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STATE DEFERRAL RI WORKPLAN  
FACT SHEET

**Southern Wood Piedmont -  
Wilmington Site**

Greenfield Street  
Wilmington, New Hanover County, NC

AUGUST 2000

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### INTRODUCTION

This fact sheet describes the proposed Remedial Investigation (RI) Workplan for the Southern Wood Piedmont Site in Wilmington, New Hanover County, N.C. The document includes: site description and history; a summary of previous investigations; proposed RI work activities; and a glossary of terms and acronyms commonly used in the Superfund program. Words highlighted in bold print within this fact sheet are defined in the glossary.

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The NC Superfund Section is conducting a public availability session on August 9, 2000, from 3:00 to 7:00 p.m., at the New Hanover County Public Library, 210 Chestnut St., Wilmington, NC. This informal session is intended to provide information to help the public become more informed and involved in the future disposition and remediation of the site.

### SITE DESCRIPTION

The 96-acre Southern Wood Piedmont (SWP) Site is located at the west end of Greenfield Street on the Cape Fear River waterfront, in Wilmington, New Hanover County, NC (Figure 1). The NC State Ports Authority owns 93 acres of the site. The remaining three acres, located in the site's southeast corner, are privately owned.

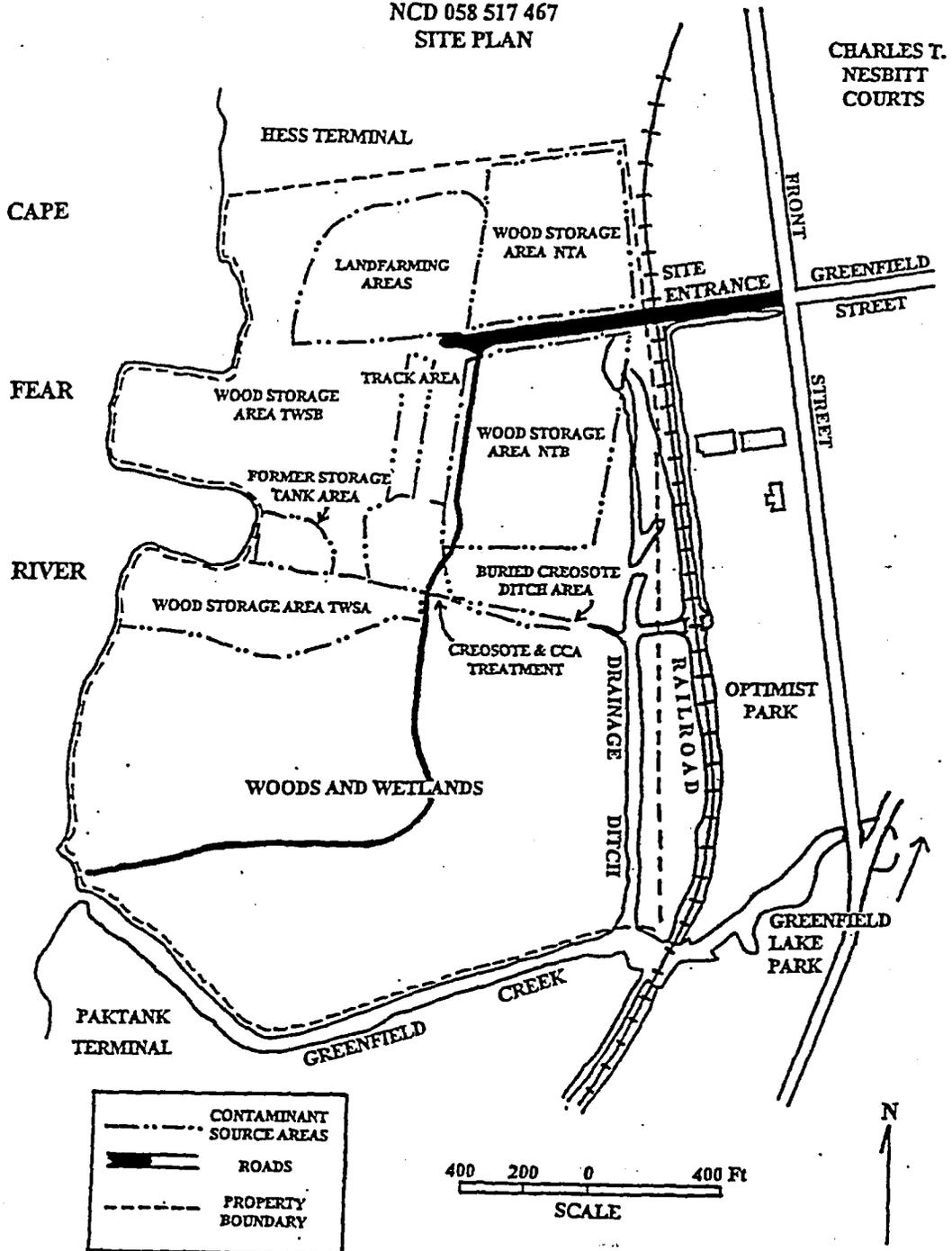
The site includes these areas, plus any additional areas contaminated by hazardous materials as a result of historical site activity.

The site's northern portion is open lawn, while the southern half is wooded. The property drains south through a drainage ditch system to Greenfield Creek, then west to the Cape Fear River tidal estuary (Figure 2). Portions of the site flood during high tides or river floods. The site is currently vacant, however, the NC Ports Authority proposes to develop the site to expand its existing storage facilities.

The surrounding neighborhood is mixed industrial, commercial and residential. Petroleum storage terminals border the site to the north and south, while a park and commercial facilities on Front Street border the site to the east. The Nesbitt Courts apartments are located east of the site on 2nd Street.



FIGURE 2:  
 SOUTHERN WOOD PIEDMONT CO.  
 WILMINGTON, NC  
 NCD 058 517 467  
 SITE PLAN



## SITE HISTORY

The site was used for wood treating beginning in the mid-1930s. Southern Wood Piedmont Company (formerly Southern Wood Preserving Company) operated the facility from 1964 until it closed in 1983. **Creosote, chromated copper arsenate (CCA) and pentachlorophenol (PCP)** were historically used for wood treating on site, and diesel fuel was also stored and used onsite. Wood treating occurred within the north-central part of the site, treated lumber was stored outdoors in the northern half of the site. For several years, creosote waste accumulated in an east-west drainage ditch located south-southeast of the production area (Figure 2).

In 1985, under an **Administrative Order on Consent** with the State, Southern Wood Piedmont (SWP) excavated surface and subsurface soils at the site's creosote ditch (a.k.a., Covered Ditch) and former production areas. Soils heavily contaminated with arsenic were disposed at a **hazardous waste landfill** in SC. Soils stained with creosote were **landfarmed** in the northern part of the site.

## PREVIOUS INVESTIGATIONS

During the 1980s and early 1990s, the site's landfarming areas were sampled to monitor **biodegradation** of creosote in the landfarmed soil. Results indicated partial breakdown of creosote constituents. Sampling results did not indicate that the landfarming operation had contaminated local groundwater.

During the early-to-mid 1990s soil sampling by SWP revealed creosote contamination in soils throughout the site's former production and storage areas. **Dioxin** and furan contamination was detected in soils from the landfarm areas, but no other samples were tested for dioxin.

In 1992 and 1993, SWP installed and sampled **groundwater monitoring wells** at the site. Sampling revealed creosote contamination in groundwater in the **sandy water-table aquifer** directly beneath the site. In addition, explorations beneath the former creosote ditch and production areas revealed that liquid creosote had accumulated on top of a peat layer beneath the shallow sand, about 15 feet underground. Groundwater in a deeper sandy aquifer, beneath the peat, also contained dissolved creosote.

In 1994 and 1996, sediment sampling revealed creosote contamination in the site's drainage ditch and downstream in Greenfield Creek. Sediment contamination was not detected in the Cape Fear River below the mouth of the creek, however, creosote was detected in sediment at the site's western waterfront.

In 1995, the North Carolina Department of Environment and Natural Resources (NCDENR) Superfund Section completed a **Site Inspection Prioritization (SIP)** report, summarizing site history and the results of prior investigations. The SIP determined that contaminant migration in Greenfield Creek extended beyond mapped wetland frontage, and that the creek was used for fishing. The SIP determined the site to be a candidate for listing on the federal **National Priorities List (NPL)** of Superfund sites.

The US Environmental Protection Agency Region IV (EPA) completed an **Expanded Site Inspection (ESI)** in July 1997. The ESI confirmed soil, groundwater and creek sediment contamination at the site. ESI sampling also detected dioxins in surface soils from the site's former production and wood storage areas (Figure 2). Fish samples from Greenfield Creek were tested for site contaminants (except for dioxin/furan), but results were inconclusive.



## REMEDIAL INVESTIGATION WORKPLAN DEVELOPMENT

During June 1999, following approval and signing of the State Deferral AOC, SWP submitted a draft Remedial Investigation Report to the NC Superfund Section for review and comment. This document summarized environmental investigations and site-specific data generated by SWP to date.

The NC Superfund Section reviewed the draft report, identifying additional sampling and data requirements for completion of the RI. These included the need for more complete characterization of the site's groundwater contamination, as required by the State of NC Administrative Code, Title 15A, Subchapter 2L. The Superfund Section noted that the extent of free-product creosote contamination beneath the site had not been adequately characterized for potential recovery.

Additional comments by the NC Superfund Section addressed location and/or spacing of RI soil and sediment samples, the need for additional groundwater data from the petroleum facilities north and south of the site, and the collection of fish tissue samples during the RI. The NC Division of Water Quality also reviewed portions of the submittal, commenting on fish tissue sampling methodology, ecotoxicity study of site sediment contaminants, and ecological risk

assessment to be completed during the RI. Southern Wood Piedmont Company responded to the initial comments during March and April 2000 and, after additional communications with NCDENR, completed its Draft 2.0 Supplemental Remedial Investigation Workplan on May 23, 2000. The supplemental workplan addressed comments made by DENR.

## RI ACTIVITIES

The following is a list of Remedial Investigation Activities proposed by SWP, designed to address additional data requirements identified by the NC Superfund Section. These RI objectives are intended to delineate further the extent of contamination at the site, and its likelihood of having an impact on human health or the environment. The RI results will help determine the future course of site remediation. RI activities are described in detail in Section 3.2 of the Supplemental RI Workplan.

**DNAPL Characterization:** The extent and physical nature of dense, non-aqueous phase liquid (DNAPL) creosote beneath the site requires further investigation. Areas of suspected accumulation in the subsurface will be investigated by collecting direct push core samples of subsurface soil, to determine the presence or absence of creosote and its potential mobility for future removal from the subsurface. Approximately 36 locations will be cored to delineate the spill area. In addition, 2 additional

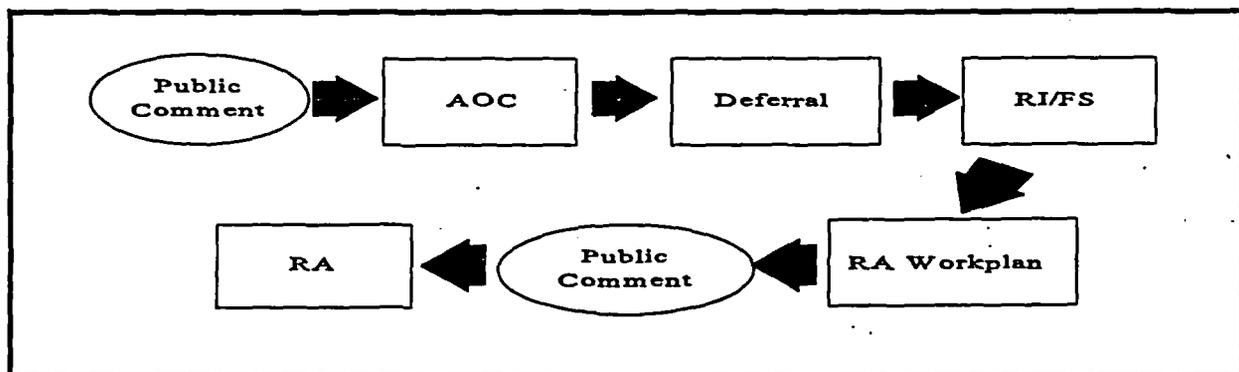


Figure 4. Deferral Process

shallow sand monitoring wells and one deep sand monitoring well will be installed near the thickest known creosote accumulations to determine the present thickness and pumpability of the creosote product. The deeper well will be cased into the intervening peat layer to reduce the likelihood of cross-contamination from the upper to the lower aquifer.

**Groundwater Sampling:** The site's existing monitoring wells will be resampled to characterize current groundwater conditions in the shallow sand, deep sand, and bedrock aquifers at the site. In addition, the Amerada Hess and Paktank petroleum companies will be contacted to determine whether groundwater sample data are available from monitoring wells at their facilities, north and south of the site.

Groundwater samples will be collected by SWP in accordance with the USEPA's Environmental Investigations Standard Operating Procedure Quality Assurance Manual, and will be analyzed at a North Carolina Certified Laboratory.

Limited groundwater sampling for dioxin/furan contamination will be conducted in the site's former covered ditch and production areas and near Greenfield Creek (Fig. 2), plus an off-site background location. The monitoring wells to be sampled are closest to soil samples where dioxin/furan contamination has been detected. Limited Subsurface Soil Sampling for dioxins/furans will be conducted at these respective soil locations as well.

**Groundwater level measurements** will be completed at the site's monitoring wells to characterize the present groundwater flow pathways within and between the site's semi-connected aquifers. If possible, monitoring will also occur at the adjacent petroleum terminals. Installation of staff gauges in

adjacent surface water bodies will help determine the relationship between groundwater and surface water flow. All of the above measurements will be repeated at intervals throughout the tidal cycle.

**Sediment Sampling:** Selected locations on the main drainage ditch and Greenfield Creek will be sampled for dioxins/furans, to determine whether these contaminants exist at elevated levels in the creek system. Approximately 15 supplemental sediment samples will be collected to tighten sample resolution to approximately 200-foot intervals, and to delineate "hot" contaminated zones along the waterways. Sediment will also be sampled at an adjacent wetland area and at an off-site background location.

To support an assessment of the ecotoxicity of contaminated sediments physico-chemical parameters of the sediment samples will be tested, including particle size, total organic carbon, salinity, pH and ammonia. In addition the parameter Acid Volatile Sulfide (AVS) of sediment samples will be tested to determine the likelihood of sediment contaminants actually passing into the aquatic food chain.

**Fish Tissue Sampling:** To determine whether site contaminants have contaminated game and other food fish in the drainage ditch and Greenfield Creek, fish tissue sampling will be conducted during the RI. Fish will be caught approximately 6 locations, including 3 on Greenfield Creek, and reference samples from Greenfield Lake, and two nearby, separate creeks to establish ambient contaminant levels.

Fish sampling, where possible, will represent both recreational fish caught (and eaten) by humans, and natural prey of fish eating birds and animals. Fish will either be caught by tackle and/or net, or stunned by localized electroshock. Sampling will be overseen by Division of Water Quality Environmental Services Branch (ESB) personnel.

## RISK ASSESSMENT

Analytical data generated by the Remedial Investigation will be used to support a Human Health and Ecological Risk Assessment of the SWP site, to characterize the risk to human health and to the environment posed by contaminants existing at the site. In particular, the assessment will determine the risks posed to the Greenfield Creek ecosystem by sediment contamination in the creek, and the risk posed to humans by consumption of fish living in the creek. The Risk Assessment will be used to determine appropriate action during subsequent phases of site remediation.

## COMMUNITY INVOLVEMENT

Community officials, civic leaders, residents and other interested parties are encouraged to learn more about the Southern Wood Piedmont site, the Federal Superfund program and the State Deferral program. The state also seeks community input on the site, the draft AOC and the decision to defer the site to the state rather than proceed with the federal Superfund process.

Both the City of Wilmington and the State Ports Authority have expressed their interest in expediting cleanup and redevelopment of the site. Currently, the State Ports Authority plans to redevelop the site to expand their warehouse facilities.

The NCDENR, Superfund Section has established an **Information Repository**, which will be maintained at:

The New Hanover County  
Public Library, Reference Desk  
210 Chestnut Street  
Wilmington, North Carolina 28401  
(910) 341-4390

Documents currently available at the repository are listed below. All site documents generated after the deferral will be added to the repository. A list of documents held by the repository will be updated and available at the Southern Pines Public Library Reference Desk.

All documents in the local Information Repository, as well as all historical state file information about the SWP-Wilmington site, are available for public review and photocopying at the office of the NC Superfund Section in Raleigh, NC. Individuals wishing to review this files should contact:

Scott Ross, Public Information Assistant  
Superfund Section  
Division of Waste Management  
NC DENR  
401 Oberlin Road, Suite 150  
Raleigh, NC 27605  
Telephone: (919) 733-2801, ext. 328

The State will conduct an informal public Information Session on August 9, 2000 from 3 to 7 p.m. The meeting will be held in the New Hanover County Public Library's large meeting room, 210 Chestnut Street, Wilmington, N.C.

day public comment period on the draft AOC and the 30-day public comment period on the public's support of the deferral. Verbal and written comments will be accepted at the meeting and written comments will be accepted. The purpose of the session will be to discuss the RI Workplan and to identify and address any public questions or concerns about the work plan. The state will solicit comments and questions from the public. The meeting will begin the 30-day comment period ending September 8, 2000. All Written comments must be postmarked no later than that date.

- State Contact and Project Manager

**Questions and comments about the site, the Deferral process or Site Remediation should be directed to:**

Stuart Parker, Hydrogeologist  
 NC Division of Waste Management  
 Superfund Section  
 401 Oberlin Road, Suite 150  
 Raleigh, NC 27605  
 Telephone: (919) 733-2801, ext. 277  
 Fax: (919) 733-4811  
 Email: [parkersf@wastenot.enr.state.nc.us](mailto:parkersf@wastenot.enr.state.nc.us)

- US EPA Contact

Questions about the Federal Superfund program should be directed to:

Luis Flores  
 Remedial Project Manager  
 NC Site Management Section  
 US EPA Region IV  
 Waste Management Division  
 61 Forsyth Street S.W., 11th Floor  
 Atlanta, GA 30303-3104  
 Telephone: (404) 562-8807, or  
 (800) 435-9233

**GLOSSARY:**

**Administrative Order on Consent (AOC)** - A voluntary agreement between the state and potentially responsible parties that outlines steps for completing remedial actions at contaminated sites.

**Aquifer** - A subsurface geologic formation which contains and transmits significant amounts of underground water.

**Biodegrade** - To break down into simpler chemical constituents, through biological processes.

**Chromated copper arsenate (CCA)** - A

wood preserving compound consisting of copper, chromium, oxygen and arsenic, applied under pressure to impregnate and preserve lumber.

**Creosote** - A tarry, organic wood preserving compound, derived from distillation of coal tars and most commonly used to protect manufactured wood products such as telephone poles and railroad ties.

**Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)** - A federal law passed in 1980 granting the EPA the authority to investigate and clean up uncontrolled and/or abandoned hazardous waste sites, using money obtained from the Superfund Trust Fund and/or legal action against parties responsible for the pollution.

**Dioxins** - A class of organic chemicals derived from chlorination of phenols; a transformation product of PCBs, furans, and pentachlorophenol; considered highly toxic.

**Expanded Site Inspection** - The final stage of federally-funded site assessment, undertaken to identify potential NPL sites, using stringent sampling protocol and documentation

**Groundwater** Water which exists beneath the earth's surface and migrates through openings in soil and bedrock; often a principal drinking water source.

**Groundwater Monitoring Well** - A test well, generally of small diameter and specified depth, installed into an aquifer to measure and sample groundwater.

**Hazardous Waste Landfill** - An engineered, permitted facility, constructed to contain and secure hazardous waste chemicals, or material containing such chemicals, against human exposure or migration to groundwater or the environment.

**Information Repository** - A designated storage place, typically in a library or courthouse, in which the public can access file information pertaining to site investigation and cleanup.

**Landfarming** - A method of treating organic soil contaminants, in which affected soils are applied to the land surface, fertilized, and tilled to encourage natural biodegradation of contaminants by existing soil organisms.

**Memorandum of Agreement** - An agreement between EPA and the state granting authority to the state to conduct environmental investigation, and compel and oversee environmental remedial actions.

**National Priorities List (NPL)** - The EPA's list of top-priority hazardous waste sites eligible for Federally funded investigation and cleanup under the Superfund Program.

**Pentachlorophenol** - An organic wood preserving compound composed of (phenolic) carbon, chlorine and hydrogen, generally applied using diesel fuel as a carrier.

**Polynuclear Aromatic Compounds** - Large organic molecules (composed of 3 or more interconnected benzene ring structures) common in creosote. Several of these compounds are known or suspected to cause cancer.

**Potentially Responsible Parties** - A person or entity identified as a past or current owner or operator of a site where hazardous substances are known to have been released.

**Record of Decision** - Documentation of the selection of a preferred remedy for cleanup of a hazardous waste site, based on cost and effectiveness.

**Remedial Action** - The physical process of cleaning up a hazardous waste site.

**Remedial Design** - The design of the proposed remediation system used to clean up contamination which usually includes a treatability study.

**Remedial Investigation/Feasibility Study** - Post-assessment investigation of a hazardous waste site to determine the full nature and extent of contamination, the hazard posed to the human population and the environment, and the evaluation of various cleanup options for the site.

**Site Assessment Process** - The process of screening, investigating, and prioritizing hazardous waste sites as candidates for inclusion on the EPA's National Priorities List.

**Site Inspection Prioritization (SIP)** - A Federally funded, pre-remedial environmental site assessment, undertaken to evaluate potential NPL-candidate sites by updating information and/or analytical data from previous site assessments, for use in the Hazard Ranking System.

**State Deferral** - An agreement under which EPA defers consideration of sites for NPL listing while states compel and oversee remedial actions conducted and funded by potentially responsible parties.

**Superfund Amendment and Reauthorization Act of 1986 (SARA)** - A federal law passed in 1986, reauthorizing the CERCLA process with new provisions, and modifications to existing provisions

**Tidal Estuary** - Portion of a coastal river influenced by ocean tides and containing mixed fresh and salt water. Often a major breeding place for fresh and salt water organisms.

**Water Table Aquifer** - A water-bearing geologic unit, composed of soil and/or rock, where groundwater exists in equilibrium with atmospheric pressure and is not confined by any overlying stratum of less permeable material.

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## Brownfields Property Reuse Act

### § 130A-310.30. Short title.

This Part may be cited as The Brownfields Property Reuse Act of 1997. (1997-357, s. 2.)

### § 130A-310.31. Definitions.

(a) Unless a different meaning is required by the context or unless a different meaning is set out in subsection (b) of this section, the definitions in G.S. 130A-2 and G.S. 130A-310 apply throughout this Part.

(b) Unless a different meaning is required by the context:

1. "Affiliate" has the same meaning as in 17 Code of Federal Regulations § 240.12b-2 (1 April 1996 Edition)
  - (2) "Brownfields agreement" means an agreement between the Department and a prospective developer that meets the requirements of G.S. 130A-310.32.
  - (3) "Brownfields property" or "brownfields site" means abandoned, idled, or underused property at which expansion or redevelopment is hindered by actual environmental contamination or the possibility of environmental contamination and that is or may be subject to remediation under any State remedial program other than Part 2A of Article 21A of Chapter 143 of the General Statutes or that is or may be subject to remediation under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. § 9601 et seq.).
  - (4) "Contaminant" means a regulated substance released into the environment.
  - (5) "Unrestricted use standards" when used in connection with "cleanup", "remediated", or "remediation" means that cleanup or remediation of contamination complies with generally applicable standards, guidance, or established methods governing the contaminants that are established by statute or adopted, published, or implemented by the Environmental Management Commission, the Commission, or the Department instead of the risk-based standards established by the Commission pursuant to this Part.
  - (6) "Environmental contamination" means contaminants at the property requiring remediation and that are to be remediated under the brownfields agreement including, at a minimum, hazardous waste, as defined in G.S. 130A-290; a hazardous substance, as defined in G.S. 130A-310; a hazardous substance, as defined in G.S. 143-215.77; or oil, as defined in G.S. 143-215.77.
  - (7) "Local government" means a town, city, or county.
  - (8) "Parent" has the same meaning as in 17 Code of Federal Regulations § 240.12b-2 (1 April 1996 Edition).
  - (9) "Potentially responsible party" means a person who is or may be liable for remediation under a remedial program.

(10) "Prospective developer" means any person who desires to either buy or sell a brownfields property for the purpose of developing or redeveloping that brownfields property and who did not cause or contribute to the contamination at the brownfields property.

(11) "Regulated substance" means a hazardous waste, as defined in G.S. 130A-290; a hazardous substance, as defined in G.S. 143-215.77A; oil, as defined in G.S. 143-215.77; or other substance regulated under any remedial program implemented by the Department other than Part 2A of Article 21A of Chapter 143 of the General Statutes.

(12) "Remedial program" means a program implemented by the Department for the remediation of any contaminant, including the Inactive Hazardous Sites Response Act of 1987 under Part 3 of this Article, the Superfund Program under Part 4 of this Article, and the Oil Pollution and Hazardous Substances Control Act of 1978 under Part 2 of Article 21A of Chapter 143 of the General Statutes.

(13) "Remediation" means action to clean up, mitigate, correct, abate, minimize, eliminate, control, or prevent the spreading, migration, leaking, leaching, volatilization, spilling, transport, or further release of a contaminant into the environment in order to protect public health or the environment.

(14) "Subsidiary" has the same meaning as in 17 Code of Federal Regulations § 240.12b-2 (1 April 1996 Edition). (1997-357, s. 2; 1997-392, ss. 4.2-4.4; 2001-384, s. 11.)

#### **§ 130A-310.32. Brownfields agreement.**

(a) The Department may, in its discretion, enter into a brownfields agreement with a prospective developer who satisfies the requirements of this section. A prospective developer shall provide the Department with any information necessary to demonstrate that:

(1) The prospective developer, and any parent, subsidiary, or other affiliate of the prospective developer has substantially complied with:

a. The terms of any brownfields agreement or similar agreement to which the prospective developer or any parent, subsidiary, or other affiliate of the prospective developer has been a party.

b. The requirements applicable to any remediation in which the applicant has previously engaged.

c. Federal and state laws, regulations, and rules for the protection of the environment.

(2) As a result of the implementation of the brownfields agreement, the brownfields property will be suitable for the uses specified in the agreement while fully protecting public health and the environment instead of being remediated to unrestricted use standards.

(3) There is a public benefit commensurate with the liability protection provided under this Part.

(4) The prospective developer has or can obtain the financial, managerial, and technical means to fully

implement the brownfields agreement and assure the safe use of the brownfields property.

(5) The prospective developer has complied with or will comply with all applicable procedural requirements.

(b) In negotiating a brownfields agreement, parties may rely on land-use restrictions that will be included in a Notice of Brownfields Property required under G.S. 130A-310.35. A brownfields agreement may provide for remediation standards that are based on those land-use restrictions.

(c) A brownfields agreement shall contain a description of the brownfields property that would be sufficient as a description of the property in an instrument of conveyance and, as applicable, a statement of:

(1) Any remediation to be conducted on the property, including:

- a. A description of specific areas where remediation is to be conducted.
- b. The remediation method or methods to be employed.
- c. The resources that the prospective developer will make available.
- d. A schedule of remediation activities.
- e. Applicable remediation standards.
- f. A schedule and the method or methods for evaluating the remediation.

(2) Any land-use restrictions that will apply to the brownfields property.

(3) The desired results of any remediation or land-use restrictions with respect to the brownfields property.

(4) The guidelines, including parameters, principles, and policies within which the desired results are to be accomplished.

(5) The consequences of achieving or not achieving the desired results.

(d) Any failure of the prospective developer or the prospective developer's agents and employees to comply with the brownfields agreement constitutes a violation of this Part by the prospective developer. (1997-357, s. 2; 2001-384, s. 11.)

### **§ 130A-310.33. Liability protection.**

(a) A prospective developer who enters into a brownfields agreement with the Department and who is complying with the brownfields agreement shall not be held liable for remediation of areas of contaminants identified in the brownfields agreement except as specified in the brownfields agreement, so long as the activities conducted on the brownfields property by or under the control or direction of the prospective developer do not increase the risk of harm to public health or the environment and the prospective developer is not required to undertake additional remediation to unrestricted use standards pursuant to subsection (c) of this section. The liability protection provided under this Part applies to all of the following persons to the same extent as to a prospective developer, so long as these persons are not otherwise potentially responsible parties or parents, subsidiaries, or affiliates of potentially responsible parties and the person is not required to undertake additional remediation to unrestricted use standards pursuant to

subsection (c) of this section:

(1) Any person under the direction or control of the prospective developer who directs or contracts for remediation or redevelopment of the brownfields property.

(2) Any future owner of the brownfields property.

(3) A person who develops or occupies the brownfields property.

(4) A successor or assign of any person to whom the liability protection provided under this Part applies.

(5) Any lender or fiduciary that provides financing for remediation or redevelopment of the brownfields property.

(b) A person who conducts an environmental assessment or transaction screen on a brownfields property and who is not otherwise a potentially responsible party is not a potentially responsible party as a result of conducting the environmental assessment or transaction screen unless that person increases the risk of harm to public health or the environment by failing to exercise due diligence and reasonable care in performing the environmental assessment or transaction screen.

(c) If a land-use restriction set out in the Notice of Brownfields Property required under G.S. 130A-310.35 is violated, the owner of the brownfields property at the time the land-use restriction is violated, the owner's successors and assigns, and the owner's agents who direct or contract for alteration of the brownfields property in violation of a land-use restriction shall be liable for remediation to unrestricted-use standards. A prospective developer who completes the remediation or redevelopment required under a brownfields agreement or other person who receives liability protection under this Part shall not be required to undertake additional remediation at the brownfields property unless any of the following apply:

(1) The prospective developer knowingly or recklessly provides false information that forms a basis for the brownfields agreement or that is offered to demonstrate compliance with the brownfields agreement or fails to disclose relevant information about contamination at the brownfields property.

(2) New information indicates the existence of previously unreported contaminants or an area of previously unreported contamination on or associated with the brownfields property that has not been remediated to unrestricted use standards, unless the brownfields agreement is amended to include any previously unreported contaminants and any additional areas of contamination. If the brownfields agreement sets maximum concentrations for contaminants, and new information indicates the existence of previously unreported areas of these contaminants, further remediation shall be required only if the areas of previously unreported contaminants raise the risk of the contamination to public health or the environment to a level less protective of public health and the environment than that required by the brownfields agreement.

(3) The level of risk to public health or the environment from contaminants is unacceptable at or in the vicinity of the brownfields property due to changes in exposure conditions, including (i) a change in land use that increases the probability of exposure to contaminants or in the vicinity of the brownfields property or (ii) the failure of remediation to mitigate risks to the extent required to make the brownfields property fully protective of public health and the environment as planned in the brownfields agreement.

(4) The Department obtains new information about a contaminant associated with

the brownfields property or exposures at or around the brownfields property that raises the risk to public health or the environment associated with the brownfields property beyond an acceptable range and in a manner or to a degree not anticipated in the brownfields agreement. Any person whose use, including any change in use, of the brownfields property causes an unacceptable risk to public health or the environment may be required by the Department to undertake additional remediation measures under the provisions of this Part.

(5) A prospective developer fails to file a timely and proper Notice of Brownfields Development under this Part. (1997-357, s. 2; 2001-384, s. 11.)

#### **§ 130A-310.34. Public notice and community involvement.**

(a) A prospective developer who desires to enter into a brownfields agreement shall notify the public and the community in which the brownfields property is located of planned remediation and redevelopment activities. The prospective developer shall submit a Notice of Intent to Redevelop a Brownfields Property and a summary of the Notice of Intent to the Department. The Notice of Intent shall provide, to the extent known, a legal description of the location of the brownfields property, a map showing the location of the brownfields property, a description of the contaminants involved and their concentrations in the media of the brownfields property, a description of the intended future use of the brownfields property, any proposed investigation and remediation, and a proposed Notice of Brownfields Property prepared in accordance with G.S. 130A-310.35. Both the Notice of Intent and the summary of the Notice of Intent shall state the time period and means for submitting written comment and for requesting a public meeting on the proposed brownfields agreement. The summary of the Notice of Intent shall include a statement as to the public availability of the full Notice of Intent. After approval of the Notice of Intent and summary of the Notice of Intent by the Department, the prospective developer shall provide a copy of the Notice of Intent to all local governments having jurisdiction over the brownfields property. The prospective developer shall publish the summary of the Notice of Intent in a newspaper of general circulation serving the area in which the brownfields property is located and shall file a copy of the summary of the Notice of Intent with the Codifier of Rules, who shall publish the summary of the Notice of Intent in the North Carolina Register. The prospective developer shall also conspicuously post a copy of the summary of the Notice of Intent at the brownfields site.

(b) Publication of the approved summary of the Notice of Intent in the North Carolina Register and publication in a newspaper of general circulation shall begin a public comment period of at least 60 days from the later date of publication. During the public comment period, members of the public, residents of the community in which the brownfields property is located, and local governments having jurisdiction over the brownfields property may submit comment on the proposed brownfields agreement, including methods and degree of remediation, future land uses, and impact on local employment.

(c) Any person who desires a public meeting on a proposed brownfields agreement shall submit a written request for a public meeting to the Department within 30 days after the public comment period begins. The Department shall consider all requests for a public meeting and shall hold a public meeting if the Department determines that there is significant public interest in the proposed brownfields agreement. If the Department decides to hold a public meeting, the Department shall, at least 30 days prior to the public meeting, mail written notice of the public meeting to all persons who requested the public meeting and to any other person who had previously requested notice. The Department shall also direct the prospective developer to publish, at least 30 days prior to the date of the public meeting, a notice of the public meeting at least one time in a newspaper having general circulation in such county where the brownfields property is located. In any county in which there is more than one newspaper having general circulation, the Department shall direct the prospective developer to publish a copy of the notice in as many newspapers having general circulation in the county as the Department in its discretion determines to be necessary to assure that the notice is generally available throughout the county. The Department shall prescribe the form and content of the notice to be published.

The Department shall prescribe the procedures to be followed in the public meeting. The Department shall take detailed minutes of the meeting. The minutes shall include any written comments, exhibits, or documents presented at the meeting.

(d) Prior to entering into a brownfields agreement, the Department shall take into account the comment received during the comment period and at the public meeting if the Department holds a public meeting. The Department shall incorporate into the brownfields agreement provisions that reflect comment received during the comment period and at the public meeting to the extent practical. The Department shall give particular consideration to written comment that is supported by valid scientific and technical information and analysis and to written comment from the units of local government that have taxing jurisdiction over the brownfields property. (1997-357, s. 2; 2000-158, s. 2.)

**§ 130A-310.35. Notice of Brownfields Property; land-use restrictions in deed.**

(a) In order to reduce or eliminate the danger to public health or the environment posed by a brownfields property being addressed under this Part, a prospective developer who desires to enter into a brownfields agreement with the Department shall submit to the Department a proposed Notice of Brownfields Property. A Notice of Brownfields Property shall be entitled "Notice of Brownfields Property", shall include a survey plat of areas designated by the Department that has been prepared and certified by a professional land surveyor and that meets the requirements of G.S. 47-30, shall include a legal description of the brownfields property that would be sufficient as a description of the property in an instrument of conveyance, and shall identify all of the following:

(1) The location and dimensions of the areas of potential environmental concern with respect to permanently surveyed benchmarks.

(2) The type, location, and quantity of regulated substances and contaminants known to exist on the brownfields property.

(3) Any restrictions on the current or future use of the brownfields property or, with the owner's permission, other property that are necessary or useful to maintain the level of protection appropriate for the designated current or future use of the brownfields property and that are designated in the brownfields agreement. These land-use restrictions may apply to activities on, over, or under the land, including, but not limited to, use of groundwater, building, filling, grading, excavating, and mining. Where a brownfields property encompasses more than one parcel or tract of land, a composite map or plat showing all parcels or tracts may be recorded.

(b) After the Department approves and certifies the Notice of Brownfields Property under subsection (a) of this section, a prospective developer who enters into a brownfields agreement with the Department shall file a certified copy of the Notice of Brownfields Property in the register of deeds' office in the county or counties in which the land is located. The prospective developer shall file the Notice of Brownfields Property within 15 days of the prospective developer's receipt of the Department's approval of the notice or the prospective developer's entry into the brownfields agreement, whichever is later.

(c) The register of deeds shall record the certified copy of the notice and index it in the grantor index under the names of the owners of the land, and, if different, also under the name of the prospective developer conducting the redevelopment of the brownfields property.

(d) When a brownfields property is sold, leased, conveyed, or transferred, the deed or other instrument of transfer shall contain in the description section, in no smaller type than that used in the body of the deed or instrument, a statement that the brownfields property has been classified and, if appropriate, cleaned up as a brownfields property under this Part.

(e) A Notice of Brownfields Property filed pursuant to this section may, at the request of the owner of the land, be cancelled by the Secretary after the hazards have been eliminated. If requested in writing by the owner of the land and if the Secretary concurs with the request, the Secretary shall send to the register of deeds of each county where the notice is recorded a statement that the hazards have been eliminated and request that the notice be cancelled of record. The Secretary's statement shall contain the names of the owners of the land as shown in the notice and reference the plat book and page where the notice is recorded. The register of deeds shall record the Secretary's statement in the deed books and index it on the grantor index in the names of the owners of the land as shown in the Notice of Brownfields Property and on the grantee index in the name "Secretary of Environment and Natural Resources". The register of deeds shall make a marginal entry on the Notice of Brownfields Property showing the date of cancellation and the book and page where the Secretary's statement is recorded, and the register of deeds shall sign the entry. If a marginal entry is impracticable because of the method used to record maps and plats, the register of deeds shall not be required to make a marginal entry.

