biographical Summary Patrick A. Barnes, P.G.**

Mr. Barnes is a North Carolina Registered Professional Geologists with extensive experience in hazardous waste site remediation. He is president and founder of Barnes Ferland and Associates, a full service Environmental engineering firm. He has more than 13 years of landfill site assessment and remediation experience including final closure activities at the Love Canal Emergency Declaration area, and implementation of remedial design at the BROS, IFF and GEMS Superfund sites. He is the current Technical Advisor to the North Fort Lauderdale community for the Wingate Superfund site remediation, which like Warren County PCB Landfill is a nationally known environmental justice site. Mr. Barnes also has extensive remedial site construction and project management experience. His primary area of expertise is subsurface migration of contaminants. For the past 2 years he has worked closely with the Joint Warren County Working Group as they move closer to detoxification of the PCB Landfill. He has specifically been responsible for leading the site assessment and community outreach project components.



STATE OF NORTH CAROLINA  
OFFICE OF THE GOVERNOR  
RALEIGH 27611

JAMES B. HUNT, JR.  
GOVERNOR

October 20, 1982

An Open Letter to the Citizens of Warren County:

I appreciated the opportunity to meet with community leaders and members of the executive committee of the Concerned Citizens of Warren County on Friday, October 8.

We had a full and frank discussion, lasting about two hours. We did not agree on everything, obviously. But it was a valuable meeting for me and, I hope, for all of you.

I told your representatives that I understand and respect your concerns about the PCB landfill. Nobody wants a landfill of any kind in their community. Your representatives expressed your concerns in strong, clear terms. They did not hold anything back, and I appreciated their frankness.

In turn, I was frank with them. I told them that, in my judgment, the State of North Carolina had no option but to place the PCB-tainted material in a safe and secure landfill. The Environmental Protection Agency would not approve handling the material in place along the roadside.

I told your representatives that Warren County was chosen for the site solely on the basis of technical reasons. No other consideration whatsoever was involved.

I also said during the meeting that the State of North Carolina does not intend to simply walk away from any responsibility once the landfill is completed. I made several commitments to that end, and I want to spell those out for you:

1. At the request of your representatives, the state will sponsor a public meeting in Warren County at which our agency officials, engineers and scientists will review the safety features at the landfill and respond to your specific concerns and questions. The meeting will be held at 6:30 p.m., Wednesday, October 27, in the National Guard Armory in Warrenton.

(more)

Warren County Citizens  
Page Two  
October 20, 1982

2. The state will push as hard as it can for detoxification of the landfill when and if the appropriate and feasible technology is developed. We will seek to establish a joint local-state-federal working group to pursue this end. The State Board of Science and Technology, which I chair, will have the specific responsibility for pressing the Environmental Protection Agency to develop this process and for monitoring research to determine when detoxification is possible.

3. The state will maintain continual monitoring of the landfill. This will include the monitoring systems included in the design of the landfill itself, monitoring of the residential wells within a three-mile radius of the landfill and checking streams and creeks in the area.

4. The state will cooperate with your county health department in providing environmental and health monitoring for those persons who live, work or go to school near the landfill. Warren County Health Director Joe Lennon and Dr. Ronald Levine, the state's health director, will be responsible for developing a monitoring program that will guarantee that the health of the citizens in the area is being protected.

5. My administration will support legislation prohibiting any additional contaminated soil from ever being placed in this landfill and prohibiting the state from ever placing another landfill in your county for any purpose. I understand that Frank Ballance will be preparing legislation along these lines, and we will work with him on this issue.

6. The State Department of Commerce will make special efforts to help Warren County attract industry and jobs. We will encourage businesses and industries to visit the county and consider sites there for expansion.

These are the commitments I made on behalf of the State of North Carolina. It is my responsibility to see that they are carried out, and I take that responsibility seriously.

(more)

Warren County Citizens  
Page Three  
October 20, 1982

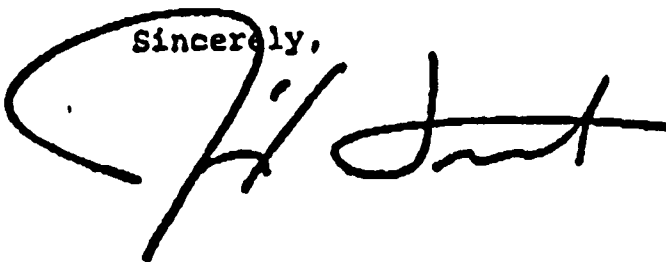
I know how controversial this matter has been. Again, I respect your concerns. And I take them seriously. Your state government has a responsibility to you and to all the people who live along the roads where the PCB material was dumped, as well as all the residents of North Carolina who might have been affected had that material spread and entered the food chain. The state is convinced, on the basis of the best scientific evidence that is available to us, that the landfill is safe and will remain safe in the future.

But you and I have seen that scientists can disagree, and their disagreements concern us. That is why I intend to see that the State of North Carolina keeps its commitment to you, your children and your grandchildren to continue to press for detoxification of the site, to closely monitor it and to guarantee its safety for generations to come.

That is the pledge I made to your representatives in my office last Friday, and it is the pledge I make to you now.

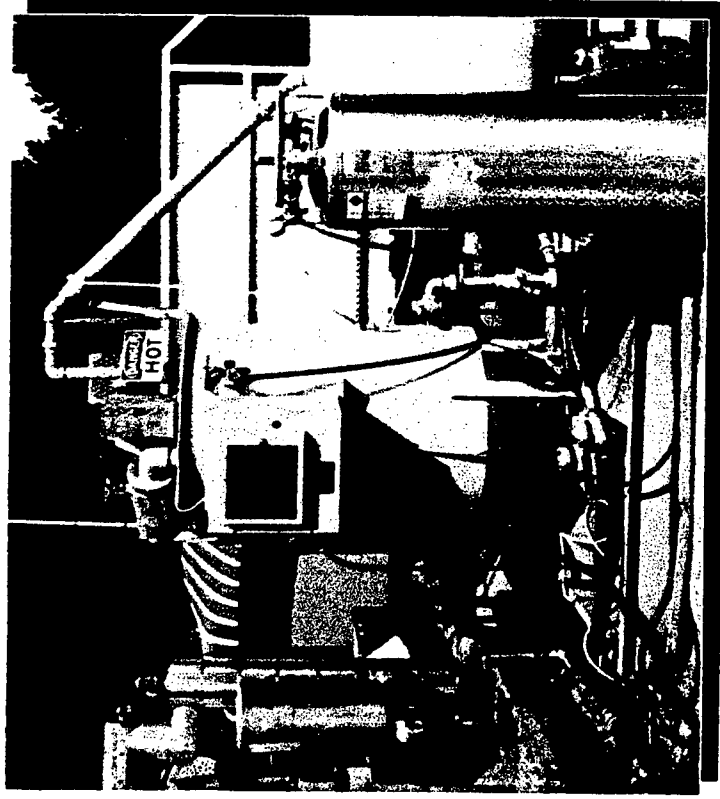
My very best personal regards.

Sincerely,

A handwritten signature in black ink, appearing to read "Phil Hunt". The signature is written in a cursive, flowing style with a large initial "P" and a long horizontal stroke at the end.

# *BCD - Chemical Dehalogenation*

- *Destroys Recalcitrant Contaminants:*
  - PCBs
  - Dioxins / Furans
  - Pesticides
- *Licensed from EPA-RREL*
- *Coupled to ETG's Therm-O-Detox<sup>x</sup> System*