(f) Any land-use restriction filed pursuant to this section shall be enforced by any owner of the land. Any land-use restriction may also be enforced by the Department through the remedies provided in Part 2 of Article 1 of this Chapter or by means of a civil action. The Department may enforce any land-use restriction without first having exhausted any available administrative remedies. A land-use restriction may also be enforced by any unit of local government having jurisdiction over any part of the brownfields property by means of a civil action without the unit of local government having first exhausted any available administrative remedy. A land-use restriction may also be enforced by any person eligible for liability protection under this Part who will lose liability protection if the land-use restriction is violated. A land-use restriction shall not be declared unenforceable due to lack of privity of estate or contract, due to lack of benefit to particular land, or due to lack of any property interest in particular land. Any person who owns or leases a property subject to a land-use restriction under this section shall abide by the land-use restriction.

(g) This section shall apply in lieu of the provisions of G.S. 130A-310.8 for brownfields properties remediated under this Part. (1997-357, s. 2; 1997-443, s. 11A.119(b).)

#### **§ 130A-310.36. Appeals.**

A decision by the Department as to whether or not to enter into a brownfields agreement including the terms of any brownfields agreement is reviewable under Article 3 of Chapter 150B of the General Statutes. (1997-357, s. 2.)

#### **§ 130A-310.37. Construction of Part.**

(a) This Part is not intended and shall not be construed to:

(1) Affect the ability of local governments to regulate land use under Article 19 of Chapter 160A of the General Statutes and Article 18 of Chapter 153A of the General Statutes. The use of the identified brownfields property and any land-use restrictions in the brownfields agreement shall be consistent with local land-use controls adopted under those statutes.

(2) Amend, modify, repeal, or otherwise alter any provision of any remedial program or other provision of this Chapter, Chapter 143 of the General Statutes, or any other provision of law relating to civil and criminal penalties or enforcement actions and remedies available to the Department, except as may be provided in a brownfields agreement.

(3) Prevent or impede the immediate response of the Department or responsible party to an emergency that involves an imminent or actual release of a regulated substance that threatens public health or the environment.

(4) Relieve a person receiving liability protection under this Part from any liability for contamination later caused by that person on a brownfields property.

(5) Affect the right of any person to seek any relief available against any party to the brownfields agreement who may have liability with respect to the brownfields property, except that this Part does limit the relief available against any party to a brownfields agreement with respect to remediation of the brownfields property to the remediation required under the brownfields agreement.

(6) Affect the right of any person who may have liability with respect to the brownfields property to seek contribution from any other person who may have liability with respect to the brownfields property and who neither received nor has liability protection under this Part.

(7) Prevent the State from enforcing specific numerical remediation standards, monitoring, or compliance requirements specifically required to be enforced by the federal government as a condition to receive program authorization, delegation, primacy, or federal funds.

(8) Create a defense against the imposition of criminal and civil fines or penalties or administrative penalties otherwise authorized by law and imposed as the result of the illegal disposal of waste or for the pollution of the land, air, or waters of this State on a brownfields property.

(9) Relieve a person of any liability for failure to exercise due diligence and reasonable care in performing an environmental assessment or transaction screen.

(b) Notwithstanding the provisions of the Tort Claims Act, G.S. 143-291 through G.S. 143-300.1 or any other provision of law waiving the sovereign immunity of the State of North Carolina, the State, its agencies, officers, employees, and agents shall be absolutely immune from any liability in any proceeding for any injury or claim arising from negotiating, entering, monitoring, or enforcing a brownfields agreement or a Notice of Brownfields Property under this Part or any other action implementing this Part.

(c) The Department shall not enter into a brownfields agreement for a brownfields site that is identified by the United States Environmental Protection Agency as a federal Superfund site pursuant to 40 Code of Federal Regulations, Part 300 (1 July 1996 Edition). (1997-357, s. 2; 1997-392, s. 4.5.)

#### **§ 130A-310.38. Brownfields Property Reuse Act Implementation Account.**

The Brownfields Property Reuse Act Implementation Account is created as a nonreverting interest-bearing account in the Office of the State Treasurer. The Account shall consist of fees and interest collected under G.S. 130A-310.39, moneys appropriated to it by the General Assembly, moneys received from the federal government, moneys contributed by private organizations, and moneys received from any other source. Funds in the Account shall be used by the Department to defray the costs of implementing this Part. The Department may contract with a private entity for any services necessary to implement this Part. (1997-357, s. 2; 1999-360, s. 17.2.)

#### **§ 130A-310.39. Fees.**

(a) The Department shall collect the following fees:

(1) A prospective developer who submits a proposed brownfields agreement for review by the Department shall pay an initial fee of two thousand dollars (\$2,000).

(2) A prospective developer who enters into a brownfields agreement with the Department shall pay a fee in an amount equal to the full cost to the Department and the Department of Justice of all activities related to the brownfields agreement, including but not limited to negotiation of the brownfields agreement, public notice and community involvement, and monitoring the implementation of the brownfields agreement. The procedure by which the amount of this fee is determined shall be established by agreement between the prospective developer and the Department and shall be set out as a part of the brownfields agreement. The fee imposed by this subdivision shall be paid in two installments. The first installment shall be due at the time the prospective developer and the Department enter into the brownfields agreement and shall equal all costs that have been incurred by the Department and the Department of Justice at that time less the amount of the initial fee paid pursuant to subdivision (1) of this subsection. The Department shall not enter into the brownfields agreement unless the first installment is paid in full when due. The second installment shall be due at the time the prospective developer submits a final report certifying completion of remediation under the brownfields agreement and shall include any additional costs that have been incurred by the Department and the Department of Justice, including all costs of monitoring the implementation of the brownfields agreement.

(b) Fees and interest imposed under this section shall be credited to the Brownfields Property Reuse Act Implementation Account.

(c) If a prospective developer fails to pay the full amount of any fee due under this section, interest on the unpaid portion of the fee shall accrue from the time the fee is due until paid at the rate established by the Secretary of Revenue pursuant to G.S. 105-241.1(i). A lien for the amount of the unpaid fee plus interest shall attach to the real and personal property of the prospective developer and to the brownfields property until the fee and interest is paid. The Department may collect unpaid fees and interest in any manner that a unit of local government may collect delinquent taxes. (1997-357, s. 2; 1999-360, s. 17.3.)

#### **§ 130A-310.40. Legislative reports.**

The Department shall prepare and submit to the Environmental Review Commission, concurrently with the report on the Inactive Hazardous Sites Response Act of 1987 required under G.S. 130A-310.10, an evaluation of the effectiveness of this Part in facilitating the remediation and reuse of existing industrial and commercial properties. This evaluation shall include any recommendations for additional incentives or changes, if needed, to improve the effectiveness of this Part in addressing such properties. This evaluation shall also include a report on receipts by and expenditures from the Brownfields Property Reuse Act Implementation Account. (1997-357, s. 2.)

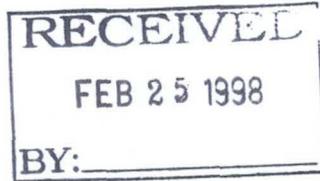


JAMES B. HUNT JR.  
GOVERNOR

WAYNE McDEVITT  
SECRETARY

WILLIAM L. MEYER  
DIRECTOR

NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF WASTE MANAGEMENT



February 23, 1998

Mr. Rick Shiver, Regional Supervisor  
DENR, Wilmington Regional Office  
127 Cardinal Drive Extension  
Wilmington, NC 28405

Dear Mr. Shiver,

As we recently discussed, the NC Superfund Section and Southern Wood Piedmont Co. (SWP) are currently negotiating an Administrative Order on Consent. This AOC would allow the EPA to defer listing the site on the National Priorities List while the State oversees remedial action conducted by SWP. We anticipate that SWP will contact your office in the near future with regard to groundwater conditions at the site.

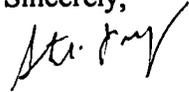
As requested, I have enclosed text and data tables from the following assessment reports for your information. These reports effectively summarize the site's investigative history over the past several years:

- Site Inspection Prioritization, NC Superfund Section, January 1995.
- Soil, Sediment and Surface Water Assessment Report, ViroGroup for Southern Wood Piedmont, May 1996.
- Expanded Site Inspection, Black & Veatch Special Projects Corp for USEPA Region IV Waste Management Division, July 1997.

Currently, the NC Superfund Section is preparing to establish two information repositories for the site and to provide public notice for review and comment on the proposed State Deferral. In Wilmington, the first information repository will be located at the New Hanover County Library reference desk. A duplicate repository will be maintained in the Superfund Section file room here in Raleigh. We will notify you once the date of the Kickoff Public Meeting is determined.

We appreciate any input from your office. If you have any questions or require additional information, please contact me at (919) 733-2801 (ext. 277).

Sincerely,



Stuart F. Parker,  
Hydrogeologist,  
NC Superfund Section

attachments

CC: Pat DeRosa  
Jack Butler  
file

INCIDENT MANAGEMENT SITE STATUS REPORT  
INFORMATION REQUIREMENTS

SOUTHERN WOOD PIEDMONT LAGOON  
NH Co.

1. Incident Number
2. Site Priority Ranking Score
3. Phase

6009  
70  
AS

DISCOVERY (DI)

DATE

4. Complaint or 24-hour leak report received by regional office

3/15/82

ASSESSMENT (AS)

5. Preliminary investigation and/or confirmation of leak report conducted by regional office and pollution incident/UST leak reporting form submitted to central office.

9/27/90

RESPONSE (RE)

6. Field investigation started to identify source(s) and responsible party(s)

FOLLOW-UP (FU)

7. NOV issued to responsible party(s) by regional office
8. Cleanup started (excavation, product removal, etc.) by responsible party
9. Twenty (20) day corrective action report received by regional office (UST sites)
10. Forty five (45) day initial site characterization report received by regional office (UST sites)
11. Forty five (45) day free product report received by regional office (UST sites)
12. Site "under control"
13. Tank data submitted
14. Enforcement report submitted by regional office
15. Special order issued by EMC

REMEDIAL ACTION (RA)

16. Corrective action plan approved by regional office
17. Public notice published
18. Public meeting held
19. SOC signed by Director/EMC

CLOSE OUT (CO)

20. Cleanup completed - no further action necessary
21. Close out report submitted to central office

\*\*For further clarification of phase terminology, see attached document entitled "Explanation of Phase Nomenclature".

INCIDENT MANAGEMENT SITE STATUS REPORT  
INFORMATION REQUIREMENTS

- 1. Incident Number
- 2. Site Priority Ranking Score
- 3. Phase

5977  
70  
AS

DISCOVERY (DI)

DATE

- 4. Complaint or 24-hour leak report received by regional office

3/15/82

ASSESSMENT (AS)

- 5. Preliminary investigation and/or confirmation of leak report conducted by regional office and pollution incident/UST leak reporting form submitted to central office.

9/24/90

RESPONSE (RE)

- 6. Field investigation started to identify source(s) and responsible party(s)

FOLLOW-UP (FU)

- 7. NOV issued to responsible party(s) by regional office
- 8. Cleanup started (excavation, product removal, etc.) by responsible party
- 9. Twenty (20) day corrective action report received by regional office (UST sites)
- 10. Forty five (45) day initial site characterization report received by regional office (UST sites)
- 11. Forty five (45) day free product report received by regional office (UST sites)
- 12. Site "under control"
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- 20. Cleanup completed - no further action necessary
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\*\*For further clarification of phase terminology, see attached document entitled "Explanation of Phase Nomenclature".



**POLLUTION INCIDENT/U.S.T. LEAK REPORTING FORM**

**POLLUTANTS INVOLVED**

E	MATERIALS INVOLVED	AMOUNT STORED OR TANK CAPACITY	AMOUNT LOST	AMOUNT RECOVERED
	<u>CREOSOTE</u>	<u>UNK</u>	<u>UNK</u>	<u>UNK</u>
	<u>PENTACHLOROPHENOL</u>	<u>UNK</u>	<u>UNK</u>	<u>UNK</u>
	<u>COPPER CHROMATE ARSENATE</u>	<u>UNK</u>	<u>UNK</u>	<u>UNK</u>

**IMPACT ON SURFACE WATERS**

F	WATERS AFFECTED	1. Yes	2. No	3. Potentially	Distance to Stream(ft)
	Fish Kill	1. Yes	2. No		
	Name of Stream				Stream Class
	<u>CAPE FEAR RIVER</u>				<u>SC</u>

**IMPACT ON DRINKING WATER SUPPLIES**

G	WELLS AFFECTED	1. Yes	2. No	3. Potentially	No. of Wells Affected	No. of Wells Potentially Affected
		Population Served By Affected Wells				
	Estimated Population Served By Potentially Affected Wells				Aquifer(s) Being Used <u>CITY WATER</u>	
					1. Water Table	2. Confined 3. Bedrock

**POTENTIAL SOURCE OF POLLUTION**

H	PRIMARY SOURCE OF POTENTIAL POLLUTION (Select one)	PRIMARY POLLUTANT TYPE (Select one)	LOCATION	SETTING
		1. Intentional dump 2. Pit, pond, lagoon 3. Leak-underground 4. Spray Irrigation 5. Land application 6. Animal feedlot 7. Source unknown 8. Septic tank 9. Sewer line 10. Stockpile 11. Landfill 12. Spill-surface 13. Well 14. Dredge spoil 15. Nonpoint source	1. Pesticide/herbicide 2. Radioactive waste 3. Gasoline/diesel 4. Heating oil 5. Other petroleum prod. 6. Sewage/septage 7. Fertilizers 8. Sludge 9. Solid waste leachate 10. Metals 11. Other Inorganics 12. Other organics	1. Facility 2. Railroad 3. Waterway 4. Pipeline 5. Dumpsite 6. Highway 7. Residence 8. Other
	If other sources, list corresponding No's.		Confirmed Violation of:	
	If multiple pollutant types, list corresponding No's.		1. 15 NCAC 2L <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	If PIRF previously submitted for Nonprimary Sources, list Incident No's.		2. Article 21A Part I <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
			3. Article 21A Part II <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
			4. Federal/State U.S.T. rules <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	



LOCATION OF INCIDENT

7 1/2 Min. Quad Name

WILMINGTON

Lat. : Deg : Min : Sec :

34° 12' 47" N

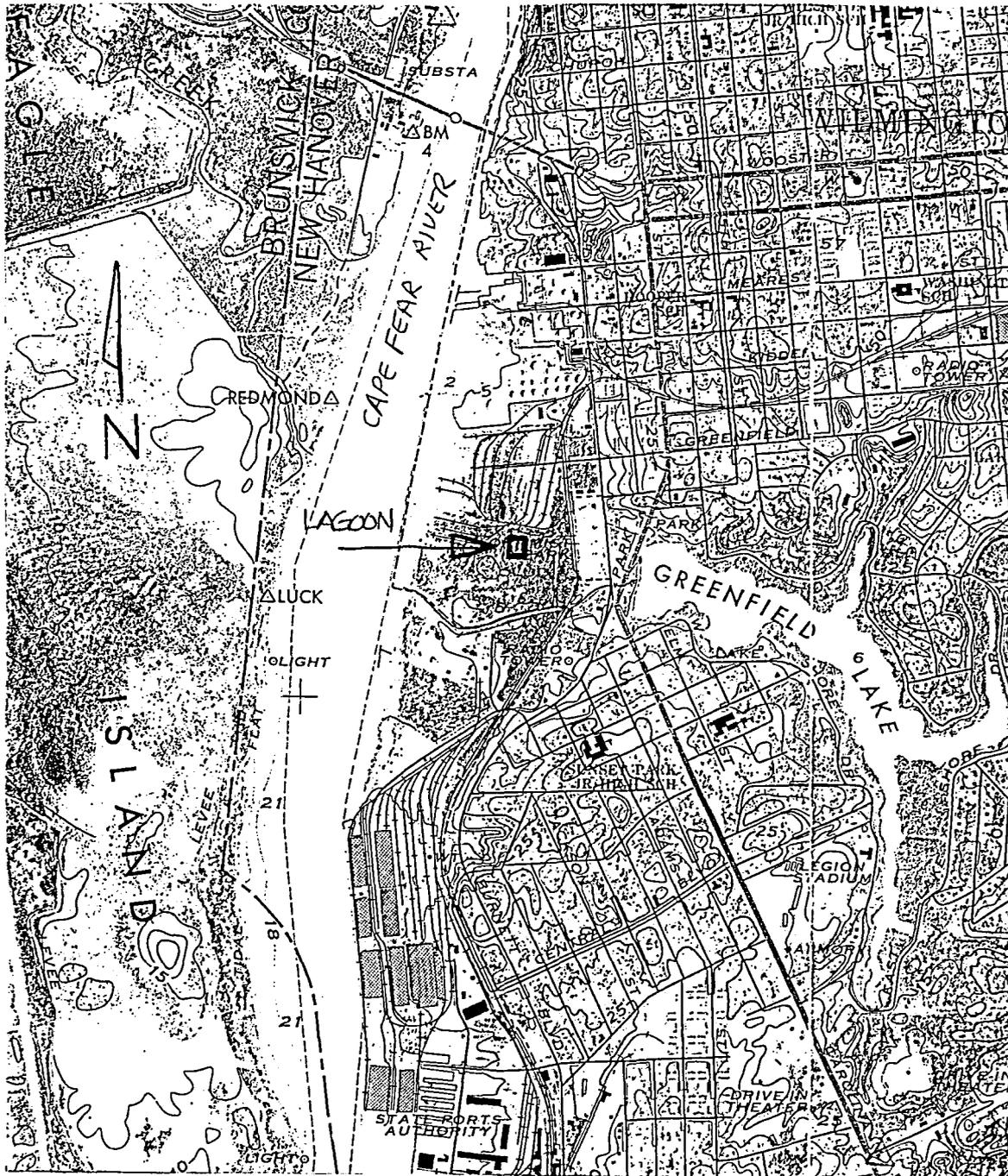
Five Min. Quad Number

DD-31 2-

Long. : Deg : Min : Sec :

77° 56' 58" W

Draw Sketch of Area



SCALE: 1" = 2000 FT

Sketch Should Identify The Following:

- |                               |  |  |
|-------------------------------|--|--|
|                               | 1. Pollutant Source(s)                         | 2. Impacted and Threatened Water Supplies                |
| 3. Direction of Overland Flow | 4. Significant Recharge and Discharge Features | 5. Relative Physical Structures (roads, buildings, etc.) |
| 6. North Arrow                | 7. Scale                                       |  |

Incident Name SOUTHERNOOD PLED MONT LAGOON  
 Region/County WIRO / NEW HANOVER  
 Groundwater Incident File # \_\_\_\_\_  
 Ranking Performed by TDICKEY Date 9/24/00

NORTH CAROLINA  
 GROUNDWATER CONTAMINATION INCIDENT MANAGEMENT SITE PRIORITY RANKING SYSTEM

---

	<u>Points Awarded</u>
<b>I. IMMINENT HAZARD ASSESSMENT</b>	
A. Explosion - free product in confined areas or vapor phase product detected at or above 20% of the lower explosive limit; award 50 points total	<u>0</u>
B. Fire - free product subject to ignition in exposed areas such as surface water impoundments, streams, excavations, etc.; award 50 points total	<u>0</u>
<b>II. EXPOSURE ASSESSMENT</b>	
A. Contaminated Drinking Water Supplies	
1. Private, domestic water supply well containing substances in concentrations exceeding GA underground water quality standards; award 10 points per well	<u>0</u>
2. Public or institutional water supply well containing substances in concentrations exceeding Class GA underground water quality standards; award 30 points per well	<u>0</u>
3. Exceedances of Class WS-1 surface water quality standards as a result of groundwater discharge; award 20 points per surface water body impacted	<u>0</u>
4. If a water supply well identified in items II.A.1 and II.A.2 cannot be replaced by an existing public water supply source requiring hook-up only; award additional 10 points per irreplaceable well	<u>0</u>
B. Threat to Uncontaminated Drinking Water Supplies	
1. Private, domestic water supply well located within 1500 feet down gradient of contaminant source; award 10 points per well	<u>0</u>
2. Public or institutional water supply well located within 1/2 mile downgradient of contaminant source; award 15 points per well	<u>0</u>
3. Raw surface water intake for public water supply located within 1/2 mile downgradient of contaminant source; award 5 points per water supply system	<u>0</u>
4. If any well identified in items II.B.1 and II.B.2 is located within 250 feet of contaminant source; award additional 20 points total	<u>0</u>
C. Vapor Phase Exposure	
1. Product vapors detected in inhabitable building(s); award 30 points total	<u>0</u>

Points Awarded

2. Product vapors detected in other confined areas (uninhabitable buildings, sewer lines, utility vaults, etc.); award 5 points total

0

III. CONTAMINANT HAZARD ASSESSMENT (chemical groups are categorized based on toxicity, mobility and persistence in the environment). Evaluate the most hazardous substances detected and select only one of the following:

- A. Award 30 points total if contaminants detected are identified with any of the following groups:

30

1. Aromatic (Benzene) Acids
2. Aromatic Hydrocarbons (Benzene Derivatives)
3. Sulfonated Hydrocarbons
4. Halogenated Hydrocarbons
5. Alkaloids
6. Anilines
7. Phenols
8. Aldehydes
9. Ketones
10. Organic Sulfur Compounds (Sulfides, Mercaptans)
11. Organometallic Compounds
12. Cyanides
13. Esters
14. Metal Salts, Including Heavy Metals

- B. Award 20 points total if contaminants detected are identified with any of the following groups:

0

1. Aliphatic (Fatty) Acids
2. Alcohols
3. Aliphatic Hydrocarbons (Petroleum Derivative)
4. Pyridines
5. Thiocyanides
6. Mineral and Metal Acids
7. Mineral and Metal Bases
8. Oxides
9. Sulfides

- C. Award 10 points total if contaminants detected are identified with any of the following groups:

0

1. Aliphatic Amines and Their Salts
2. Sugars and Cellulose
3. Carbon and Graphite

IV. SOURCE ASSESSMENT

- A. Free product thickness of  $\geq 1/4$  inch detected on water table in observation or monitoring well; award 20 points total

0

- B. Contaminated Soil (select only one answer)

1. Soil saturated with product (saturation determined by release of free liquid upon compaction of a soil sample by hand pressure); award 10 points total

0

(cont.)

Points Awarded

2. Soil exhibiting organic vapor content above 100 ppm as measured by organic vapor or volatile organic detection equipment; award 5 points total

0

C. Uncontrolled or Unabated Primary Source (including dumpsites, stockpiles, lagoons, land applications, septic tanks, landfills, underground and above ground storage tanks, etc.)

1. Suspected or confirmed source remains in active use and continues to receive raw product, wastewater or solid waste; award 20 points per source

0

2. Active use of suspected or confirmed source has been discontinued or source was caused by a one-time release of product or waste, however, source continues to reelease product or contaminants into the environment; award 10 points per source

10

V. ENVIRONMENTAL VULNERABILITY ASSESSMENT

A. Vertical Contaminant Migration - Literature or well logs indicate that no confining layer is present above bedrock or above twenty feet below land surface; award 10 points total

10

B. Horizontal Contaminant Migration - Data or observations indicate that no discharge points or aquifer discontinuities exist between the source and the nearest downgradient drinking water supply; award 10 points total

0

C. Hydraulic Gradient Is Determined by (select only one answer):

1. Calculations based on groundwater level measurements; award 10 points total

10

2. Observation of significant recharge/discharge features in the vicinity of contaminant source and local topographic features; award 5 points total

0

3. Observation of local topographic features only; award 0 points

0

D. Existing Groundwater Quality

1. Analytical test(s) performed on groundwater sample(s) obtained from site confirm presence of substances in concentrations exceeding Class GA underground water quality standards; award 10 points total

10

2. Source(s) identified in Section IV constitute the only known source(s) of contamination resulting in exposure or potential exposure identified in Section II; award 10 points total

0

TOTAL POINTS AWARDED

70

# POLLUTION INCIDENT/U.S.T. LEAK REPORTING FORM

Division of Environmental Management  
GROUNDWATER SECTION

① Incident # 5977  
2. Tabulate only \_\_\_\_\_

### TYPE OF ACTION

<b>A</b>	1. Emergency Response 2. Compliance Investigation	3. Complaint Investigation ④ Routine Inventory	5. U.S.T. Leak 6. Other: _____
	POTENTIAL HAZARDS: ① Toxic Chemicals    2. Radioactivity    3. Air Emissions    4. Explosives    5. Fire		

### INCIDENT DESCRIPTION

<b>B</b>	Incident Location/Name <u>SOUTHERN WOOD PIEDMONT LANDFARM</u>			
	Address <u>GREENFIELD ST.</u>			
	City/Town <u>WILMINGTON</u>	County <u>NEW HANOVER</u>	Region <u>WIRO</u>	
	Briefly Describe Incident			
<p>FROM 1964-1983 A WOOD PRESERVING OPERATION WAS CARRIED OUT ON THE SITE. VARIOUS LEAKS AND SPILLS RESULTED IN SEVERAL AREAS OF CONTAMINATED SOILS. CONTAMINATED SOILS ARE BEING LANDFARMED ON SITE.</p>				
Date Incident Occurred or Leak Detected <u>1964-1983</u>	If U.S.T., How Leak Was Detected	1. Tank Gauging 2. Vapor Monitoring 3. GW Monitoring 4. Contractor who tightness tested, removed tank, or installed leak detection system. _____	5. Interstitial Monitoring 6. Tank Removal 7. Tightness Test 8. Other: _____	

### PERSON REPORTING INCIDENT

<b>C</b>	Name <u>HUGH CALDWELL</u>	Date <u>3/15/82</u>	Time <u>DNA</u>
	Company/Agency <u>CITY OF WILMINGTON</u>	Telephone <u>(919) 341-7807</u>	
	REPORTED BY: 1. Tank owner/operator    ② Government agency    3. Private (3rd) party 4. Facility owner (Non-L.U.S.T.)    5. Other: _____		

### RECOMMENDED ACTION

<b>D</b>	(MULTIPLE CHOICES POSSIBLE)			
	1. Investigation complete	3. Initiate/complete cleanup	5. Drilling support	7. Confirm leak
	2. Continue investigation	④ Long-term remedial action	6. Issue NOV	8. Monitoring plan
	Comments <u>THIS IS A SUPERFUND SITE AND SUBJECT OF A SOLID WASTE MANAGEMENT CONSENT ORDER</u>			
CLEANUP LEAD ① Responsible Party			Site Priority Ranking <u>70</u>	
2. State				
D.E.M. Regional Contact <u>RICK SHIVER</u>		Signature <u>P.R. Dickey</u>	Date <u>9/24/90</u>	

# POLLUTION INCIDENT/U.S.T. LEAK REPORTING FORM

## POLLUTANTS INVOLVED

	MATERIALS INVOLVED	AMOUNT STORED OR TANK CAPACITY	AMOUNT LOST	AMOUNT RECOVERED
<b>E</b>	<u>CREOSOTE</u>	<u>UNK</u>	<u>UNK</u>	<u>UNK</u>
	<u>PENTACHLOROPHENOL</u>	<u>UNK</u>	<u>UNK</u>	<u>UNK</u>
	<u>COPPER CHROMATE ARSENATE</u>	<u>UNK</u>	<u>UNK</u>	<u>UNK</u>

## IMPACT ON SURFACE WATERS

	WATERS AFFECTED	1. Yes	2. No	3. Potentially	Distance to Stream(ft)
<b>F</b>				<input checked="" type="radio"/>	<u>800</u>
	Fish Kill	1. Yes	<input checked="" type="radio"/>	No	Name of Stream <u>CAPE FEAR RIVER</u>
					Stream Class <u>SC</u>

## IMPACT ON DRINKING WATER SUPPLIES

	WELLS AFFECTED	1. Yes	2. No	3. Potentially	No. of Wells Affected	No. of Wells Potentially Affected
<b>G</b>			<input checked="" type="radio"/>	No		
	Population Served By Affected Wells				Estimated Population Served By Potentially Affected Wells	Aquifer(s) Being Used <u>CITY WATER</u> 1. Water Table    2. Confined    3. Bedrock

## POTENTIAL SOURCE OF POLLUTION

	PRIMARY SOURCE OF POTENTIAL POLLUTION (Select one)	PRIMARY POLLUTANT TYPE (Select one)	LOCATION	SETTING	
<b>H</b>	1. Intentional dump	13. Well	1. Pesticide/herbicide	<input checked="" type="radio"/> 1. Facility	1. Residential
	2. Pit, pond, lagoon	14. Dredge spoil	2. Radioactive waste	2. Railroad	<input checked="" type="radio"/> 2. Industrial
	3. Leak-underground	15. Nonpoint source	3. Gasoline/diesel	3. Waterway	3. Urban
	4. Spray Irrigation		4. Heating oil	4. Pipeline	4. Rural
	<input checked="" type="radio"/> 5. Land application		5. Other petroleum prod.	5. Dumpsite	
	6. Animal feedlot		6. Sewage/septage	6. Highway	
	7. Source unknown		7. Fertilizers	7. Residence	
	8. Septic tank		8. Sludge	8. Other	
	9. Sewer line		<input checked="" type="radio"/> 9. Solid waste leachate		
	10. Stockpile		10. Metals		
	11. Landfill		11. Other Inorganics		
	12. Spill-surface		12. Other organics		
	If other sources, list corresponding No's.		Confirmed Violation of: 1. 15 NCAC 2L <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2. Article 21A Part I <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 3. Article 21A Part II <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 4. Federal/State U.S.T. rules <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
	If multiple pollutant types, list corresponding No's.				
	If PIRF previously submitted for Nonprimary Sources, list Incident No's.				

# POLLUTION INCIDENT/U.S.T. LEAK REPORTING FORM

## POTENTIAL SOURCE OWNER-OPERATOR

Potential Source Owner-Operator <b>CHARLES BURDELL</b>				Telephone <b>(803) 576-7160</b>
Company <b>SOUTHERN WOOD PIEDMONT</b>		Street Address <b>P.O. BOX 5447</b>		
City <b>SPARTANBURG</b>	County <b>SPARTANBURG</b>	State <b>SC</b>	Zip Code <b>29304</b>	
U.S.T. REGISTERED 1. YES 2. NO	SOURCE/U.S.T. IN USE 1. N/A 2. YES 3. NO	PERMIT TYPE 0. N/A 1. Non-discharge 2. Oil terminal 3. Landfill 4. Mining 5. NPDES 6. RCRA	OWNERSHIP 0. N/A 1. Municipal 2. Military 3. Unknown <input checked="" type="radio"/> 4. Private 5. Federal 6. County 7. State	OPERATION TYPE 0. N/A 1. Public Service 2. Agricultural 3. Residential 4. Educational/Religious <input checked="" type="radio"/> 5. Industrial 6. Commercial 7. Mining
FACILITY ID# <b>DNA</b>	SOURCE PERMITTED 1. Yes 2. No	PERMIT NUMBER		
FEDERAL U.S.T. DESIGNATION 1. Regulated 2. Non-Regulated	SOURCE ON ERRIS LIST <input checked="" type="radio"/> 1. Yes 2. No	ERRIS NUMBER <b>02821</b>		
STATE U.S.T. DESIGNATION 1. Commercial 2. Non-Commercial	U.S.T. LEAK PREVENTION MEASURES Was tank retrofitted with overfill protection? 1. Yes 2. No When and by whom? _____ Was tank retrofitted with Interior lining? 1. Yes 2. No When and by whom? _____ Was tank retrofitted with cathodic protection? 1. Yes 2. No When and by whom? _____			REASON FOR INCIDENT 1. Transportation 2. Mechanical failure <input checked="" type="radio"/> 3. Facility 4. Inventory only 5. Human error 6. Vandalism 7. Unknown

### ACTIONS TAKEN

Investigation, Containment, Cleanup, etc.	
	<b>1964-1983 WOOD PRESERVING PLANT OPERATED ON SITE</b>
	<b>3/82 REPORT ON SITE ASSESSMENT ISSUED</b>
	<b>5/85 CONSENT ORDER SIGNED BY STATE AND SOUTHERN WOOD PIEDMONT TO REMEDIATE SITE BY LANDFARMING</b>
Circle Appropriate Responses Lab Samples Taken By: 1. D.E.M.    2. D.H.S. <input checked="" type="radio"/> 3. Responsible Party    4. None	
Samples Taken Include <input checked="" type="radio"/> 1. Groundwater <input checked="" type="radio"/> 2. Soil    3. Surface Water	

POLLUTION INCIDENT/U.S.T. LEAK REPORTING

LOCATION OF INCIDENT

7 1/2 Min. Quad Name

WILMINGTON

Lat. : Deg : Min : Sec : 34° 12' 57" N

Five Min. Quad Number

DD-31, 1-

Long. : Deg : Min : Sec : 77° 56' 56" W

Draw Sketch of Area

SEE ATTACHED

K

Sketch Should Identify The Following:

- 1. Pollutant Source(s)
- 2. Impacted and Threatened Water Supplies
- 3. Direction of Overland Flow
- 4. Significant Recharge and Discharge Features
- 5. Relative Physical Structures (roads, buildings, etc.)
- 6. North Arrow
- 7. Scale

LAND FARM  
AREA  
FOR  
CONTAMINATED  
SOILS

Cape Fear River  
U.S. Harbor Line

B-5  
Surry Street

Greenfields St

R/W

Slip

B-4

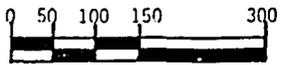
B-3

B-2

Pressure  
Vat  
Cooker  
Building

Storage  
Tanks

B-1



Scale in Feet



SOIL & MATERIAL ENGINEERS, INC.  
RALEIGH, NORTH CAROLINA

Boring Location Plan  
Southern Wood Piedmonts  
City of Wilmington Property  
Wilmington, N. C.

DRWN. BY: PB	CHKD. BY: PLB
JOB NO.: RS-1759	DATE: 12-4-91
SCALE: Graphic	SHEET 1 OF 2

Incident Name SOUTHERN WOOD PIEDMONT  
 Region/County WIRO / NEW HANOVER  
 Groundwater Incident File # \_\_\_\_\_  
 Ranking Performed by TDICKEY Date 9/21/90

NORTH CAROLINA

GROUNDWATER CONTAMINATION INCIDENT MANAGEMENT SITE PRIORITY RANKING SYSTEM

		<u>Points Awarded</u>
I.	IMMINENT HAZARD ASSESSMENT	
A.	Explosion - free product in confined areas or vapor phase product detected at or above 20% of the lower explosive limit; award 50 points total	<u>0</u>
B.	Fire - free product subject to ignition in exposed areas such as surface water impoundments, streams, excavations, etc.; award 50 points total	<u>0</u>
II.	EXPOSURE ASSESSMENT	
A.	Contaminated Drinking Water Supplies	
1.	Private, domestic water supply well containing substances in concentrations exceeding GA underground water quality standards; award 10 points per well	<u>0</u>
2.	Public or institutional water supply well containing substances in concentrations exceeding Class GA underground water quality standards; award 30 points per well	<u>0</u>
3.	Exceedances of Class WS-1 surface water quality standards as a result of groundwater discharge; award 20 points per surface water body impacted	<u>0</u>
4.	If a water supply well identified in items II.A.1 and II.A.2 cannot be replaced by an existing public water supply source requiring hook-up only; award additional 10 points per irreplaceable well	<u>0</u>
B.	Threat to Uncontaminated Drinking Water Supplies	
1.	Private, domestic water supply well located within 1500 feet down gradient of contaminant source; award 10 points per well	<u>0</u>
2.	Public or institutional water supply well located within 1/2 mile downgradient of contaminant source; award 15 points per well	<u>0</u>
3.	Raw surface water intake for public water supply located within 1/2 mile downgradient of contaminant source; award 5 points per water supply system	<u>0</u>
4.	If any well identified in items II.B.1 and II.B.2 is located within 250 feet of contaminant source; award additional 20 points total	<u>0</u>
C.	Vapor Phase Exposure	
1.	Product vapors detected in inhabitable building(s); award 30 points total	<u>0</u>

Points Awarded

2. Product vapors detected in other confined areas (uninhabitable buildings, sewer lines, utility vaults, etc.); award 5 points total

0

III. CONTAMINANT HAZARD ASSESSMENT (chemical groups are categorized based on toxicity, mobility and persistence in the environment). Evaluate the most hazardous substances detected and select only one of the following:

- A. Award 30 points total if contaminants detected are identified with any of the following groups:

30

1. Aromatic (Benzene) Acids
2. Aromatic Hydrocarbons (Benzene Derivatives)
3. Sulfonated Hydrocarbons
4. Halogenated Hydrocarbons
5. Alkaloids
6. Anilines
7. Phenols
8. Aldehydes
9. Ketones
10. Organic Sulfur Compounds (Sulfides, Mercaptans)
11. Organometallic Compounds
12. Cyanides
13. Esters
14. Metal Salts, Including Heavy Metals

- B. Award 20 points total if contaminants detected are identified with any of the following groups:

0

1. Aliphatic (Fatty) Acids
2. Alcohols
3. Aliphatic Hydrocarbons (Petroleum Derivative)
4. Pyridines
5. Thiocyanides
6. Mineral and Metal Acids
7. Mineral and Metal Bases
8. Oxides
9. Sulfides

- C. Award 10 points total if contaminants detected are identified with any of the following groups:

0

1. Aliphatic Amines and Their Salts
2. Sugars and Cellulose
3. Carbon and Graphite

IV. SOURCE ASSESSMENT

- A. Free product thickness of  $\geq 1/4$  inch detected on water table in observation or monitoring well; award 20 points total

0

- B. Contaminated Soil (select only one answer)

1. Soil saturated with product (saturation determined by release of free liquid upon compaction of a soil sample by hand pressure); award 10 points total

0

(cont.)