**ETG**  
Environmental, Inc.

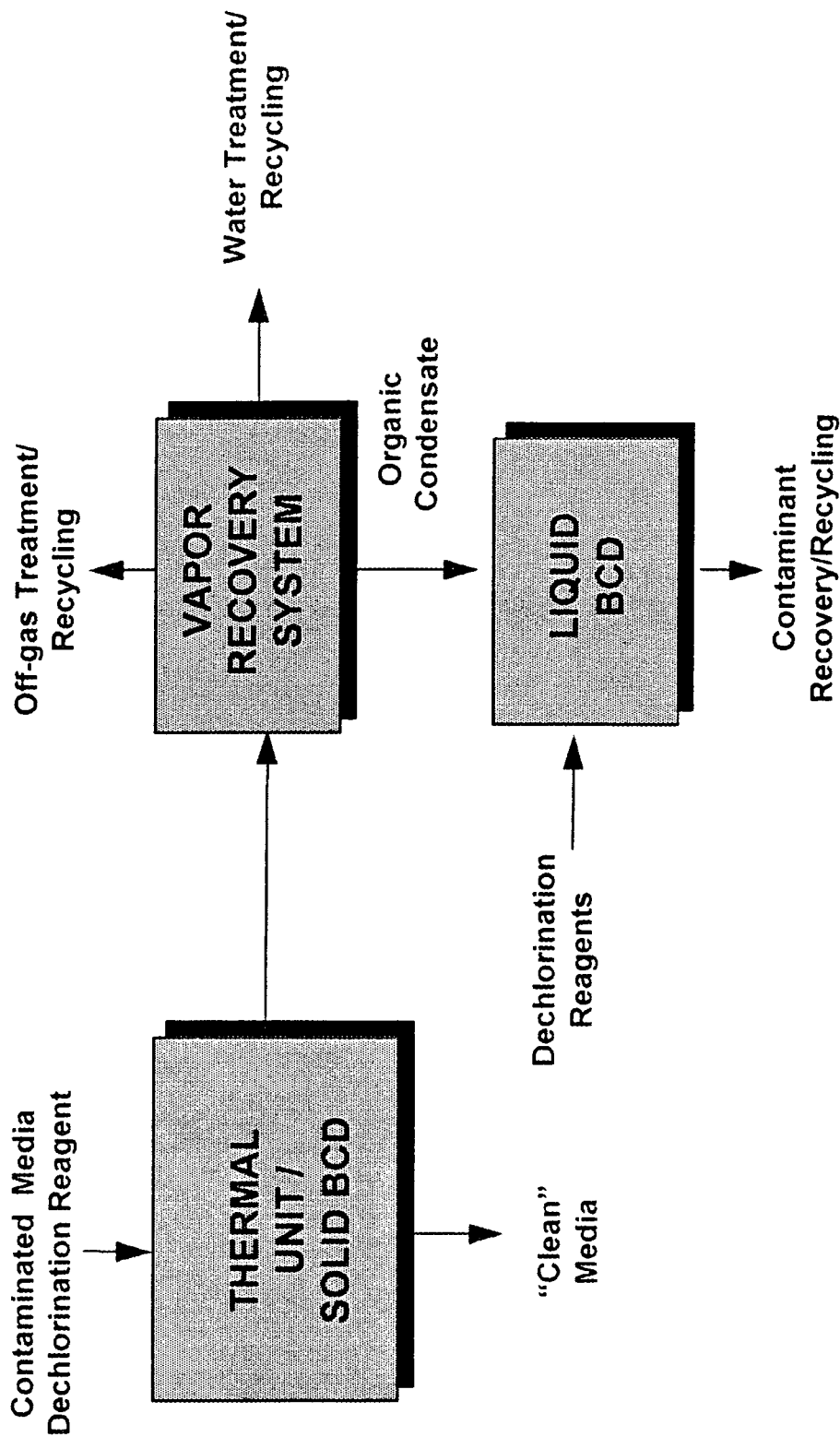


## SUMMARY - THE BASE CATALYZED DECOMPOSITION (BCD) TECHNOLOGY

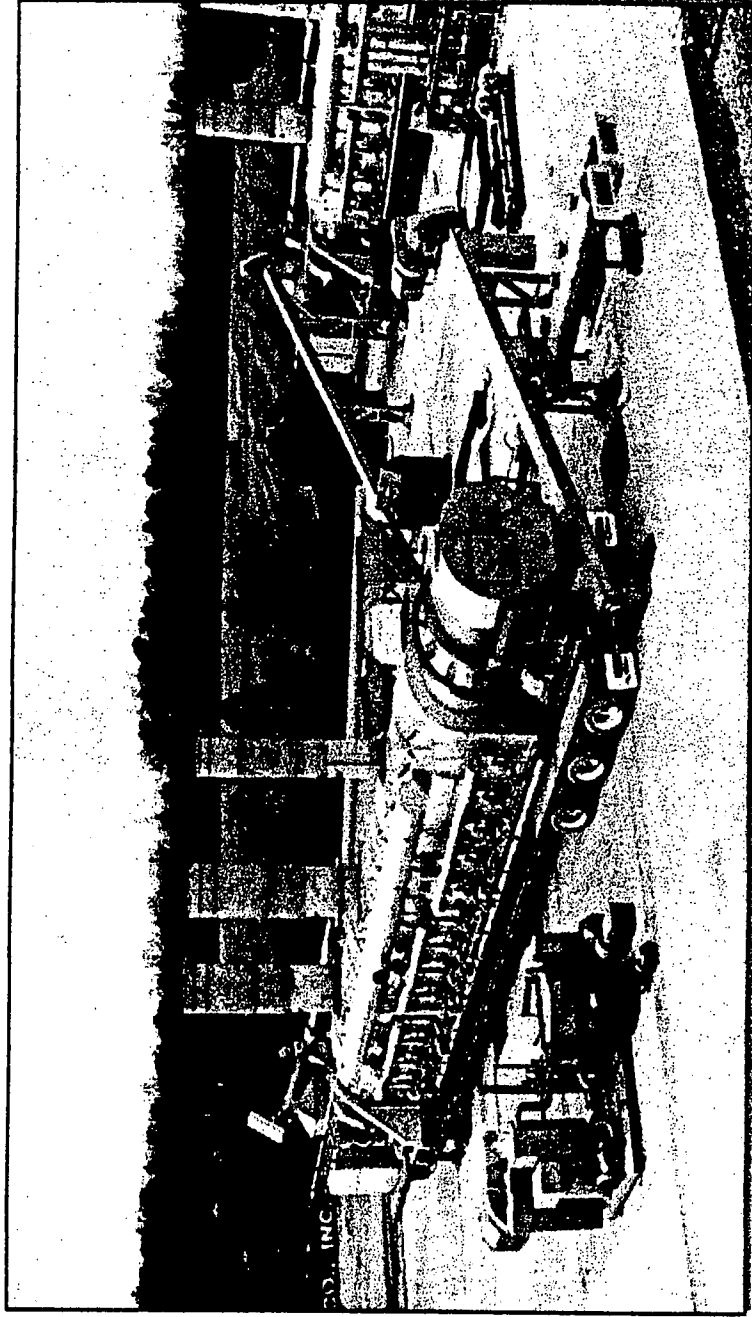
- Non-Incineration Chemical Destruction of Polychlorinated Biphenyls (PCBs) and Dioxins/Furans Through Chemical Dechlorination Reactions. (After Removing Chlorine, PCBs and Dioxins/Furans are Non-Hazardous).
- BCD is Conducted in Solid and Liquid Phase. Solid Phase BCD Removes/Destroys PCBs and Dioxins/Furans From Soil. Liquid Phase BCD Chemically Destroys PCBs and Dioxins/Furans Removed From Soil.
- Solid Phase BCD Utilizes Reagent Assisted Indirect Heat Thermal Desorption. Reagent is Sodium Bicarbonate or Baking Soda. Safe Process - Operating Temperatures Less Than 1000°F and an Inert (Low Oxygen) Atmosphere. Reaction Products are Non-Hazardous Oil and Table Salt (Sodium Chloride). Clean Soil is Left On-Site. Oils, PCBs and Dioxins are Vaporized and Removed in the Gas Phase.
- Primary Vapor Treatment of Contaminants is Condensing to Recover Contaminants for Further Chemical Destruction by Liquid Phase BCD. Low Volume Vapor Flow and Discharge.
- Liquid Phase BCD to Destroy PCBs and Dioxins/Furans. Small Quantity to be Treated in Liquid Phase - Less than 50 tons for Entire Project. Produces Non-Hazardous Oil and Sodium/ Potassium Chloride Suitable for Off-Site Recycling. Safe Process - Operating Temperatures Less than 650°F.
- Technology Proven for Full Scale Applications. Successful Demonstration on Warren County Soils. Soil and Air Discharge Standards Met/Exceeded.