Points Awarded

2. Soil exhibiting organic vapor content above 100 ppm as measured by organic vapor or volatile organic detection equipment; award 5 points total

0

C. Uncontrolled or Unabated Primary Source (including dumpsites, stockpiles, lagoons, land applications, septic tanks, landfills, underground and above ground storage tanks, etc.)

1. Suspected or confirmed source remains in active use and continues to receive raw product, wastewater or solid waste; award 20 points per source

0

2. Active use of suspected or confirmed source has been discontinued or source was caused by a one-time release of product or waste, however, source continues to reelease product or contaminants into the environment; award 10 points per source

10

V. ENVIRONMENTAL VULNERABILITY ASSESSMENT

A. Vertical Contaminant Migration - Literature or well logs indicate that no confining layer is present above bedrock or above twenty feet below land surface; award 10 points total

10

B. Horizontal Contaminant Migration - Data or observations indicate that no discharge points or aquifer discontinuities exist between the source and the nearest downgradient drinking water supply; award 10 points total

0

C. Hydraulic Gradient Is Determined by (select only one answer):

1. Calculations based on groundwater level measurements; award 10 points total

10

2. Observation of significant recharge/discharge features in the vicinity of contaminant source and local topographic features; award 5 points total

0

3. Observation of local topographic features only; award 0 points

0

D. Existing Groundwater Quality

1. Analytical test(s) performed on groundwater sample(s) obtained from site confirm presence of substances in concentrations exceeding Class GA underground water quality standards; award 10 points total

10

2. Source(s) identified in Section IV constitute the only known source(s) of contamination resulting in exposure or potential exposure identified in Section II; award 10 points total

0

TOTAL POINTS AWARDED

70

06-18-85: 0900-0950

CHARLES BURDELL - SWP

HENRY PHILLIPS - SWP

DOUG LATHAM - SWP

CHUCK DAVIS - SWP

CHARLES SPIEDS - LETCO

DOUG HOLYFIELD - SHWMB

RICK SHIVER

DOUG AND I INSPECTED LANDFARM. APPEARS TO BE IN DECENT SHAPE. SWP INTENDS TO IRRIGATE LANDFARM WITH CITY WATER. SWP WAS COLLECTING SAMPLES FROM ITS LYSIMETERS; ONE SAMPLE BOTTLE WAS AN EMPTY "FANDANGO" BOTTLE.

DISCUSSED LOCATION OF FOUR RCRA WELLS. SPIEDS BELIEVES GRADIENT IS NORTH-SOUTH, I BELIEVE ITS EAST WEST. WELLS MUST BE LOCATED PER 5-3-85 LETTER TO BURDELL FROM PAIGE. HOWEVER, SPIEDS CAN COLLECT DATA NECESSARY TO SHOW GRADIENT IS NOT EAST-WEST (TOWARD RIVER).

BURDELL NEEDS XC 2L? SENT HIM SALE ON 6-19-85.



North Carolina Department of Human Resources  
Division of Health Services  
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor  
Phillip J. Kirk, Jr., Secretary

Ronald H. Levine, M.D., M.P.H.  
State Health Director  
919/733-3446

June 14, 1985

**RECEIVED**

JUN 17 1985

WILMINGTON REGIONAL OFFICE  
DEM

Mr. Rick Shiver  
Division of Environmental  
Management  
7225 Wrightsville Avenue  
Wilmington, N.C. 28403

Dear Rick:

Enclosed is a copy of the signed Administrative Order of Consent.  
I will keep you posted as new information develops.

Sincerely,

  
William Paige, Environmental Engineer  
Solid & Hazardous Waste Management Branch  
Environmental Health Section

WP:lp

Enclosure



North Carolina Department of Human Resources  
Division of Health Services  
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor  
Phillip J. Kirk, Jr., Secretary

Ronald H. Levine, M.D., M.P.H.  
State Health Director  
919/733-3446

May 22, 1985

Roger H. Watts  
Vice President and General Counsel  
ITT Rayonier, Inc.  
1177 Summer Street  
Stamford, CT 06904

Re: Southern Wood Piedmont: NCD058517467  
Administrative Order on Consent

Dear Mr. Watts:

On May 20, 1985, Mr. Meyer, Branch Head, signed the Consent Order which was executed earlier by Southern Wood Piedmont. Your re-draft of paragraph 13 was acceptable to him.

As we discussed, Southern Wood will need to withdraw, in writing, their request for an administrative hearing. Partha Howell, of the hearing office, was notified orally of that request on May 20, 1985.

Also, Southern Wood will need to designate one person as the primary contact, referred to in paragraph 16, for ensuring compliance with the Order. Pursuant to our discussions, Mike Pruett will be that contact until further notice.

We look forward to working with you to address conditions at this site. If I can be of assistance, particularly with the recordation issue, please let me know.

Sincerely,

A handwritten signature in cursive script that reads "Prentiss Anne Allen".

Prentiss Anne Allen, Branch Attorney  
Solid & Hazardous Waste Mgt. Branch  
Environmental Health Section

PAA/bb/2721  
Enclosure

cc: William Paige ✓  
Doug Holyfield.  
Gary Babb  
Chris Hoke

STATE OF NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES

DEPARTMENT OF HEALTH SERVICES

In Re:  
SOUTHERN WOOD PIEDMONT COMPANY )  
NCD058517467 )

ADMINISTRATIVE ORDER  
ON CONSENT

BACKGROUND

From about 1964 to 1983, Southern Wood Piedmont Company (Southern Wood), a subsidiary of ITT Rayonier, Inc., a Delaware corporation, owned and operated a plant in Wilmington, North Carolina, which engaged in the business of wood preserving. The preservatives used were creosote coal tar, pentachlorophenol (PCP) in diesel oil and copper, chromate and arsenate (known as CCA). As part of that operation, residues were deposited in several locations on the plant site. The areas, identified in Southern Wood's February 13, 1983, correspondence to Mr. William Paige, Environmental Engineer, are summarized in Attachment I and shown in the map in Attachment II.

AGREEMENT

In order to resolve a dispute regarding the applicability of the Resource Conservation and Recovery Act (RCRA) and the Solid Waste Management Act and rules (N.C.G.S. 130-A, Article 9 and 10 NCAC 10 F), and to avoid costly protracted litigation, Southern Wood and the State do hereby enter into this Administrative Order on Consent (Consent Order).

The purpose of this Order is to address soil and ground water contamination and to provide clean-up/remedial actions which will minimize the site's impact on the environment and public health in a manner which is consistent with the State and Federal hazardous waste laws and rules.

Therefore, in order to further the public interest and to protect the public health and environment, Southern Wood Piedmont and the State, by and through their authorized representatives, do enter into the following Consent Order and agree:

1. That Southern Wood is a Delaware corporation, which rents a plant site in North Carolina at Wilmington owned by the city of Wilmington and the Port Authority of the State.
2. That, to protect the public health and environment, the Solid and Hazardous Waste Management Branch, Environmental Health Section, Department of Human Resources of the State of North Carolina (State) is empowered to implement and seek compliance with the standards for generation, transportation, treatment, storage and disposal of waste pursuant to the Solid Waste Management Act, N.C.G.S. Chapter 130-A (Act), and the rules promulgated thereunder at 40 CFR 260-271, codified at 10 NCAC 10 F (rules). The State has been authorized to implement the State program in lieu of the Federal hazardous waste program under the Resource Conservation and Recovery Act (RCRA). William L. Meyer, Head of the Branch, has been delegated those responsibilities.
3. This Consent Order shall apply and be binding upon Southern Wood, its successors and assigns and upon all persons or firms acting under or for them. Southern Wood shall provide a copy of this Consent Order to each contractor or other person performing any work under this Order and shall condition each contract or agreement for such work upon these Consent Order terms.
4. That nothing in this Consent Order shall be construed as limiting the State from performing its duty to protect the public health and the environment of the State as required by law.

5. That nothing herein shall be construed to affect any rights, claims or defenses as may exist between Southern Wood and any other person or entity.
6. That the State shall suspend the Compliance Order and Notice of Penalty, dated September 7, 1984, if compliance with this Consent Order is achieved as set forth herein. If compliance with this Order is not achieved, the September 7, 1984, Order and penalty shall become effective immediately upon written notice.
7. That Southern Wood shall continue with the ongoing remedial action, being implemented in the operating areas as set forth in the remedial action plan submitted to the State on July 31, 1984, as modified by the terms of this Order. This action currently consists of land treatment to reduce the oil preservative residuals in contaminated soil to an acceptable residual level. The land treatment shall be conducted on treated pole storage areas where there are presently low levels of preservative residuals in the soil.

The contaminated areas described below shall be addressed in the following manner:

- a. Superfund Area I  
Excavate this area and landfarm the discolored soil in one of the treated pole storage areas.
- b. Track Area  
Remove the visually, heavily contaminated soil and landfarm in a treated pole storage area.
- c. Oil Treating Areas  
Remove the visually, heavily contaminated soil and landfarm in a treated pole storage area.

d. Large Storage Tank Containment Area

Remove the visually, heavily contaminated soil and landfarm in a treated pole storage area.

e. Treated Product Storage Area

The treated pole storage areas not used for landfarming of heavily contaminated soil shall be tilled in place.

f. CCA Storage Tank Area

Soil testing 0.5PPM arsenic or greater on the basis of the EP toxicity test for arsenic will be excavated from the site, but not from a depth in excess of five feet. Soil testing greater than 5.0 PPM arsenic will be sent offsite to a permitted land disposal facility, while soil which contains between 5.00 PPM and 0.5PPM arsenic will be mixed with Portland cement in a ratio which does not allow arsenic to extract above 0.5PPM as determined by the EP toxicity test. The treated material will then be buried on site.

g. Storage Tank Sludges

Remove the CCA sludge for disposal in a hazardous waste landfill. Remove the sludges from the bottom of the various oil tanks for disposal or energy recovery in a State approved landfill, incinerator, or boiler that has no outstanding Class I RCRA violations, or a landfill or combustion process out of the State which is approved by the environmental agency of the state concerned.

h. The landfarming will be done in an area identified as LF1 or LF2, or both, if needed, as outlined on the plant layout diagram (Attachment II).

i. The designated landfarm areas will be bermed and ditched to prevent rain runoff or runon.

- j. Lysimeters will be installed at depths sufficient to monitor soil water quality. These lysimeters shall be protected to prevent damage by tilling equipment. Three down gradient monitoring wells and one upgradient monitoring well shall be installed to monitor groundwater quality. Groundwater monitoring devices shall be in accordance with the standards established by the Division of Environmental Management, Department of Natural Resources.
- k. Contaminated soil from the areas identified earlier shall be spread not to exceed a maximum two-inch layer over the landfarm area. Land treatment shall be limited to the upper six inches.
- l. The application of a commercial fertilizer shall be determined based upon soil analysis.
- m. The soil will be tilled weekly, weather permitting, to promote biological and photochemical breakdown of treating chemical residuals.
- n. Tillage and aeration of the land treatment areas shall continue until residual concentrations are determined not to have a significant impact on the public health and the environment as determined by the State.
8. That Southern Wood shall adhere to the following sampling and testing schedule:
  - a. Lysimeters will be sampled prior to application of contaminated soil to the landfarm areas, and every two months thereafter.
  - b. Soil will be sampled immediately after the initial tilling is completed. Samples will be obtained at 0-3", 9-12", and 21-24" depths. The soil sampling will be in accordance with SW 846.
  - c. All samples (soil, water) will be analyzed for PCP and the major constituents of creosote.
  - d. The sample results shall be submitted to this agency within 7 days after analysis.

9. All sampling and analysis shall be in accordance with EPA Publication, SW-846, "Test Methods for Evaluating Solid Waste" as revised.
10. That the landfarming operation will continue until a concentration of residual PCP and major constituents of creosote is reached which will protect public health and the environment. At this time it is not known what these concentrations are or how long it will take to reach them, but it is possible that up to two years may be required to stabilize the waste taken from Superfund Area I. Nothing in this order shall be interpreted to preclude Southern Wood from exercising its right to challenge any State determination as to safe residual concentrations if the company does not agree with such determination.
11. It is recognized that groundwater flow under the site is towards the Cape Fear River and that any contaminants reaching the groundwater from the site should eventually reach the river. Accordingly, Southern Wood will monitor the Cape Fear River upstream and downstream from the site to see if any water quality standard which could be affected by residues at the site is causing a violation of state water quality standards. Such monitoring shall be done at least twice per year during the time the land treatment operation to which this Order is in process. Further action to protect surface water quality standards or groundwater may be required by the Department of Human Resources or the Department of Natural Resources and Community Development pursuant to Chapter 143, Articles 21, 21A, and Chapter 87, Article 7 of the North Carolina General Statutes and 15 NCAC 2C, 2E, and 2L depending on the results of such monitoring, and the parties expressly reserve their respective rights with respect to such further action.

12. That Southern Wood shall arrange with the owners of the property, City of Wilmington and the State Port Authority, to provide the notice in the deed that the land has been used for hazardous waste as required by 40 CFR 265.120 codified at 10 NCAC 10 F .0033.
13. That Southern Wood shall complete the clean-up remedial steps authorized in the Consent Order and the Plan in paragraph 7(f) & (g) by November 1, 1985, and shall also commence land treatment of contaminated soil from areas a, b, c, d, and e as described in paragraph 7 by November 1, 1985.
14. The scope of the State's overview shall consist of the following:
  - a. The option to inspect the work performed and to collect and perform analysis of waste and soil samples upon any phase completion.
  - b. A comprehensive site inspection and record review after June 1, 1985 to determine compliance with the approved plan and other terms of the order.
15. The Branch shall designate Mr. William Paige, Environmental Engineer, as the primary contact for technical matters concerning the implementation of the plan. Mr. Jerry Rhodes, Environmental Chemist, will be available upon Mr. Paige's absence. Other Branch resources may be used for review and inspection as determined by Mr. Paige or Mr. Rhodes.
16. Southern Wood will designate one person as the primary contact for technical matters concerning implementation of the plan.

IN WITNESS WHEREOF, the parties have executed this Agreement, on this  
the 20th day of May, 1985, by their duly authorized  
representatives.

Solid and Hazardous Waste Management  
Branch, Environmental Health Section  
Division of Health Services  
Department of Human Resources of the  
State of North Carolina

By:

William L Meyer  
William L. Meyer, Head

Southern Wood Piedmont Company

By:

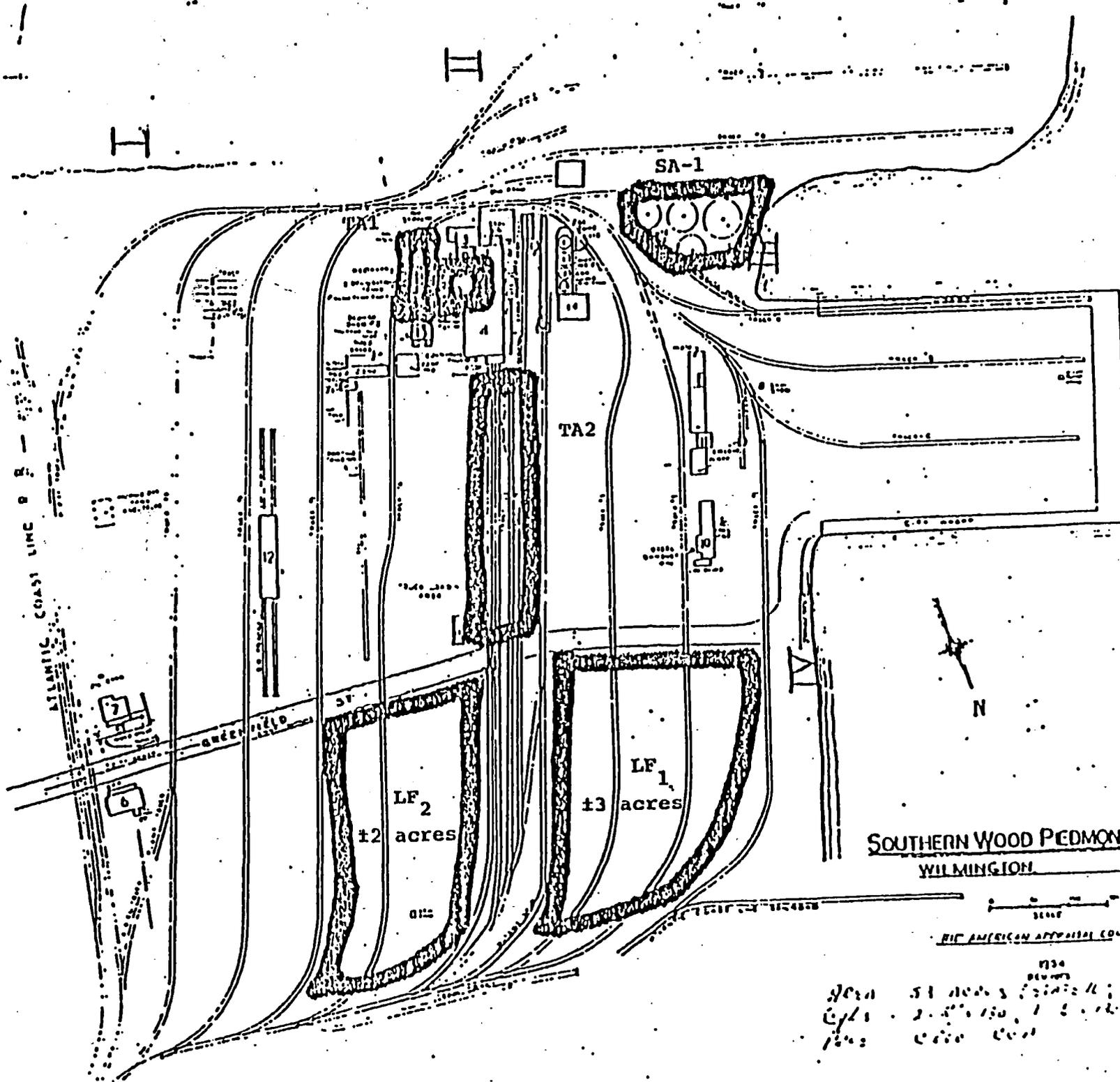
Timothy H. Brannon  
Vice President and Chief Operator

DEPOSITS REPORTED UNDER SUPERFUND

1. Superfund Area I, Covered Sludge Ditch  
An area described as a covered ditch containing creosote sludges from early plant operations. The location is on property leased from the State's Port Authority.
2. Superfund Area II, Trash Dump Area  
An area described as a general waste landfill used by the plant for many years. It is believed to consist almost exclusively of wood waste, dirt, and metal waste. Small amounts of creosote cleanup material may also have been deposited here.
3. Superfund Area III, Dike Area  
An area containing old, hard and solid creosote residuals similar to road tar were disposed of in an area near the south slip.
4. Superfund Area IV, Trash Fill Area  
Located in the north slip, this area was filled with mill waste consisting of mainly wood waste and metal bands. Some creosote sludge was deposited on the top of part of this area.