# *Thermal Desorption / BCD*

## *(Chemical Dehalogenation)*

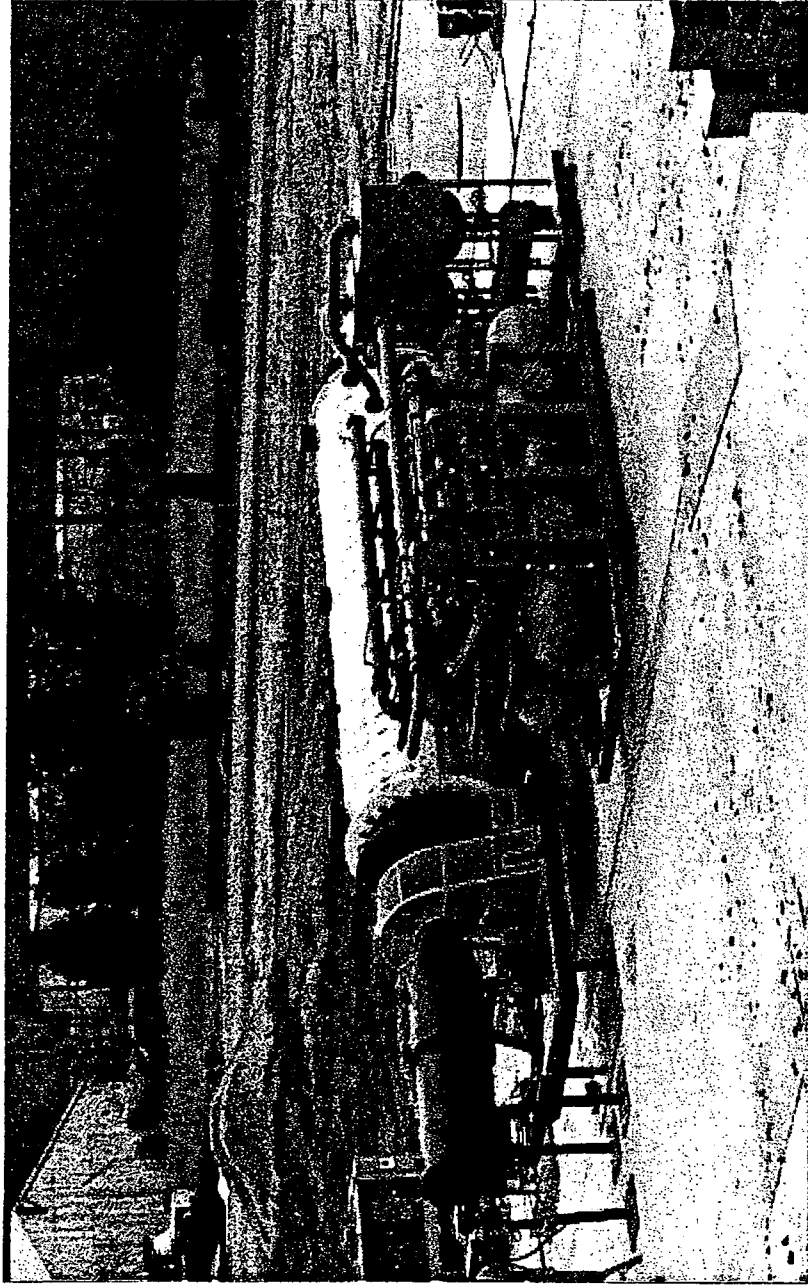


# *Continuous Indirect Heat Thermal Desorption System*



**ETG**  
Environmental, Inc.

# *Therm-O-Detox Batch Vacuum System*



**STATUS OF PCB LANDFILL DETOXIFICATION****WARREN COUNTY, NC**

May 26, 1998

**BACKGROUND:**

In the late 1970's several thousand gallons of polychlorinated bi-phenyls (PCBs) were illegally disposed by spraying along approximately 210 miles of state roadways. PCBs were used extensively as transformer fluids in the early 1970's. However, because they were suspected carcinogens, they were outlawed from manufacture in 1976 and strictly controlled in disposal as transformers came out of service.

Listed as a Superfund site under the US EPA program, the roadways were dug up and the contaminated soils disposed in an approved PCB landfill located in Warren County. There was much opposition to the landfill and the Environmental Justice movement supposedly started at this site.

In 1982, Governor James B. Hunt, Jr., made a commitment to the people of Warren County that if appropriate and feasible technology became available, the state would explore detoxification of the landfill. In 1995, \$1 million was appropriated to study detoxification. The General Assembly provided this money for the sole purpose of studying various detoxification technologies, including bench scale work; confirming that detoxification is possible; and identifying the best technology available to do the work.

The Warren County PCB Working Group (WG) was established and consists of local citizens, state employees and members of various environmental organizations. This group has been working together in a joint partnership to explore detoxification.

**CURRENT STATUS:**

The WG, through the Division of Waste Management (DWM), contracted with two independent science advisors to provide technical expertise to the WG and to help outline the steps necessary to explore detoxification.

With staff from the DWM, the WG and science advisors outlined activities that needed to take place during the detoxification studies. These activities included an extensive site investigation, monitoring wells installation, boring into the landfill to extract soils for testing, and the actual detoxification studies.

### **Mobilization/site work:**

On February 12, 1997, DWM personnel and science advisors began work at the PCB landfill to install additional monitoring wells and begin the site investigation. Fifteen new monitoring wells were installed around the perimeter of the landfill and in the immediate area within .25 miles of the landfill. Three were placed off site as background wells, approximately 1.5 miles away. Two bore holes were placed in the landfill from which soils were extracted and containerized for the detoxification studies. Extraction wells were installed in the bore holes.

Two eight foot square areas were dug out in order to examine the top liner of the landfill cap system. "Split spoon" samples were taken of the clay cap and the landfill contents. These samples were analyzed for a variety of things including moisture, compaction, permeability and PCB content. The clay cap is covered by a 10 mil plastic liner. Sections of this liner were cut out and sent to a testing laboratory for examination. The cut out portions were replaced and the holes refilled.

### **Sampling:**

Extensive sampling was done in the monitoring wells and streams around the landfill. Soil and sediment samples from selected locations around the area were taken. These samples were analyzed for a variety of chemicals including PCBs, dioxin, heavy metals, pesticides and volatile organic chemicals.

### **Detoxification studies:**

Beginning in 1996, the science advisors for the Working Group, along with DWM staff, conducted a detailed technology screening, evaluation, assessment and comparative analysis on potentially feasible technologies. Potential feasibility had to have been demonstrated through prior successful full scale use of a technology for PCB detoxification work. Any technology that existed only as a research or developmental technology was deemed inappropriate.

Twelve different technologies were considered. All but two were screened out. Only Base Catalyzed Decomposition (BCD) and Gas Phase Chemical Reduction technology were found to be appropriate and potentially feasible for the Warren County landfill.

Two companies were subsequently picked to conduct bench scale demonstrations. ETG Environmental, using BCD, and ECOLOGIC, using the Gas Phase Chemical Reduction technology, were provided samples of the contaminated soils from the landfill, along with very stringent guidelines and treatment goals for both PCBs and dioxin. Following their bench scale studies, each company submitted phase I reports that were analyzed by the WG, state staff and science advisors.

As a result of these phase I studies, the Working Group concluded that feasible and effective detoxification technology is now available and selected BCD as the preferred technology for detoxification of the PCB Landfill. ETG Environmental, Inc. (ETG) was

subsequently awarded a contract to perform this Phase II preliminary design of a full-scale BCD detoxification system to remediate the PCB Landfill (ETG performed the successful Phase I bench scale BCD study). The primary purpose of this report is to develop sufficient conceptual design information to allow for preparation of a cost estimate to form the basis to request funding from the State legislature for final design and detoxification of the PCB Landfill utilizing the BCD process.

The BCD process utilizes non-incineration chemical reactions to detoxify the PCBs and dioxins/furans in the contaminated materials. Chlorine atoms are chemically removed from the PCB and dioxin/furan molecules, and replaced with hydrogen, rendering them non-hazardous. The resulting non-hazardous oil can be recycled off-site. Detoxified soils will be replaced on-site, covered and revegetated. The process has been proven at several full-scale project applications.

The preliminary conceptual design of the full scale detoxification project is divided into two components. The first component provides written conceptual designs for site preparation, excavation, treatment, confirmation/verification sampling, stormwater management, security, site reclamation, decontamination, and demobilization. These aspects of the project have been conceptually-designed to provide the basis for a detailed cost estimate for detoxification.

The second component presents those aspects of the project which will be completed during the final design portion of the Phase III Design/Build detoxification. Outlines have been provided to introduce these final design items, as follows: emergency response plan, permitting plan, performance demonstration plan, air monitoring plan, quality assurance plan, health and safety plan, construction quality assurance plan, and technical specifications.

To assist in the overall project oversight, a Citizens Advisory Board (CAB) would be established as a committee to the Working Group and would include an independent science advisor(s). The Design/Build detoxification contractor would include Program Management, working in conjunction with the state, to ensure that the local community has a strong role in the detoxification project's implementation. The Design/Build detoxification contractor would also include a coordinator to ensure maximum economic benefit to local/minority businesses and the local economy. Direct local economic impact is estimated in the range of \$3 million to \$5 million, which includes the hiring of local individuals and utilization of local businesses for supplies, materials, and services to support the detoxification project. A detailed cost estimate has been prepared to perform the detoxification project utilizing the BCD process. A cost of \$23,975,000 is presented, which includes a \$2,079,000 contingency.