OPERATING AREA DEPOSITS

1. Track Area  
An area located in front of a treatment cylinder. Residual samples collected by Southern Wood suggest contamination to a depth of approximately six (6) inches.
2. Oil Treating Areas  
The soil areas around both oil treating room buildings contain treating chemical residuals. Soil around the working tanks is noticeably contaminated with oil to a depth of approximately two feet. The soil area around the waste water-oil recovered tank system is noticeably discolored to about a one foot depth.
3. Large Storage Tank Containment Area  
The soil in this area contains creosote residuals to a depth of approximately one foot.
4. Treated Product Storage Areas  
Relatively large areas on both State Port Authority property and City of Wilmington property contain creosote residuals in the soil as evidenced by some discoloration. These are areas where the treated poles were stored prior to shipment.
5. CCA Storage Tank Area  
Soil around the CCA storage tanks is discolored due to CCA residuals.
6. Storage Tank Sludges  
Varying amounts of sludge is present in the bottom of the various treating tanks.



YES:  
 S. Eg. Tank Area  
 TA=Treating Areas  
 LF=Landfarming Areas  
 LF<sub>1</sub> =±3 acres  
 LF<sub>2</sub> =±2 acres

SOUTHERN WOOD PIEDMONT  
 WILMINGTON

RIC AMERICAN APPRAISAL CO.

Area 51 acres  
 City 2.5' x 150' x 100'  
 100' x 100' x 100'



North Carolina Department of Human Resources  
Division of Health Services  
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor  
Phillip J. Kirk, Jr., Secretary

Ronald H. Levine, M.D., M.P.H.  
State Health Director  
919/733-3446

RECEIVED

MAY 8 1985

WILMINGTON REGIONAL OFFICE  
DEM

May 3, 1985

Mr. Charles A. Burdell  
Southern Wood Piedmont Company  
PO Box 5447  
Spartanburg, SC 29304

Dear Mr. Burdell:

Attached please find correspondence from Mr. Rick Shiver which suggested location for groundwater monitoring wells. Our Branch concurs with his proposed location. The upgradient well should be located far enough away from the treatment area so that it will not be impacted.

As stated in previous correspondence, please adhere to the groundwater well standards set by the Division of Environment Management.

Sincerely,

A handwritten signature in cursive script, appearing to read "William Paige".

William Paige

WP/pes

cc: Anne Allen  
Doug Holyfield  
Gary Babb  
Rick Shiver  
Roger H. Watts



State of North Carolina  
Department of Natural Resources and Community Development  
512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor

S. Thomas Rhodes, Secretary  
DIVISION OF ENVIRONMENTAL MANAGEMENT

February 28, 1985

Mr. William Paige, Environmental Engineer  
DHR-DHS-EHS  
Solid and Hazardous Waste Management Branch  
Post Office Box 2091  
Raleigh, North Carolina 27602-2091

Subject: Review of Groundwater Monitoring Proposal  
Southern Wood Piedmont  
Wilmington  
New Hanover County

Dear William:

Per our telephone conversation on 2-27-85, attached is Figure 1 which shows where I think the monitoring stations should be located.

Thanks for the opportunity to review Southern Wood Piedmont's proposal.

Sincerely,

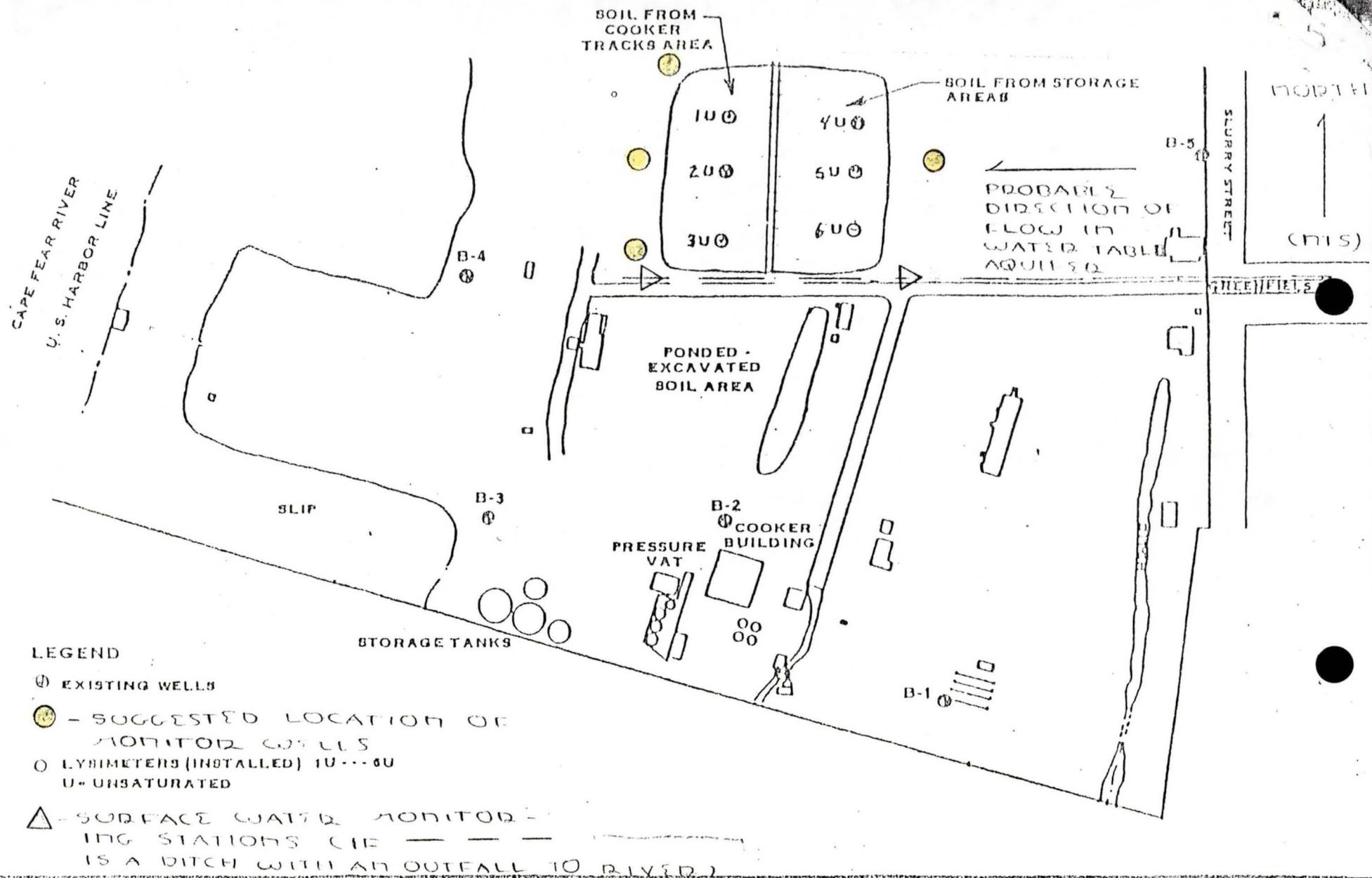
*RICK SHIVER*

Rick Shiver  
Regional Hydrologist

RS/sf

Attachment

cc: Lee Laymon  
Rick Shiver



**LEGEND**

- ⊙ EXISTING WELLS
- - SUGGESTED LOCATION OF MONITOR WELLS
- LYBIMETERS (INSTALLED) 1U --- 6U  
U - UNSATURATED
- △ - SURFACE WATER MONITORING STATIONS (IF --- IS A DITCH WITH AN OUTFALL TO RIVER)

SOUTHERN WOOD PIEDMONT  
WILMINGTON, NORTH CAROLINA



LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

FIGURE 1: SKETCH THAT SHOWS WHERE GROUND WATER SECTION, WILDO, THINKS MONITORING STATIONS SHOULD BE LOCATED.

DIVISION OF ENVIRONMENTAL MANAGEMENT

February 28, 1985

Mr. William Paige, Environmental Engineer  
DHR-DHS-EHS  
Solid and Hazardous Waste Management Branch  
Post Office Box 2091  
Raleigh, North Carolina 27602-2091

Subject: Review of Groundwater Monitoring Proposal  
Southern Wood Piedmont  
Wilmington  
New Hanover County

Dear William:

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Thanks for the opportunity to review Southern Wood Piedmont's proposal.

Sincerely,

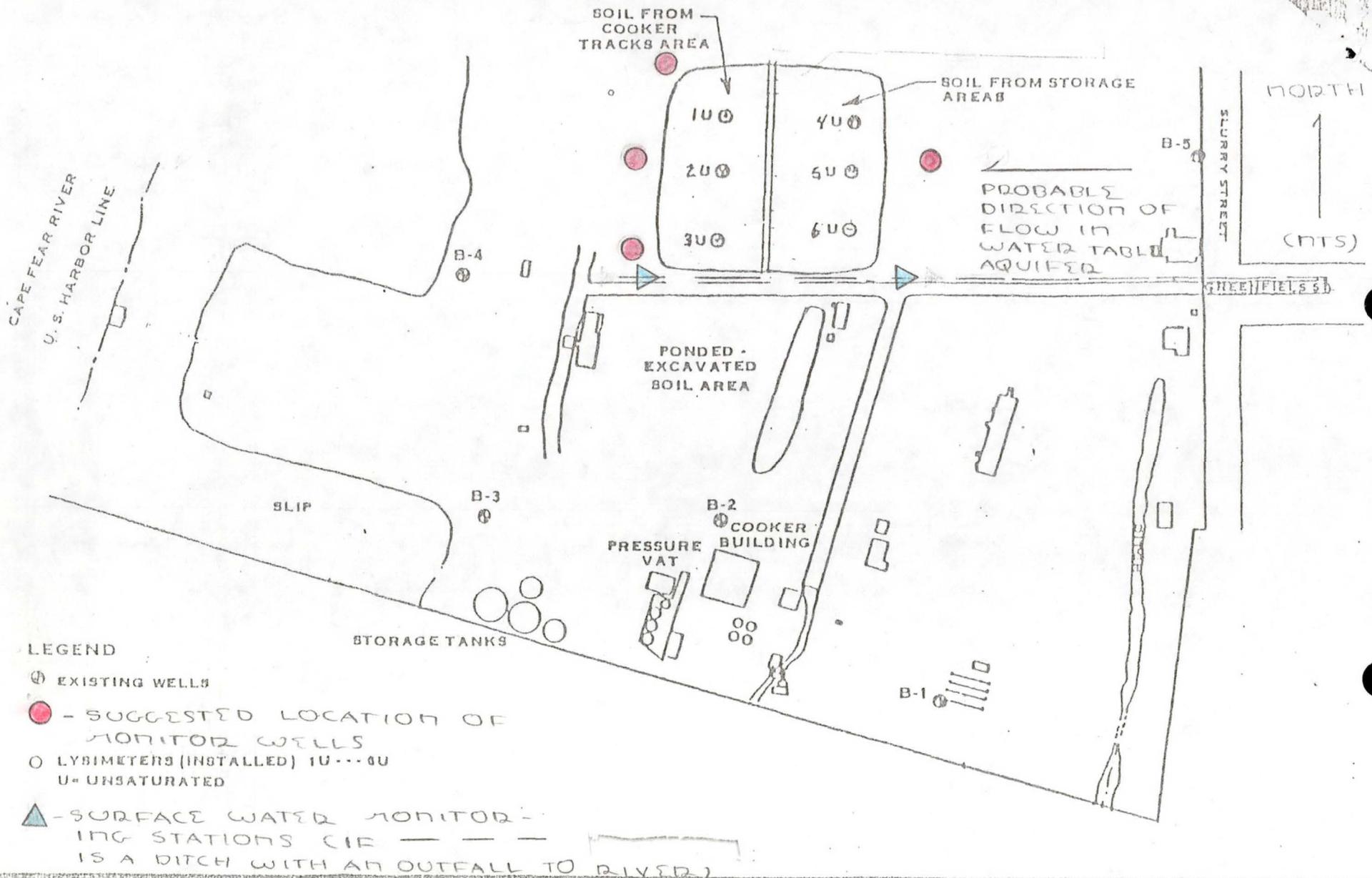
RS

Rick Shiver  
Regional Hydrologist

RS/sf

Attachment

cc: Lee Laymon  
Rick Shiver



SOUTHERN WOOD PIEDMONT  
WILMINGTON, NORTH CAROLINA



LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

FIGURE 1: SKETCH THAT SHOWS WHERE GROUND-WATER SECTION, W120, THINKS MONITORING STATIONS SHOULD BE LOCATED.



North Carolina Department of Human Resources  
Division of Health Services  
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor  
Phillip J. Kirk, Jr., Secretary

Ronald H. Levine, M.D., M.P.H.  
State Health Director  
919/733-3446

February 21, 1985

Mr. Rick Shiver  
Division of Environmental  
Management  
7225 Wrightsville Avenue  
Wilmington, N.C. 28403

Dear Rick:

Enclosed is a copy of Law Engineering Test Company's letter to Burdell which contains the proposed well location. Please comment by February 28, 1985 in writing.

Will be glad to keep you posted and thank you for your assistance on this.

Sincerely,

A handwritten signature in red ink, appearing to read "William Paige".

William Paige, Environmental Engineer  
Solid & Hazardous Waste Management Branch  
Environmental Health Section

WP:lp

**RECEIVED**  
FEB 25 1985  
WILMINGTON REGIONAL OFFICE  
DEM

**LAW ENGINEERING TESTING COMPANY**  
geotechnical, environmental & construction materials consultants  
2749 DELK ROAD, S.E.  
MARIETTA, GEORGIA 30067  
(404) 952-9005

11/11/07

August 31, 1984

Southern Wood Piedmont Company  
P. O. Box 5447  
Spartanburg, South Carolina 29301

Attention: Mr. Charles A. Burdell

Subject: Confirmation of Site Specific Field Services  
SWP Wilmington Plant  
Law Engineering Proposal No. MS4026.61 and  
Project No. MH2345

Dear Mr. Burdell:

A proposal for specific field services at the Wilmington Plant has recently been requested by Mr. C. A. Burdell. These field services include installation of four ground water monitoring wells to monitor the ground water quality upgradient and down-gradient at the compliance point for the new landfarming area. Type III wells (See Figure 1) are proposed due to the installation depths (dictated by the shallow ground water aquifer) and the possibility of cross contamination from the near surface soils during drilling.

Three wells are required for the downgradient monitoring and we believe one well upgradient immediately adjacent to the landfarm is necessary (See Figure 2). The exact location of the wells would be determined on-site by a Law Engineering professional. The possibility exists for using an existing well upgradient for background water quality purposes. This is not recommended since none of the existing wells are positioned to allow sampling true upgradient ground water subsequently flowing directly beneath the landfarm. A more favorable statistical analysis between up and down gradient water quality is anticipated for a newly installed well directly upgradient from the landfarming area.

Repair of the one broken lysimeter and collection of additional unsaturated soil moisture samples in the landfarming area could be accomplished at the time of the monitoring wells installation.

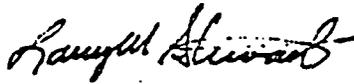
CC: ELB  
SRC  
EFB

Mr. Charles A. Purdell  
August 31, 1984  
Page Two

The estimated budget for the drilling services at Wilmington is \$3200. Associated engineering services is estimated at \$2000. The invoices will be based on services actually performed and according to the attached Unit Fee Schedule. All work including associated consultation will be performed according to the attached General Conditions. We would request that the purchase order reference the attached General Conditions and that the attached Proposal Acceptance Sheet be executed giving us continued authorization and specific billing instructions for this field work.

Very truly yours,

LAW ENGINEERING TESTING COMPANY



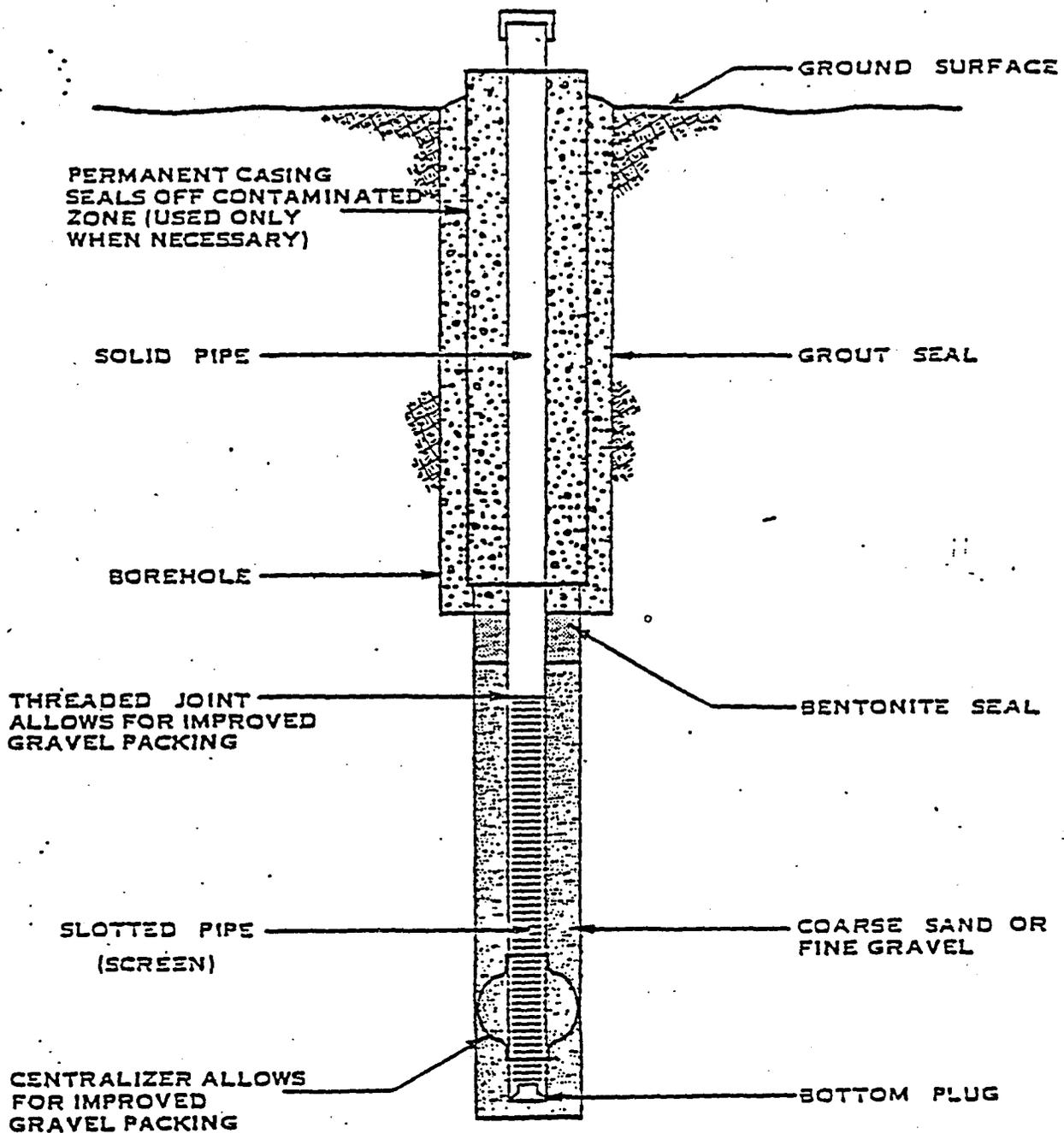
Larry W. Stewart, Ph. D.  
Land Treatment Specialist



for Donald G. Miller, Jr., P. E., P. G.  
Corporate Consultant

ld





(NOT TO SCALE)