Once funding is obtained, we would send out requests for a statement of interest from various vendors who have the ability to use BCD technology on a full scale operation. We would also be preparing a RFP for the final design report on the detoxification effort. A RFP would be sent out and a vendor selected for the detoxification through competitive bids.

Contact: Michael Kelly, Deputy Director, Division of Waste Management, 733-4996, Ext 203

**PCB LANDFILL DETOXIFICATION COSTS  
USING BCD TECHNOLOGICAL PROCESS**

April 9, 1998

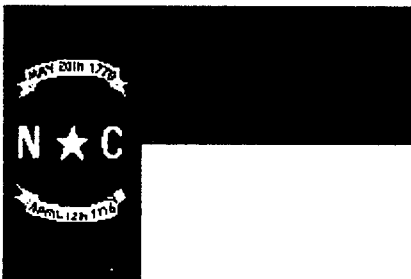
	<u>Estimated costs</u>	<u>Phase Sub-totals</u>
Final design, including permit preparation and plan submittal	\$539,000.00	
Working Group, PCB office in Warren County, CAB, Science Advisor(s)	\$200,000.00	
Supplemental site investigation	\$100,000.00	
Mobilization	\$435,800.00	
Site preparation/set up	\$2,614,400.00	
<b>INITIAL PHASE, SUBTOTAL:</b>		<b>\$3,889,200.00</b>
Demonstration test	\$487,300.00	
Excavation	\$798,100.00	
Soil/water treatment	\$13,457,600.00	
Analytical (performance testing, soil, water, air monitoring)	\$1,167,000.00	
<b>TREATMENT PHASE, SUBTOTAL</b>		<b>\$15,910,000.00</b>
Backfill	\$930,000.00	
Reclamation	\$74,000.00	
Decon, dismantle, demob	\$1,092,800.00	
<b>RESTORATION / DEMOB PHASE SUBTOTAL</b>		<b>\$2,096,800.00</b>
<b>ESTIMATED COSTS</b>	<b>\$21,796,000.00</b>	
<b>CONTINGENCY:</b>	<b><u>\$2,079,000.00</u></b>	
<b>TOTAL ESTIMATED COSTS</b>	<b>\$23,975,000.00</b>	



**LAIDLAW Environmental Services (TS), Inc.**  
208 Watlington Industrial Drive  
Reidsville, North Carolina 27320

***Cost Effective Solutions from the Environmental  
Professionals at Laidlaw – Reidsville North Carolina***

# **Preliminary Proposal for Remediation of PCB Landfill, Warren County, North Carolina**



**LAIDLAW**  
**ENVIRONMENTAL**  
**SERVICES**

## EXECUTIVE SUMMARY

Laidlaw Environmental Services (LES) is proud of 18 years of continuous service and environmental leadership in North Carolina. From our facility in Reidsville, we have proudly served North Carolina's foremost institutions, industries and government. We are excited about the opportunity to utilize our resources to solve one of our state's most enduring environmental issues, and to offer our services in a manner that offers the greatest benefit to the environment and our fellow citizens of North Carolina.

We have prepared this proposal to plainly illustrate our approach to removing and disposing of the approximate 60 thousand tons of PCB contaminated soils and small debris presently landfilled at the Warren County depository. We are totally confident in our approach, so much so, that we are amenable to a turnkey firm price project that leaves nothing to risk for the citizens of North Carolina.

### **Our proposal and technology:**

- Simple
- Cost effective
- Environmentally sound
- Immediately available

It's simple, because our proposal is based entirely on existing EPA approved technology. It meets all state and federal environmental regulations and is the most widely utilized methodology for handling PCB contaminated soils in North America today. Our technology is proven effect as the final remedy on thousands of environmental PCB restoration projects throughout the United States.

The approach is as cost effective a technology as is available today. LES operates one of the best designed, low cost land disposal facilities in the nation. The overall cost of using our services is easily determinable, and known before the project ever begins. A turnkey comprehensive solution encompassing; excavation, loading, transportation, disposal, and site restoration all for a "known" single unit price. Our approach is not a cost risk. Plus there's none of the runaway cost liabilities so inherent with design/build projects and on-site treatment processes.

Our environmentally sound disposal facility is specifically designed and permitted for safe hazardous and PCB waste disposal. It's geographically sited in a region recognized for negative rainfall and no potable water. LES's facility is located in a county zoned especially for hazardous and toxic waste disposal and destruction.

Best of all, we are able to implement this remedy today. Our state-of-the-art facility is fully permitted, available, and entirely capable of handling PCB contaminated soil and debris. We possess the logistical means to transport the waste to our disposal facility safely, quickly, and immediately.

Current regulations regarding PCB disposal under the Toxic Substance Control Act (TSCA) provides for approved disposal facilities to accept PCB contaminated soils and debris for management. One of LES's family of disposal facilities is uniquely constructed to meet the requirements for TSCA and has significant experience in projects of this size and scope. Through Reidsville North Carolina, LES offers the greatest benefit to our state, community and environment.

## **LIDLAW in North Carolina**

Laidlaw's Reidsville service center has been operating in Rockingham County, North Carolina since 1982. We presently employ approximately 120 employees at both the Reidsville facility and branch locations throughout North Carolina, South Carolina, Virginia, and Georgia, where we manage hazardous and industrial wastes, operate waste management contracts at numerous industrial facilities and household hazardous waste programs throughout our service area.

We've performed hundreds of comprehensive remediation projects, including EPA ERCS Superfund sites, PCB projects, abandoned landfills and waste piles, chemical fires, and oil spills, just to mention a few. We are proud of our local capabilities, and proud to be a part of the largest, highest quality hazardous waste management company in North America.

## **Comparison of the proposed BCD treatment technology**

The proposed Base Catalyzed Decomposition (BCD) process has numerous areas that remain either unknown, unproven, or open-ended relative to cost, time, actual production throughput, material handling characteristics and process effectiveness during the actual treatment operations. Based on a limited review of the available BCD technology information, several issues became seemingly apparent regarding BCD's ability to produce the desired result at a reasonable cost;

- Detoxification is expensive. BCD costs approximately \$410.00/ton, as compared to standard off-site disposal technology of \$275.00 / ton.
- BCD will require significant design/build activity in the Phase III final design and implementation. While BCD has proven effective at bench scale, it is likely that many design changes with unspecified costs will result.
- The permit application and final design is not yet complete, leading to uncertainty regarding approval of the technology by EPA, Air Quality, etc.
- BCD is too slow. There exist no proven production or throughput rates.
- Any on-site treatment process will again require Warren County citizens to accommodate North Carolina's solution in their backyard. Like mobile incineration, the BCD process utilizes high temperatures and thermal energy (~1000F) to generate significant heat to activate the process. The resulting emissions would be discharged to the local atmosphere.



## LAIDLAW'S Technical Approach Summary

LES's preliminary technical approach is based on prior experience with numerous mass excavation, transportation and disposal projects. Our approach provides; removal of the cover materials (i.e. topsoil and barrier soil above liner), excavation and loading of approximately 60,000 tons of PCB contaminated soils for off-site disposal, transport to a transload station where the waste would be loaded into special bulk rail cars, disposal at our TSCA approved landfill, and restoration of the site to an acceptable condition.

### ① Cover Materials

Cover materials are assumed to be in place over a top liner on the landfill. These materials, consisting of clay and/or topsoil, will be removed and stockpiled for use in restoration of the landfill area.

### ② Excavation and Loading

Interned material will be excavated using typical mass excavation methods such as track excavators, rubber tired loaders, off-road dump trucks and other equipment, as necessary. Material will be loaded in a contaminant free area, weighed on installed truck scales to ensure loads meet North Carolina DOT transportation requirements. All Dump trailers used to move the soils from the Warren County site will be "double lined" with high strength polyethylene liners before loading and covered before movement from the site.

### ③ Transportation

Transportation of materials will be via truck to rail line. Material will be loaded into lined trucks, covered, and manifested to the final disposal facility. Trucks will then move material to a rail transloading facility for direct transfer from truck to gondola rail car, using LES's own transloading ramps. The transloading ramp allows LES the unique ability of direct container to container transfer without placing material on a pile pad or having concern over migration of material possible with a transfer pad.

### ④ Disposal

LES's proposal is based on proper offsite disposal of PCB contaminated soils at an EPA approved TSCA disposal facility. This disposal facility is our *state of the art* Grayback Mountain facility, located in western Utah. The site is located in an officially designated district zoned especially for hazardous and toxic waste disposal and destruction far away from communities and people. The region is geographically recognized for negative rainfall and no potable water supplies. Several of the nation's foremost waste management companies have permitted and operated model disposal and treatment facilities there.

### ⑤ Site Restoration

Restoration of the site will consists of ensuring removal of all contaminated materials and restoration of the area to an acceptable condition. After removal of all materials, samples will be taken to confirm removal. After confirmation, cover materials removed at the onset of the project will be graded over the project area and the site re-established with suitable vegetative cover.

## Subcontracting and Opportunity Sharing Plan

LES will, to the extent possible, utilize minority or disadvantaged businesses. LES will pursue a goal of 15% specialty classification subcontracting.

LES will, to the extent possible, utilize local North Carolina companies for completion of the work. Some of the potential areas for in-state subcontracting include the following areas:

- Truck transportation of waste
- Rail Transportation to major railroad
- Excavation of Materials (site work)
- Sampling and Analysis
- Work Plan Design and Implementation
- Backfilling materials and Operations
- Landscaping and final covers
- Final reporting

**15 %**

**Subcontracting**

**Goal**

## Our Project Schedule

**150 days to**

**completion**

A great advantage to the method of remediation offered by LES is the speed at which the project can be completed.

LES has projected a total project timeline, from mobilization to completion of all site work, at 150 days.

## Preliminary Cost Proposal

LES's preliminary cost estimate is based on an all-inclusive approach, as described above. We have estimated that for \$16,500,000.00, LES can complete the project. The following assumptions are included in our price:

- A quantity of 60,000 tons of TSCA regulated soils will be disposed of off-site.
- Cover materials to be removed are one foot in depth per square foot of surface area.
- No post closure activities are included

**All-inclusive**

**Turnkey price**

**\$16,500,000.00**



## Conclusion

As can be seen from our preliminary cost proposal, little uncertainty exists over our ability to complete the project in a cost effective and environmental sound manner.

Our proposal has no caveats regarding soil conditions, or permit requirements. LES can be prepared in as little as 30 days to begin the removal process and be completed within 150 days, thereafter. We have projected a turnkey price of \$16,500,000.00.

LES has brought to this project a final remedy that -

- Saves significant money (estimated \$8,000,000.00)
- Immediately available and promptly achievable
- Meets all EPA regulatory requirements
- Safe and effective solution
- Has Laidlaw's full indemnification, whereby shifting the long-term liability to LES the disposal facility owner.

## Additional Information

- ♦ We are also available for technical consultations on specifications for LES to complete the project, and are prepared to meet with interested parties to fully explain our approach.
- ♦ We would like to close by thanking the state of North Carolina for the opportunity to serve. As North Carolinians, we look forward to participating in the project
- ♦ For more information about this and other Laidlaw capabilities, please contact:

Ms. Gwen Hill      Reidsville Facility Manager  
336-342-6106 (Ext. 6131)  
(Ghill @LESCorp.com)

Mr. Jim Noles      Remediation Manager  
336-342-6106 (Ext. 6137)  
(Jnoles@LESCorp.com)

LAIDLAW Environmental Services (TS), Inc.  
208 Watlington Industrial Drive  
Reidsville, North Carolina. 27320  
336-342-6106, (fax) 336-342-4021



9M-HOZ



# Talk Points

<b>COST LESS</b>	BCD Proposal	\$ 410.00 / ton	(Est \$24,500,000.00)
	Laidlaw Proposal	<u>\$ 275.00 / ton</u>	<u>(Est \$16,500,000.00)</u>
	Savings	\$ 135.00 / ton	(Est \$ 8,000,000.00)

**FASTER**      Immediately Available  
Start within 30 days  
Finished within 150 days

**SAFER**      Our work is performed off-site in a safe, specifically designated location, designed and zoned for hazardous and TCSA waste disposal.

It's not performed in Warren County, North Carolina, where people live, work, and go to school near by.

**LESS RISK**      Laidlaw's will provide a full indemnification, whereby legally shifting the long-term liability to Laidlaw the disposal facility owner.

Fully permitted facilities.

Costs are totally defined. Unlike a treatment that will require design, construction, debugging, and final operation.

**SIMPLE**      Simple, because our proposal is based entirely on existing EPA approved technology.

It meets all state and federal environmental regulations and is the most widely utilized methodology for handling PCB contaminated soils in North America today.

Our technology is proven effect as the final remedy on thousands of environmental PCB restoration projects throughout the United States.

The right decision for North Carolina

The right decision for the Environment

The right decision for Warren County



## Minutes

### Joint Appropriations Sub-Committee on Natural and Economic Resources June 9, 1998

The Joint Appropriations Subcommittee on Natural and Economic Resources met Tuesday, June 9, 1998 at 9:00 a.m. in room 423 of the Legislative Office Building. Representative Mitchell, House Co-Chair, called the meeting to order at 9:00 a.m. for Senator Martin, who was temporarily delayed. Members present were Senators Martin, Cochrane, Horton, Weinstein and Representatives Mitchell, Baker, Carpenter, Owens, Allen, Culp, Fox, Hall, Hunter, Tolson, and Weatherly.

Benefits of the Joint Warren County/State PCB Landfill Working Group Detoxification Treatment Proposal handout was distributed to those in attendance and is attached to these minutes.

Henry Lancaster, Deputy Secretary of the Department of Environment and Natural Resources, stated that the purpose of the meeting today is to provide the committee with the proposal that was developed by the working group with respect to the detoxification treatment of the Warren County landfill. He noted that the following would participate in the presentation: Patrick Barnes, Barnes, Freeland, and Associates and Working Group Advisor; Joel S. Hirschhorn & Associates; Dolly Burwell, Co-Chair, Working Group and Mike Kelly, Division of Waste Management.

Mr. Lancaster noted that the PCB landfill came into existence in the early 1980's over the objection of the citizens of Warren County. It was to have been a dry storage containment facility. The landfill has approximately 1.5 million gallons of water in it along with contents. It was in 1993 that the circumstance was brought to the attention of Secretary Jonathan Howes. He further noted the following:

- 1982 - Governor Hunt's commitment, in a letter to the citizens of Warren County, to detoxification treatment
- 1983 - North Carolina General Assembly passed a bill supporting detoxification treatment
- 1993 - Former DENR Secretary Jonathan Howes wrote a letter supporting detoxification treatment on-site
- 1996 - North Carolina General Assembly appropriated \$1 million to identify detoxification treatment technology for the PCB landfill

- 1998 - Governor Hunt included \$15 million in his 1998-99 budget for the BCD treatment technology for the PCB landfill
- 1998 - Senator Frank Balance introduced a bill approximately \$24 million for detoxification of the PCB landfill using the BCD treatment technology

At this time, Mr. Lancaster introduced Patrick Barnes, of Barnes, Freeland, & Associates. Senator Martin asked if there had been efforts to clear land and not to move. Mr. Lancaster stated that the comments from the Governor was to detoxify the contents of the landfill. Representative Carpenter remarked that at the beginning of Mr. Lancaster's presentation, he stated that the landfill was supposed to be dry landfill and asked how 1-1/2 million gallons of water got into it. Mr. Mike Kelly, Division of Waste Management, explained that the water came from two primary sources: Water was put on the material after it was picked up from the roadway to take to landfill for dust control purposes. During the interim period, when all materials from roadways of North Carolina owned by the State had been dug up, the landfill itself was left open until Fort Bragg could get materials dug up and brought to the landfill. During that time, which was approximately 30-45 days, there were some severe storms; and a lot of water ended up in the landfill. The water has solidified and over the years, moisture has crept to the bottom putting a lot of pressure on the bottom liner of the landfill. There could also be some leakage into the landfill. Senator Martin asked where would there be leakage and if any efforts had been made to pipe so that it could drain. It was noted that leakage could occur if there were a crack in the system or in the side of the pipe down the collection pipe that goes down the side. Every month the collection system is checked and water is pumped out. The consistency of the water is very muddy and wet, and water will not run out of it unless you squeeze it. Senator Martin asked if the dirt brought in from Fayetteville contained PCB, and Mr. Barnes stated that it did and was the same as along the roadways. Representative Carpenter asked if they felt the department had done a good job in siting the landfill and depositing materials there and maintaining to this point. Mr. Kelly noted that he was not a state employee at the time the site was determined, but there were a number of sites considered and this particular site was chosen for a variety of reasons. The state has looked over the landfill for a number of years and has done maintenance and routine monitoring. More could have been done, but the landfill has been there for fifteen years and subsequently with age, it has begun to deteriorate. Representative Carpenter felt that the department had evaded the question and once again asked if they felt the state had done a reasonably good job or not a good job in siting and maintaining the landfill at this point, and the department felt they had done a good job at this point. Representative Carpenter disagreed and felt they had not. He noted that if they had done such a poor job of siting, maintaining and managing, why would we believe that the process chosen is the one that should be selected. Mr. Kelly noted they have spent a lot of time and effort studying this proposal and have laboratory data and backup for proven technology. Senator Cochran questioned their statement on proven technology because we learned at the last meeting that there is not a process working like this where you have pieces tied together. Mr. Kelly noted that this isn't the way it is and