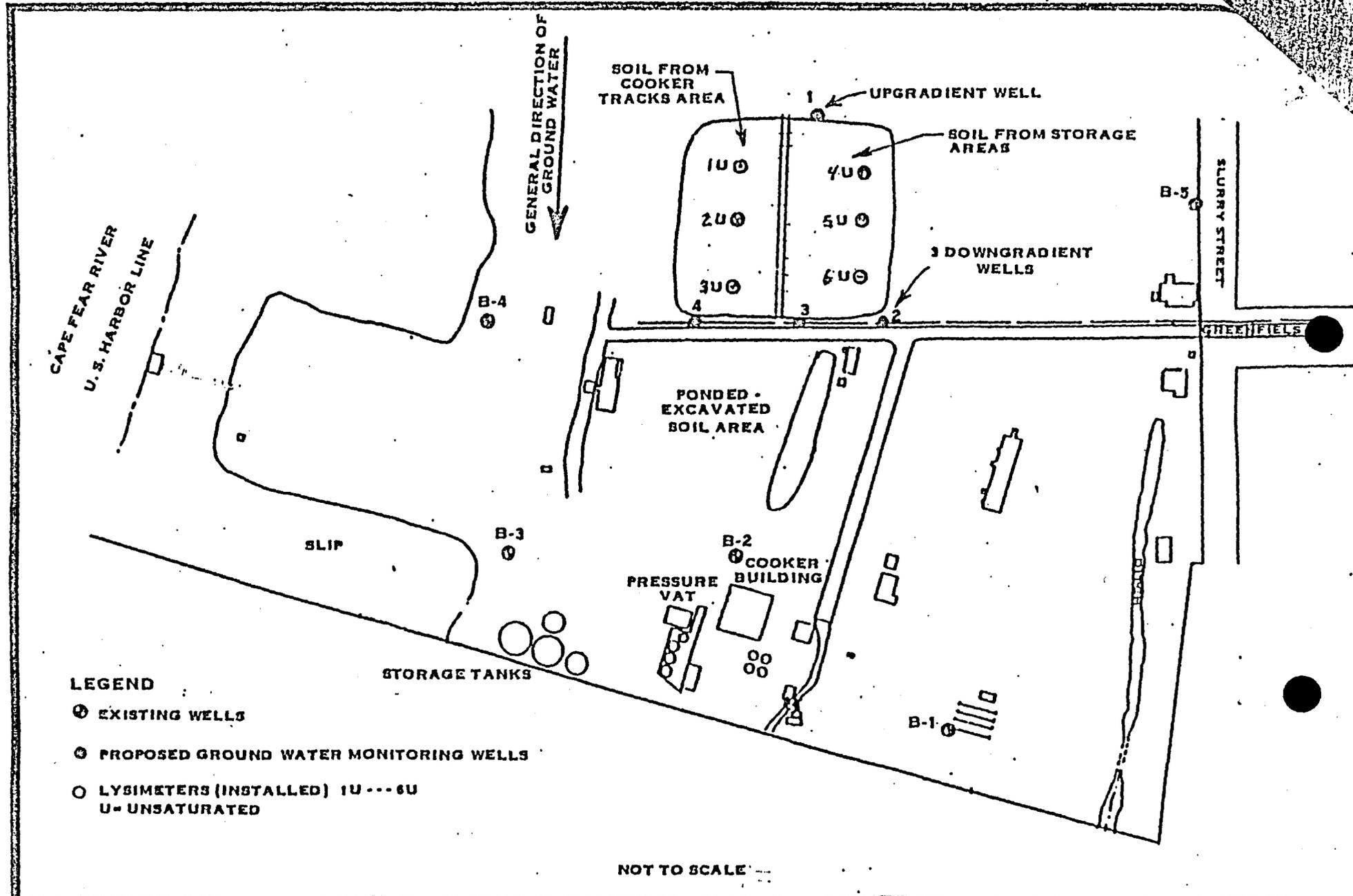


LAW ENGINEERING TESTING  
COMPANY

MARIETTA, GEORGIA

TYPE III  
WATER QUALITY  
MONITORING WELL

FIGURE 1



SOUTHERN WOOD PIEDMONT  
WILMINGTON, NORTH CAROLINA



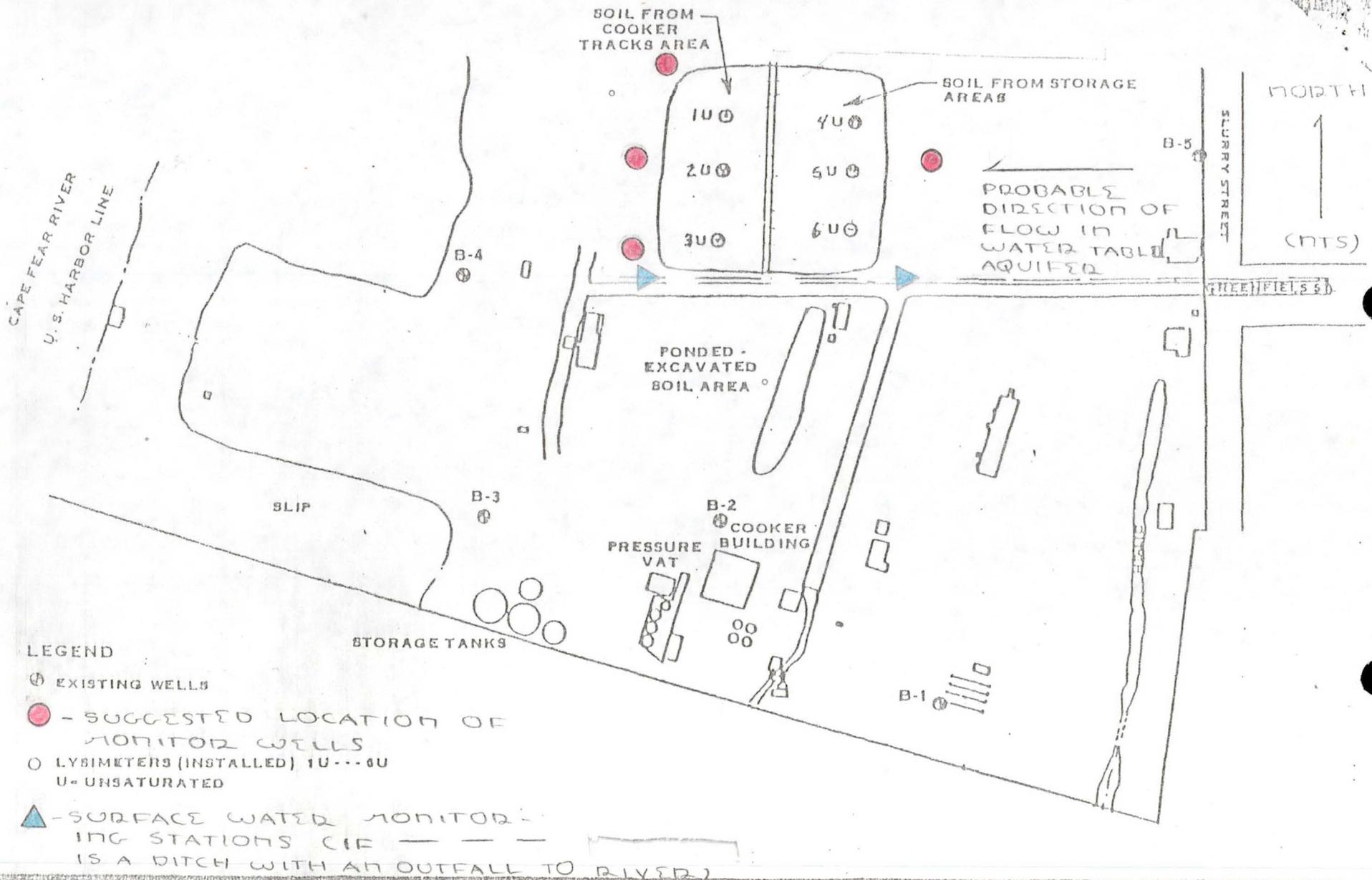
LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

LAND FARMING AREA -  
DITCHED AND BERMED

JOB NO. MH2345

FIGU



SOUTHERN WOOD PIEDMONT  
WILMINGTON, NORTH CAROLINA

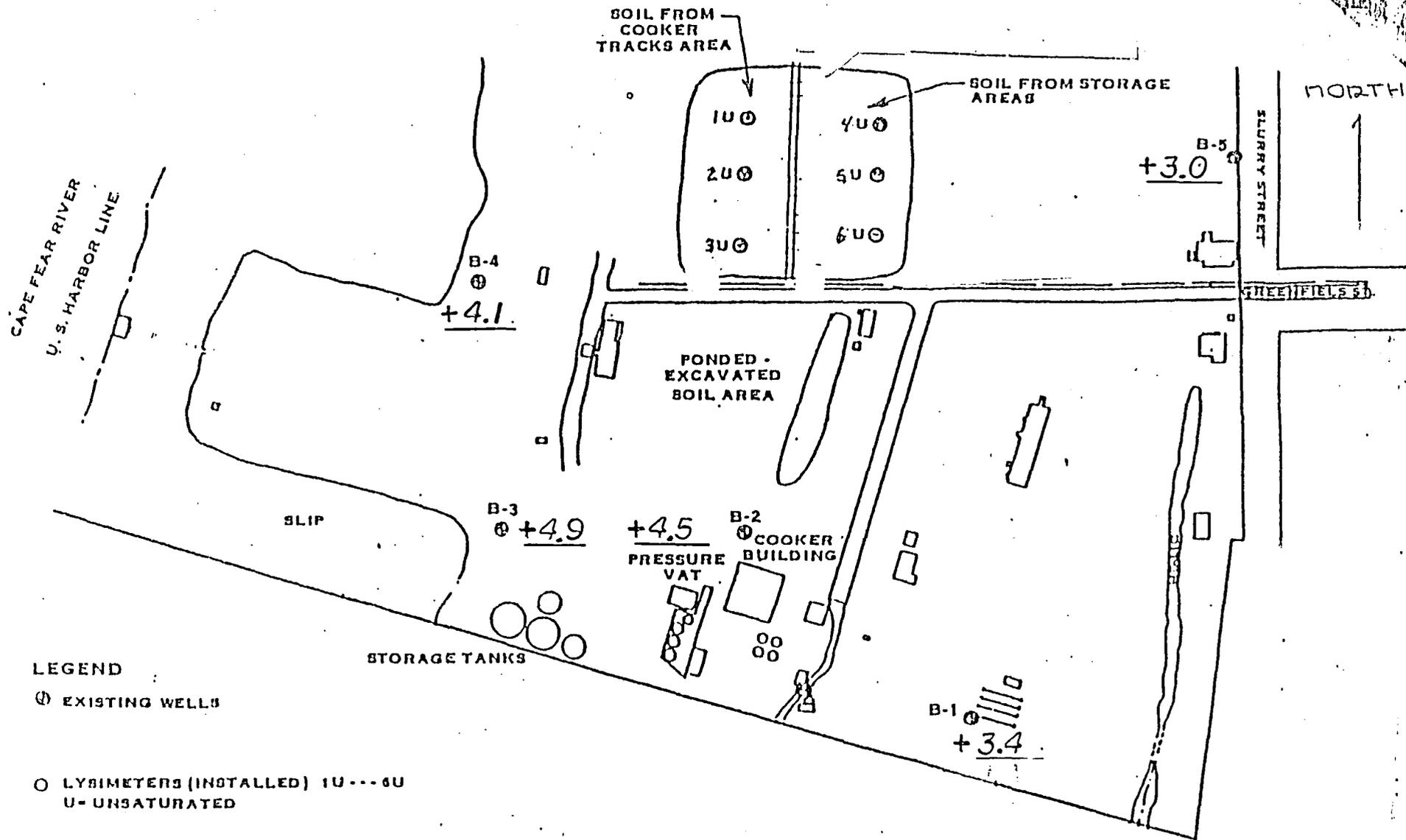


LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

FIGURE 1: SKETCH THAT SHOWS WHERE GROUND-WATER SECTION, W/RO, THINKS MONITORING STATIONS SHOULD BE LOCATED.





NOT TO SCALE

SOUTHERN WOOD PIEDMONT  
WILMINGTON, NORTH CAROLINA



LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

POTENTIOMETRIC  
POINTS PLOTTED FROM  
DATA ON GW-15 SUB-  
MITTED BY SAE

William  
Paige



Ronald H. Levine, M.D., M.P.H.  
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES  
P.O. Box 2091  
Raleigh, N.C. 27602-2091

RECEIVED

OCT 19 1984

WILMINGTON REGIONAL OFFICE  
DEM

October 17, 1984

Mr. Rick Shiver  
Division of Environmental  
Management  
7225 Wrightsville Avenue  
Wilmington, N.C. 28403

Dear Rick:

Enclosed is a copy of Burdell's September 21, 1984 correspondence and the recent proposed Administrative Order of Consent. Your comments and recommendation are encouraged. Please notify me in writing of your comments as soon as possible.

Sincerely,

William Paige, Environmental Engineer  
Solid & Hazardous Waste Management Branch  
Environmental Health Section

WP:lp

10-24-84: DEN CLEARLY PERMITS LANDFILL.



P. O. Box 5447  
Spartanburg, S. C. 29304

Phone 803/576-7660



## Southern Wood Piedmont Company

September 21, 1984

Mr. William Paige  
Solid and Hazardous Waste  
Management Broad  
N. C. Department of Human Resources  
Box 2091  
Raleigh, N.C. 27602

Dear Mr. Paige:

In response to your letter of September 7th on or Wilmington plant site landfarming the following is given to your comments:

1. Comment: "Any additional ground water monitoring wells shall be installed in accordance with schematic enclosed".

SWP response: The proposal on installation of ground water monitoring wells from Law Engineering is attached. I have talked with Mr. Shiver on this subject and am copying him on the proposal. We will talk further after he has seen the attached. Please review the Law well design. If it does not meet your requirements in some respect, we will make adjustments in the design.

2. Comment: "The soil and water samples collected at the site shall be done in accordance with an approved sampling plan."

SWP response: We believe that our letter of July 31 page 7 and 8 on landfarming procedures, contains further additional details of 8b. Samples are taken with a clean post hole digger at the four locations in each of the two areas (total 24 (4x2x3)). The samples from each area at each level are placed in a clean bucket and composited into a representative sample for the two areas. The dirt inbetween the three depth levels is carefully set aside and not put into the sample. The frequency of sampling was: (1) before addition of contaminates to the soil (2) immediately after adding contaminate to the soil and tilling. An attempt was made to sample weekly during the first month but due to rain and "Hurricane Diana" only one sample was taken. We will attempt to sample at two, four and six months after startup date. Weather sometimes interrupts exact schedules but as near as possible the above times of compliance will be done.

Samples are placed into clean plastic ziplock type bags and labeled, dated, location and depth of sample noted. The sample locations are marked with wood sticks or pipes to get the same location on each sampling. Sampling and analysis frequency will be according to our July 31 letter.

3. Comment: "Submit data on analysis".

SWP response: The first set of GC/MS data is attached.

I have discussed with Dr. McGinnis your questions on phenol. Phenols were not run on the GC/MS as it was not requested as it is not a large percentage compound in creosote. A phenol will be run on the next sample for our information. An acid extraction procedure is required in the analysis protocol. The total phenol water extraction, our laboratory is running, covers more than phenol, according to Dr. McGinnis. The Standard Method test may pick up other phenol not necessarily from creosote. The toluene extraction data is included. On both the toluene and phenol extractions we plan to run spiked samples to see if we can qualify % recovery and whether the test are really indicative to what we are seeking.

I would be interested to know what references your toxicologist will review on the allowable levels of residuals. How will the study be approached? Will a risk-benefit issue be considered in his judgement.

Sincerely,  
Southern Wood Piedmont



Charles A. Burdell  
Technical Service Director

CAB/dm

CC: E. F. Button  
E. L. Gibbs  
S. R. Crabbe  
D. Miller  
H. O. Phillips

## GC/MS ANALYSIS BY MSU

WILMINGTON, NORTH CAROLINA LANDFARMING

SWP WATER SAMPLES RECEIVED 8/10/84

SAMPLE AREA	INITIAL PREFARM	RIVER AREA	OFFICE AREA				
SAMPLE I.D.	10	40	50	Limit of Detection	Limit of Quantitation	Recover Level	% Recovery
Date Sampled	6-27-84	7-17-84	7-17-84				
-----Component Concentration in Water (micrograms ppm/gram--dry weight)-----							
NAPHTHALENE	---	---	---	0.0083	0.028	0.100	83
2-METHYLNAPHTHALENE	---	---	---	0.0089	0.029	0.039	92
1-METHYLNAPHTHALENE	---	---	---	0.0066	0.022	0.030	92
BIPHENYL	---	---	---	0.0220	0.055	0.034	75
ACENAPHTHYLENE	---	---	---	0.0080	0.023	0.026	85
ACENAPHTHENE	*	---	---	0.0059	0.022	0.024	87
DIBENZOFURAN	---	---	---	0.0077	0.026	0.021	79
FLUORENE	---	---	---	0.0054	0.016	0.024	76
PHENANTHRENE	---	---	---	0.0100	0.029	0.024	89
ANTHRACENE	---	---	---	0.0080	0.026	0.025	87
CARBAZOLE	---	---	---	0.0190	0.061	0.038	81
FLUORANTHENE	---	---	---	0.0081	0.030	0.025	90
PYRENE	---	---	---	0.0086	0.030	0.028	95
CHRYSENE	---	---	---	0.0130	0.045	0.024	91
PENTACHLOROPHENOL	0.97	0.00027	0.0023	0.00028	0.00092	0.0083	85

--- Not detected

\* Detected but not quantitated

Note: Limits of detection and quantitation are based on 500 ml samples.