called on Dr. Joel S. Hirschhorn, Hirschhorn & Associates, Wheaton, MD, whose specialty is detoxification technology to address the issue. Dr. Hirschhorn pointed out it was not the state that chose the BCD technology. It was the science advisors working with the Working Group who independently looked at all available technology and went through a very elaborate process with the million dollars the legislature provided. Senator Martin asked if moving the dirt were a technology that you would condone. Dr. Hirschhorn pointed out that the greatest risk to public health and safety is moving the materials because of the hazards involved in loading the toxic waste onto trucks, moving the trucks 15 miles in the local community, and unloading those trucks and 25 miles of rail cars loaded with toxic waste traveling over 2,000 miles to Utah. Every study in the United States indicates that transportation is the greatest risk for moving toxic waste. There would be a large number of trucks in a 6-month period in the local community. The air pollution from the exhaust from trucks and the dust from traveling on those roads would be a destruction to the roads. There are many issues that need to be understood. It will be opposed by citizens who would bear the brunt of this. Senator Martin asked Dr. Hirschhorn if he were a scientist, and he replied that he was an engineer and had been doing environmental work for 20 year. Representative Allen asked that federal dirt be explained and if there would be any chance of getting any federal money. Mr. Lancaster noted their proposal would be for the Department of the Army to participate in clean-up activities. At the time 7700 loads of materials were put in the landfill; approximately 730 of those loads came from Fort Bragg . The department will look to the Department of the Army and Fort Bragg to provide 10 percent to the cost of this clean-up activity for detoxification. The Department of the Army and Fort Bragg has already paid to have that material taken the landfill in North Carolina. We cannot see them wanting to be involved in paying to have it moved somewhere else. Senator Martin asked who picked the site. Mr. Lancaster replied there was an extensive search led by Bill Meyer, division director at the time. Engineers and scientists went around the state looking at various sites that were acceptable for this kind of landfill. Senator Martin asked who determined that it is deteriorating to a point that it is now dangerous. What is your record on illness, etc.? Representative Owens remarked about the materials that came from Fort Bragg and along the road and noted when he was in the National Guard, he and thousands walked through it. We later learned what it was and none of them have had problems. He asked what is the level of danger of this substance. Dr. Hirschhorn stated that PCBs are recognized by several governments as being dangerous chemicals. Research has proven that some pregnant women who were exposed to PCBs living in North Carolina and their children have suffered health impacts and developmental problems. That is why they are heavily regulated by the federal government. Senator Martin commented that PCB has been determined by the government as a dangerous chemical, and asked what they are putting in transformers now to cool them down, and Mr. Lancaster reported they are using other material. Representative Baker commented on transporting this material and asked what the data shows relative to the health impact in the community. Dr. Hirschhorn stated there has been no real study on the health impact although it was suggested years ago that one would be done but was never implemented. Representative Baker commented that if it is deemed by the scientists to be in disastrous proportions, it would appear that the areas surrounding the landfill that the national statistics would

show how disastrous it would be. Dr. Hirschhorn stated that the purpose of the landfill was to protect the people. It was to prevent the release of PCBs into drinking water and into the breathable air. Some studies (one which \$1 million was spent) was to determine if there were current releases of PCBs. We did not find major releases of PCB from the landfill. He noted that scientists probably have a more negative view about the landfill than the state's people have. One of the criteria used in setting the million dollars study was to carefully consider all technology that has been proven effective and reliable and would not experiment on Warren County with totally new technology. Senator Martin noted that it had been previously stated that the federal government has labeled PCBs as being dangerous to the health of the people. Senator Horton commented that in follow-up to the dangers of PCBs, the federal government also lists second-hand smoke which most people do not think is all that bad, on a scale, and asked where would you put PCB. Dr. Hirschhorn noted that it all depends on how much a person gets in his body and exposure. He noted that if a young child walks in an exposed area to PCBs or breaths some PCB vapor, that young child could be impacted and their health affected eventually. We know that it affects the brain and developmental capabilities of children. The National Institute of Health went out and found pregnant women who had walked over contaminated areas when the original PCBs were spilled on the North Carolina highways. One went in and requested that a sample of blood and tissue be taken. They found the exact PCBs that were spilled in the material were inside the body of a pregnant woman. Senator Horton asked if all those women miscarried. Other studies have found that children born to pregnant women who were exposed to PCBs had developmental capabilities. Representative Hall noted the committee had been informed of the dangers and risks if the materials in the landfill are hauled out and asked if there were any history of illness or deaths when it was hauled into the landfill. Dr. Hirschhorn stated they did not do a health study and that was not the scope for what the working study did. A study was done by NIH in 1980. Representative Hall asked what would be the risk to the population if nothing is done and is left where it is and what would be the risk and cost in health care to the population in years to come. Dr. Hirschhorn noted that there were some measurements done, such as air testing during the study and there were a couple of times when PCBs were measured in the air. When the landfill was built in the 1980s, the EPA did air monitoring, and they also found PCBs in the air. Over time, it has deteriorated. The citizens of Warren County are worried about there being more exposure to PCBs and something should be done. Senator Martin asked if they were measuring each year, and Dr. Hirschhorn stated that the state is still continuing to do some monitoring.

At this time, Representative Hunter noted that he was interested in the state's liability based on the fact there have not been any health studies done and asked what kind of liability there could be. Mr. Lancaster introduced Judy Bullock, from the Attorney General's Office representing the Department of Environment and Natural Resources, to address this issue. She stated she did not know how many felt they had been exposed and would sue the state. Another issue would be if the state were to move the contents of the landfill and people would be exposed, what would be the state's liability there. There are definitely liability issues that need to be addressed. Representative Hunter commented that after commitments were made, not only by the

Governor but by the General Assembly, in supporting the field to be detoxified that no one ever came up and suggested that a study be done on the health effects in the Warren County area. Based on the fact that the federal government used Warren County to dump some of their material, are there any revenues going to come in to help detoxify this facility. Mr. Lancaster stated that there has been some discussion with the North Carolina delegation about the circumstance to look for their support in this effort. Representative Owens asked if there were a possibility that rain could have dissipated into other areas and probably have greater levels of contamination on the sides of roads and ditches all over the state as you will find in the landfill. Mr. Lancaster noted that we are faced with a two-acre landfill that has 60,000 tons of material in it that is contaminated, toxic material. We are here today to inform you about a technology to do away with that toxic material before there is a crisis situation with the landfill. There is a debate between the department and the science advisors on the integrity of the landfill, but what was supposed to have been a dry containment facility has water in it. There is a theory that the science advisors can address the issue of pressure that is being generated within the landfill which could cause it not to be a safe containment facility any longer. We are trying to address ahead of time before ground water is threatened that the contents be detoxified. Representative Owens noted that Elizabeth City (city he lives in) during the war used chemical for cleaning and building airplanes, and it has been a proven fact that ground water got contaminated which is near well fields that has never been cleaned up and that has been going on for 20 years, and probably are other military bases all across the state that are the same way. There are problems in a lot of different places. He wanted to know the level of danger that exists. We need to know this before this amount of money is spent that it is highly dangerous to the general public's health. If you say moving it is dangerous, then taking it out of ground and burning it through detoxification can also be dangerous. The more you handle a dangerous material, you are posing a risk by handling. Mr. Lancaster noted that handling the material, the BCD process is far less of a risk that moving it 2,000 miles across country. Dr. Hirschhorn addressed the technology issue. He noted that in the \$1 million study, small amounts of material were dug from the landfill and given to a few companies to do testing. We wanted to find out if technology could be used that would absolutely not put any of this toxic material into the air. Could it be done safely? He noted other very toxic chemicals. Senator Martin asked if they had any vested interest and would continue working on it, and Dr. Hirschhorn stated absolutely not. He noted they wanted to end this process. That is one of the interesting things about using the BCD technology. It is designed to finally end the process with a permanent remedy and have no more toxic material and risks there, and the state can walk away from all liability. You have asked about people and health effects, one of the members of that a young woman of the working group with several children seeing the information being developed from the study got up and sold her home and moved away. Representative Baker noted an editorial he read in the newspaper written by professors of NC State University about the dangers of the landfill and the PCB materials and talked about PCBs being a substance and its bonding strength with the soil. The gist was that it is bound with the soil and really presents no problems. It is not a major risk factor. I think we should resurrect and talk to those two professors. Representative Weatherly noted that he felt the dangers were greatly exaggerated. The

fact is that we should clean up that material in Warren County noting his resentment that hauling the material would be a great hazard. We are talking about the difference between \$8 million and \$24 million. It is our responsibility to spend the people's money wisely. Senator Martin replied that he did not feel this committee would make that decision. Our responsibility is to hear your facts. Senator Martin then introduced Patrick Barnes, Barnes and Freeland Associates, Working Group Advisor. Mr. Barnes noted that most of his comments have been covered, but I would like to say that the \$1 million appropriated, several things occurred to assess the feasibility of a technology to detoxify the landfill. The Working Group spent a lot of effort. He called attention to the documents which represent the \$1 million spent studying the facility and coming up with BCD as opposed to the six-page report that was received from Laidlaw. You need to compare and consider the price of both proposals. Prior to the selection, the following activities were performed: jointly developed the master plan, developed the site and sampling testing plan, and implemented that. There were numerous community meetings. The document from Laidlaw does not address the community input aspects whatsoever. Testing was done to consider the condition of the facility. During that testing, holes were found in the liner at the time. We analyzed the water levels in the landfill to show that water was coming into the facility. We know that there has been an impact, and over time, it will only get worse. Representative Carpenter asked if they had given thought that if you had put liner on it in the first place, you could put on another liner cheaper than \$24 million. Mr. Barnes asked if you put another liner on, how do you address the fact that water levels are also dropping which indicates that water is leaking out the bottom? You cannot put another liner on the bottom. He noted that 100 samples were taken of air, sediments, surface water, soil inside and outside the landfill. The landfill soil was removed from the landfill and the BCD process along with another technology were tested using the actual soil. This is actual testing on the material, and we know that this technology can work. We did preliminary design to come up with the BCD. The \$24 million budget jointly developed by the state and Warren County citizens with the assistance from the science advisors and the technology rendered is extremely well-thought out. There are numerous uncertainties with the Laidlaw proposal. There will be extreme opposition from the citizens and how they are going to implement it in six months when you have people lying down in front of the trucks. To meet the desires of the community and the commitment of Governor Hunt, the citizens of Warren County selected the BCD design which includes hiring 25 local residents and training them in the technology of the work that will happen at the landfill which will include employment of the local residents. This is an important economic benefit to the community. It represents \$3 million over the life of the project. This is an ongoing benefit. Once the landfill is gone, these individuals (mechanics, electricians, tradesmen) will be employable. We wanted to make sure you have a comparison when you look at Laidlaw proposal and they have said they could contract out some of the work. That \$3 million does not include contracting out the work; there is an additional \$2 to \$3 million that will be contracted out. The total economical impact there roughly represents \$5 million. We wanted the committee to understand our efforts and the costs includes a lot more than what you would think is on the surface.

Dr. Hirschhorn addressed article in the News and Observer by the professors at NC State University about PCB binding to soil which had been previously mentioned. There is some truth of what the scientists said. It is true that PCBs do bind to certain types of soil particles a lot more tightly than other chemicals. For example, solvents will move through the soil very quickly and into the air. What is not true is that PCBs are 100 percent tied to the soil. There have been many studies done, and PCBs do vaporize. They will not move quickly in the water. If you pass water through the PCB soil, they are not very soluble in the water. The threat, and we did not measure in all the testing, is PCBs being found in the local water supply. No PCBs were found. The greatest health threat turns out to be from the vapors of PCBs and countless published papers on this, there was no controversy. PCBs in the air pose a real health threat. A very careful screening of technology was done. We were not going to use any experimental technology that had not been proven effective, safe, and reliable in full scale use in other places in the United States. There have been 5 full-scale projects where this BCD technology has been used successfully, safely, and reliably. You have a 6-page proposal from Laidlaw, a company who wants to make money. With all the information they gave you about the BCD technology is wrong. It is inaccurate. Laidlaw information does not compare to the stack of documents that we have worked on using the \$1 million you gave us to thoroughly examine the technology. We physically tested the technology and set stringent standards and forced the company to use the most expensive analytical chemistry method to measure any release of PCBs or dioxins into the air from the treatment of the waste. They were very low. We have proven that this is safe technology. That is not the impression reading from the 6-page Laidlaw document. A very elaborate process was used and emphasized that with the \$24 million cost issue, you need to understand that the perspective for generating that figure was that we wanted to consider the worst case and not create a number so that we might have to go to the legislature to get more money again. Most of us believe it will cost less than \$24 million, but we wanted to place that upper limit. If you read our report, we have something like a \$2 million contingency fee. It means that when cleanup is started, you might find it is worse inside the landfill than you now know. There may be more material to treat than you now realize. It is accounted by saying that we should budget \$2 million because some things go wrong usually in big cleanup projects. In reading Laidlaw's 6-page proposal, there is no credibility to that \$16.5 million cost estimate. There is no way they could do that project for that amount of money. It is going to cost the state a lot more money. It will be at least \$5 million more than they indicate in their proposal. A lot of companies want to buy contracts. What are they going to do after they get contract. They are going to come back and ask for more money. The state also has all kinds of liabilities here. You cannot get rid of those liabilities. Companies will tell you that they are going to take your liability; it doesn't work that way. There will be a lot of damage done to the roads. There will be civil suits and local protests that will interrupt the project. It will not happen the way that Laidlaw lays it out in a 6-month project. It will cost an enormous amount of money for local and state police. There will be all kinds of problems and civil suits because of the history this site tells us. The local community is

to accept this kind of remedy. When we scoped out the \$1 million study, we read all the documents (letters from the Governor and what the General Assembly had done), and we ruled out this kind of action of off-site land disposal as being totally inconsistent with the legislative history of the site. We ruled that out; the citizens told us they would not accept that. Senator Martin asked if anyone else had a proposal.

At this time, Mr. Lancaster called on Dolly Burwell, Co-Chair of the Warren County Working Group and citizen of Warren County, to present her views. She thanked the committee for allowing a citizen from Warren County to come and address the landfill issue. She noted that it had been very emotional for her to hear the comments from the group stating how safe PCBs or dioxins may be. Warren County has accepted the responsibility to let PCBs be put in the county in 1982. She pointed out that through the science advisors, you have been given every scientific and practical reason to go forth and support your own legislative commitment to Warren County which was not to haul the PCBs away and endanger their lives even greater but to detoxify, decontaminate that landfill once technology became feasible. That was the General Assembly's and Governor's commitment to Warren County. She urged the committee to support their recommendation based on a just and moral reason. In 1982, when there was an option to take all the PCBs from along the roadside before they ever came to Warren County and already existed in toxic waste facilities, we were told it cost too much. Yet and still, the state of North Carolina spent \$787,000 in police force to site that landfill in Warren County. I don't know where Laidlaw and other companies that are now coming forward to make money from Warren County were in 1982 when the Governor and in 1983 when you promised that you would detoxify the landfill when technology became available. None of them nor the scientists from UNC Chapel Hill or NCSU stepped forward and offered to study a technology. She stated there have not been any health studies done in Warren County because no one cared enough and mentioned an immune deficiency diseases that had been contracted in Warren County which could have been a result of the contamination. She urged the committee to respect Warren County's opinion and work because they know what is best for us.

At this time, Ken Ferrocchio, a citizen of Warren County since 1977 and a former community college teacher came forward to present his views on the issue. He noted that he had been working on this for twenty years and has done research on all issues touched on today. He stated on the issue on toxicity, he felt that it was greatly over simplified. There are over 200 kinds of PCBs and to know whether or not they are dangerous you have to look at the structure. You have to look at number of atom within the structure and their location within the structure. PCBs have been linked to cancer in laboratory testing animals. It is a documented fact, that the landfill has the most dangerous kinds of PCBs known to man. The bottom line is to restore the site to what it was before the forced siting of 1982 and to do that without putting others in harms way by an onsite technique that would neutralize the chemical. Many people in Warren County have spent five years of their lives and hundreds of hours working to find onsite detoxification solution compatible with the commitments that North Carolina made to the people.



Representative Mitchell asked Dr. Hirschhorn what assurances we have if the BCD process is used that in 5 years someone could come back and say we didn't get it all and have to do the process again. Dr. Hirschhorn noted that we have incorporated in the design a lot of testing and analysis to make sure that everything that is dug up is perfectly and completely detoxified. Representative Mitchell noted that according to the material presented to the committee that the residents of Warren County did not want the PCB dirt coming there and now they don't want to see it leaving. It looks like the BCD has profited \$8 million more means bringing cash daily for someone. We need to know who it is for. Dr. Hirschhorn stated it is not \$8 million. That is not an accurate difference in cost. Senator Martin asked Dr. Hirschhorn if there is a known technology to get rid of the PCBs at the landfill. Do you know what the technology is, who is going to guarantee that it will be that way rather than an ongoing thing for the next 40 years? Dr. Hirschhorn noted that there will be a big process; there are performance standards, objectives are already established and will be used by the low bidder, which might be lower than \$24 million and will have to meet all performance requirements. There will be oversight by the state agency. We believe this technology will produce results. Senator Martin questioned Dr. Hirschhorn's remark about knowing that there is a known technology that it can be destroyed and now you remark you believe, and Dr. Hirschhorn stated that they know. They have done testing on material from the landfill using this technology. Senator Martin asked when a contract is made with these people, will there be a guarantee that it will be destroyed, and Dr. Hirschhorn stated that they would be absolutely destroyed and the contractors would accept this guarantee. Representative Hunter expressed concern about item #3 on the handout which states that this \$24 million proposal represents a conservatively structured budget under a worse-case scenario to achieve complete and permanent detoxification treatment. It eliminates future liability for the state of North Carolina. He asked Judy Bullock of the Attorney General's office why the liability is eliminated. Ms. Bullock replied that the proposal by the Working Group of the onsite detoxification of these materials would end the liability of the state of North Carolina. However, if the materials are moved to Utah, the liability goes with it. Since North Carolina does not have any ability to determine on a long-term basis what the environmental compliance would be of that landfill in Utah, in effect what you are doing when the commitment is made to send this material to Utah is you are agreeing to extend the state of North Carolina's potential liability to whatever happens long term with that landfill in Utah. If they undergo problems and determine there is contamination at that landfill, the state of North Carolina could become a responsible party in that landfill. Representative Hunter stated that even after detoxification or shipping out, how about the health of children between the time it was dumped in Warren County and later. Does the state have liability for the people in Warren County for having to live around this site? He expressed his concern that no one had done any health studies.

Dr. Hirschhorn noted that he did not write the document, but it refers to future liability. If the citizens of North Carolina complain and decide to sue the state, they would be restricted by the NC Tort Claims Act which would indicate there had been negligence on the part of the state employees who were involved with regulations of the

landfill, which under the Tort Claims Act would be \$150,000 per claimant. He noted that he is not aware of any law suits in that regard. That is one form of liability that is already out there and no matter which proposal you choose, that potential liability will not change. He expressed his concern about the Laidlaw proposal which would involve taking this material to Utah extends liability to the state of North Carolina for whatever happens to that site. Senator Martin noted that if the material stays in Warren County and is contracted to take the PCBs out using the technology which has been explained, you previously told the committee that it would end the state's liability and now you say that it will not. He asked if it stays and there is some semblance of PCBs left after the contractor moves out, is the state still liable? Mr. Hirschhorn stated that in his opinion under the principals of environmental law that if there continues to be PCBs in that landfill, then the State will continue to have some exposure to liability as the owner of that landfill.

Representative Owen expressed appreciation to the people of Warren County and noted that living there is somewhat different than living somewhere else. I want to be sure that we are doing the right thing and the least cost to the taxpayers. If you have these chlorine atoms and molecules, what happens to them? Where do they go and how are they exposed?

Discussion continued about the liability, danger, and health risks of PCBs. Senator Martin stated that this committee probably will not make the decision on the proposal, but the committee will make recommendations to the officials of North Carolina.

There being no further business, the meeting was adjourned at 10:25 a.m.

Respectfully submitted,



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Senator R. L. Martin, Chairman



\_\_\_\_\_  
Jo Hinton, Clerk

# VISITOR REGISTRATION SHEET

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APPROPRIATIONS SUBCOMMITTEE ON HUMAN RESOURCES JUNE 3, 1998

VISITORS: PLEASE SIGN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY
1. <u>Mike Kelly</u>	<u>DWM / DENR</u>
2. <u>Joel Hirschhorn</u>	<u>DENR consultant</u>
3. <u>Patrick Barnes</u>	<u>DENR / Working Group Advisor</u>
4. <u>Steve Detwiler</u>	<u>ETG Environmental Inc.</u>
5. <u>Pat Williamson</u>	<u>DWM / DENR</u>
6. <u>Becky Street</u>	<u>PPAB</u>
7. <u>FRED THYLOR</u>	<u>WRAL-TV</u>
8. <u>Shirley Starn</u>	<u>ENR</u>
9. <u>Jane Smith</u>	<u>DENR</u>
10. <u>Judy Bullock</u>	<u>AG representing DENR</u>
11. <u>Rob Gelblum</u>	<u>AG representing DENR</u>
22. <u>Gwran Markham</u>	<u>EGHS</u>
23. <u>C. Parker</u>	<u>Bone &amp; Assoc.</u>
24. <u>Mike Calhoun</u>	<u>Self-Help</u>
25. <u>BILL JETER</u>	<u>DENR DIV. ENV. HEALTH</u>
26. <u>John McMillan</u>	<u>Manning, Felt &amp; Skinner</u>
27. <u>Wendy Capish</u>	<u>Triangle Environmental</u>
28. <u>William Wong</u>	<u>Intern</u>
29. <u>David Harkins</u>	<u>State Planning</u>
30. <u>Richard Ferguson</u>	<u>D.O.C.</u>
31. <u>Mary Hoover</u>	<u>NCSU</u>
<u>John Ferruccio</u>	<u>Warren County Citizens</u>

# VISITOR REGISTRATION SHEET

APPROPRIATIONS SUBCOMMITTEE ON HUMAN RESOURCES <sup>9</sup> JUNE 3, 1998

VISITORS: PLEASE SIGN BELOW AND RETURN TO COMMITTEE CLERK

NAME	FIRM OR AGENCY
1. <u>Spencer Watson</u>	<u>OSBM</u>
2. <u>JW Reel</u>	<u>"</u>
3. <u>Johnny Gray</u>	<u>"</u>
4. <u>Adeline Bunnell</u>	<u>Warren Co.</u>
5. <u>Phaedra Pezzullo</u>	<u>UNC-CH re: Warren Co.</u>
6. <u>Ive McCreas</u>	<u>N.C. Septic Tanks &amp; Env. Professor</u>
7. <u>Dorey Lassato</u>	<u>N.C. Septic Tank</u>
8. <u>Don Henry</u>	<u>Special Olympics</u>
9. <u>TERRY HARDSLEY</u>	<u>NCPC</u>
10. <u>Rob Nelson</u>	<u>OSBM</u>
11. <u>Greg Piner</u>	<u>OSBM</u>
22. _____	_____
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31. _____	_____

## **Benefits of the Joint Warren County/State PCB Landfill Working Group Detoxification Treatment Proposal**

- The commitment is to detoxification treatment, which can be achieved through Base Catalyzed Decomposition (BCD). BCD is a treatment technology that involves heating the contaminated soil to a temperature of less than 1000°F and combining it with sodium bicarbonate (household baking soda) to break down the PCBs into harmless materials. The US EPA developed this treatment technology with federal dollars. The North Carolina General Assembly appropriated \$1 million to assess the PCB Landfill and identify the detoxification treatment technology -- BCD was chosen.
- The commitment is to a solution that poses the least health risk to the community. BCD presents less risk to public health. It can be done on-site and does not involve transportation to another location. BCD presents no unsafe air emissions.
- This \$24 million proposal represents a conservatively structured budget under a worse-case scenario to achieve complete and permanent detoxification treatment. It eliminates future liability for the State of North Carolina.
- This entire process is based upon community acceptance. The technology selection process was conducted with the full participation of Warren County citizens.
  - 1982 - Governor Hunt's commitment, in a letter to the citizens of Warren County, to detoxification treatment
  - 1983 - North Carolina General Assembly passed a bill supporting detoxification treatment
  - 1993 - Former DENR Secretary Jonathan Howes wrote a letter supporting detoxification treatment on-site
  - 1996 - North Carolina General Assembly appropriated \$1 million to identify detoxification treatment technology for the PCB Landfill
  - 1998 - Governor Hunt included \$15 million in his 1998-99 budget for the BCD treatment technology for the PCB Landfill
  - 1998 - Senator Frank Balance introduced a bill appropriating \$24 million for detoxification of the PCB Landfill using the BCD treatment technology.