L.O.D. = 3 x "background," L.O.Q. = 10 x "background," where "background" is defined as instrument "noise" or water blank levels; whichever is greater.

ANALYSIS BY SOUTHERN WOOD PIEDMONT LABORATORY  
 S. B. Watson, Analyst  
 WILMINGTON, NORTH CAROLINA LANDFARM PROJECT

DATE SAMPLED	AREA	DEPTH INCHES	TOTAL PHENOL ppm	TOLUENE EXTRACTION * % Oil	Ph
6-27-84	Total Landfarm Area before Soil addition	0-12"	0.56	0.61	7.29
		12-20"	0.33	2.04	4.68
		20-26"	0.08	1.95	5.37
7-10-84	Area I River Area Track Soil Added	0-3"	4.67	0.75	6.70
		9-12"	0.73	0.00	5.66
		21-24"	0.19	1.09	6.16
7-10-84	Area I Office Area Treating Room Soil Added	0-3"	0.43	0.71	7.12
		9-12"	0.20	0.00	7.00
		21-24"	0.32	0.00	6.33
8-10-84	Area I River Area	0-3"	2.47	1.96	7.12
		9-12"	0.48	0.51	7.00
		21-24"	0.55	0.67	6.33

\* Dry Basis

## GC/MS ANALYSIS BY MSU

WILMINGTON, NORTH CAROLINA LANDFARMING

SWP SOIL SAMPLES RECEIVED 8/10/84

SAMPLE AREA	INITIAL PREFARM			RIVER AREA			OFFICE AREA			Limit of Detection	Limit of Quantitation	Recover Level	% Recovery
	A	B	C	D	E	F	G	H	I				
Depth Sampled	0-12"	12-10"	20-26"	0-3"	4-12"	21-24"	0-3"	9-12"	21-24"				
Date Sampled	6-27-84			7-17-84			7-17-84						
-----Component Concentration in Soil (micrograms ppm/gram--dry weight)-----													
NAPHTHALENE	---	---	---	*	---	---	*	*	---	1.5	4.9	511	94.9
2-METHYLNAPHTHALENE	---	---	---	*	---	---	*	*	---	1.6	5.5	197	97.1
1-METHYLNAPHTHALENE	---	---	---	*	---	---	*	*	---	1.4	4.8	150	96.7
BIPHENYL	---	---	---	---	---	---	---	---	---	3.8	13.0	170	97.2
ACENAPHTHYLENE	---	---	---	*	---	*	---	---	---	1.6	5.2	128	97.1
ACENAPHTHENE	---	---	---	53	---	---	11.0	---	---	1.5	4.9	122	97.9
DIBENZOFURAN	---	---	---	15	---	---	7.3	---	---	1.9	6.2	105	102.0
FLUORENE	*	---	---	56	*	---	20.0	---	---	1.6	5.4	122	98.7
PHENANTHRENE	*	*	---	170	17.0	---	57.0	12	---	1.8	6.0	122	107.0
ANTHRACENE	*	*	---	100	11.0	---	41.0	14	---	1.8	5.9	123	107.0
CARBAZOLE	---	---	---	9.6	---	---	*	---	---	2.8	9.3	193	100.0
FLUORANTHENE	16	13.0	---	350.0	40.0	*	84.0	15	*	1.8	6.0	127	107.0
PYRENE	17	9.9	---	240.0	18.0	*	49.0	13	*	1.8	5.9	139	107.0
CHRYSENE	11	13.0	---	79.0	9.8	*	23.0	16	*	2.3	7.7	120	119.0
PENTACHLOROPHENOL	1.2	0.60	0.13	63.0	6.4	0.58	2.3	0.60	0.11	0.0089	0.030	41	79.0

--- Not detected

\* Detected but not quantitated

Limits of detection and quantitation are based on 10g samples (dry weight).

L.O.D. = 3 x "background," L.O.Q. = 10 x "background," where "background" is defined as instrument "noise" or blank levels; whichever is greater.

*Draft*  
*10/20/84*

N. C. DEPARTMENT OF HUMAN RESOURCES

SOLID & HAZARDOUS WASTE MANAGEMENT BRANCH

In Re:	)	
SOUTHERN WOOD PIEDMONT COMPANY	)	ADMINISTRATIVE ORDER
NCD058517467	)	ON CONSENT
	)	

BACKGROUND

From about 1964 to 1983, Southern Wood Piedmont Company (Southern Wood), a subsidiary of ITT Rayonier, Inc., a \_\_\_\_\_ corporation, owned and operated a plant in Wilmington, North Carolina, which engaged in the business of wood preserving. The preservatives used were creosote coal tar, pentachlorophenol in diesel oil and copper, chromate and arsenate (known as CCA). As part of that operation, residues were deposited in several locations on the plant site. The areas, identified in Southern Wood's February 13, 1983 correspondence to Mr. William Paige, Environmental Engineer, are summarized in Attachment I and shown in the map <sup>in</sup> ~~attached~~ <sup>part II</sup> ~~therein~~.

AGREEMENT

In order to resolve a dispute regarding the applicability of the Resource Conservation and Recovery Act (RCRA) and the Solid Waste Management Act and rules (N.C.G.S. 130-A, Article 9 and 10 NCAC 10F), and to avoid costly protracted litigation, Southern Wood and the State do hereby enter into this Administrative Order on Consent (Consent Order).

The purpose of this Order is to address soil and ground water contamination and to provide clean-up/remedial actions which will minimize the site's impact on the environment and public health in a manner which is consistent with the State and Federal hazardous waste laws and rules.

Therefore, in order to further the public interest and to protect the public health and environment, Southern Wood Piedmont and the State, by and through their authorized representatives, do enter into the following Consent Order and agree:

1. That Southern Wood Piedmont is a \_\_\_\_\_ corporation, doing business in North Carolina at \_\_\_\_\_.

2. That, to protect the public health and environment, the Solid and Hazardous Waste Management Branch, Environmental Health Section, Department of Human Resources of the State of North Carolina (State) is empowered to implement and seek compliance with the standards for generation, transportation, treatment, storage and disposal of waste pursuant to the Solid Waste Management Act, N.C.G.S. Chapter 130-A (Act), and the rules promulgated thereunder at 40 CFR 260-271, codified at 10 NCAC 10F (rules). O.W. Strickland, Head of the Branch, has been delegated those responsibilities.

3. This Consent Order shall apply and be binding upon the officers, directors, agents, employees, contractors, successors and assigns of Southern Wood Piedmont and upon all persons or firms acting under or for them. Southern Wood Piedmont shall provide a copy of this Consent Order to each contractor or other person performing any work under this Order and shall condition each contract or agreement for such work upon these Consent Order terms.

4. That nothing in this Consent Order shall be construed as limiting the State of North Carolina from performing its duty to protect the public health and the environment of the State as required by law.

5. That nothing herein shall be construed to affect any rights, claims or defenses as may exist between Southern Wood Piedmont and any other person or entity.

6. That the State will suspend the Compliance Order and Notice of Penalty, dated September 7, 1984, if compliance with this Consent Order is achieved as set forth herein. If compliance with this Order is not achieved, the September 7, 1984, Order and penalty will become effective immediately upon written notice.

7. That Southern Wood shall evaluate and determine the extent if any that those sites identified as Superfund Areas I, II, III and IV have or may have on the environment and public health. The steps to be taken and a schedule for implementation should be described in a plan submitted to this agency for review. The plan should contain a milestone chart showing target dates for individual phases of the project and a completion date of no later than June 1, 1985. The plan should be submitted by December 1, 1984.

8. That Southern Wood shall continue with the ongoing remedial action being implemented in the operating areas. This action currently consists of land treatment to reduce the oil preservative residuals in contaminated soil to an acceptable residual level. The land treatment shall be conducted on treated pole storage areas where there are presently low levels of preservative residuals in the soil.

The contaminated areas described earlier shall be addressed in the manner described below:

a. Superfund Area I

Excavate this area and landfarm the discolored soil in one of the treated pole storage areas.

b. Track Area

Remove the visually, heavily contaminated soil and landfarm in a treated pole storage area.

c. Oil Treating Areas

Remove the visually, heavily contaminated soil and landfarm in a treated pole storage area.

d. Large Storage Tank Containment Area

Remove the visually, heavily contaminated soil and landfarm in a treated pole storage area.

e. Treated Product Storage Area

The treated pole storage areas not used for landfarming of heavily contaminated soil shall be tilled in place.

f. CCA Storage Tank Area

Remove all soil containing CCA salts above 10 times (10 x) drinking water standards, as determined by the EPA EP toxicity tests, for disposal in a State approved hazardous waste landfill that has no outstanding Class I RCRA violations.

g. Storage Tank Sludges

Remove the CCA sludge for disposal in a hazardous waste landfill. Remove the sludges from the bottom of the various oil tanks for disposal or energy recovery in a State approved landfill, incinerator, or boiler that has no outstanding Class I RCRA violations..

9. That Southern Wood shall adhere to the following land treatment procedures:

- a. The landfarming will be done in an area identified as LF1 or LF2, or both, if needed, as outlined on the plant layout diagram (Attachment II).
  - b. The designated landfarm areas will be bermed and ditched to prevent rain runoff or runoff.
  - c. Lysimeters will be installed at depths sufficient to monitor soil water quality. These lysimeters shall be protected to prevent damage by tilling equipment. Monitoring wells shall be installed to monitor groundwater quality. Groundwater monitoring devices shall be in accordance with the standards established by the Division of Environmental Management.
  - d. Contaminated soil from the areas identified earlier shall be spread not to exceed a maximum two-inch layer over the landfarm area. Land treatment shall be limited to the upper six inches.
  - e. The application of a commercial fertilizer shall be determined based upon soil analysis.
  - f. The soil will be tilled weekly, weather permitting, to promote biological and photochemical breakdown of treating chemical residuals.
  - g. Tillage and aeration of the land treatment areas shall continue until residual concentrations are determined not to have a significant impact on the public health and the environment.
10. That Southern Wood shall adhere to the following sampling and testing schedule:
- a. Lysimeters will be sampled prior to application of contaminated soil to the landfarm areas, and every two months thereafter.

- b. Soil will be sampled immediately after the initial tilling is completed. Samples will be obtained at 0-3", 9-12", and 21-24" depths. The soil sampling will be in accordance with SW 846.
- c. All samples (soil, water) will be analyzed for PCP and the major constituents of creosote.
- d. The sample results shall be submitted to this agency within 7 days after analysis.

11. That Southern Wood shall address remedial actions on the groundwater contamination in accordance with Chapter 143, Articles 21, 21A, and Chapter 87, Article 7 of the North Carolina General Statutes and 15 NCAC 2C, 2E, and 2L as administered by the Department of Natural Resources and Community Development.

12. That Southern Wood shall complete the clean-up/remedial steps authorized in the Consent Order and the Plan in paragraph 7, on or before June 1, 1985

13. The scope of the State's overview shall consist of the following:

- a. The option to inspect the work performed and to collect and perform analysis of waste and soil samples upon any phase completion.
- b. A comprehensive site inspection and record review after June 1, 1985 to determine compliance with the approved plan and other terms of the order.

14. The Branch shall designate Mr. William Paige, Environmental Engineer, as the primary contact for technical matters concerning the implementation of the plan. Mr. Jerry Rhodes, Environmental Chemist, will be available upon Mr. Paige's absence. Other Branch resources may be used for review and inspection, as determined by Mr. Paige or Mr. Rhodes.

15. Southern Wood will designate one person as the primary contact for technical matters concerning implementation of the plan.

IN WITNESS WHEREOF, the parties have executed this Agreement, on this the \_\_\_\_\_ day of \_\_\_\_\_, 1984, by their duly authorized representatives.

Solid and Hazardous Waste Management  
Branch, Environmental Health Section  
Division of Health Services  
Department of Human Resources of the  
State of North Carolina

By:

\_\_\_\_\_  
O. W. Strickland, Head

Southern Wood Piedmont

By:

\_\_\_\_\_  
\_\_\_\_\_

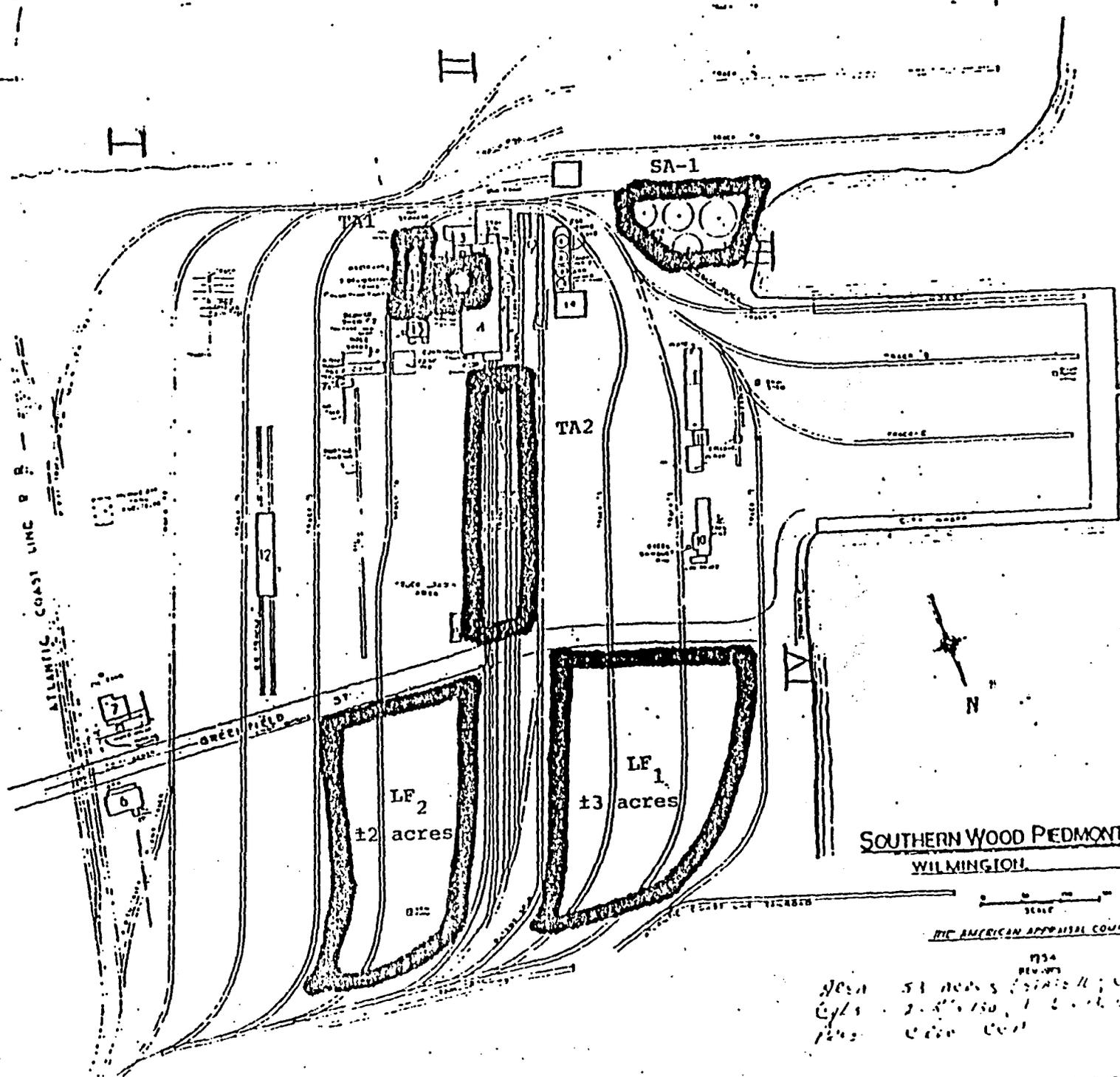
ATTACHMENT I

DEPOSITS REPORTED UNDER SUPERFUND

1. Superfund Area I, Covered Sludge Ditch  
An area described as a covered ditch containing creosote sludges from early plant operations. The location is on property leased from the State's Port Authority.
2. Superfund Area II, Trash Dump Area  
An area described as a general waste landfill used by the plant for many years. It is believed to consist almost exclusively of wood waste, dirt, and metal waste. Small amounts of creosote cleanup material may also have been deposited here.
3. Superfund Area III, Dike Area  
An area containing old, hard and solid creosote residuals similar to road tar were disposed of in an area near the south slip.
4. Superfund Area IV, Trash Fill Area  
Located in the north slip, this area was filled with mill waste consisting of mainly wood waste and metal bands. Some creosote sludge was deposited on the top of part of this area.

OPERATING AREA DEPOSITS

1. Track Area  
An area located in front of a treatment cylinder. Residual samples collected by Southern Wood suggest contamination to a depth of approximately six (6) inches.
2. Oil Treating Areas  
The soil areas around both oil treating room buildings contain treating chemical residuals. Soil around the working tanks is noticeably contaminated with oil to a depth of approximately two feet. The soil area around the waste water-oil recovered tank system is noticeably discolored to about a one foot depth.
3. Large Storage Tank Containment Area  
The soil in this area contains creosote residuals to a depth of approximately one foot.
4. Treated Product Storage Areas  
Relatively large areas on both State Port Authority property and City of Wilmington property contain creosote residuals in the soil as evidenced by some discoloration. These are areas where the treated poles were stored prior to shipment.
5. CCA Storage Tank Area  
Soil around the CCA storage tanks is discolored due to CCA residuals.
6. Storage Tank Sludges  
Varying amounts of sludge is present in the bottom of the various treating tanks.



N A P E P E A R T M E N T

**NOTES:**  
 SA=Stg. Tank Area  
 TA=Treating Areas  
 LF=Landfarming Areas  
 LF<sub>1</sub> =±3 acres  
 LF<sub>2</sub> =±2 acres

**SOUTHERN WOOD PIEDMONT COMPANY**  
 WILMINGTON, N.C.

SCALE  
 THE AMERICAN APPRAISAL COMPANY

1954  
 1954  
 1954



*Rick Shiver*

Ronald H. Levine, M.D., M.P.H.  
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES  
P.O. Box 2091  
Raleigh, N.C. 27602-2091

September 7, 1984

**RECEIVED**

SEP 14 1984

**WILMINGTON REGIONAL OFFICE**  
**DEM**

Mr. Charles A. Burdell  
Southern Wood Piedmont Company  
P.O. Box 5447  
Spartanburg, S.C. 29304

Dear Mr. Burdell:

I have reviewed your July 31 remedial action proposal (received August 15) for the Wilmington site. The correspondence addresses concerns raised during the July 23 meeting in Wilmington along with ones outlined in my July 6 letter. The following items shall be addressed during the remedial period.

- (1) Any additional ground water monitoring wells shall be installed in accordance with the schematic enclosed. Due to hydrogeologic conditions present at the Wilmington site, a variance will probably be required from the Division of Environmental Management (DEM). You should therefore consult with Mr. Rick Shiver, a hydrologist with DEM. He is located in the Wilmington office at (919) 256-4161.
- (2) The soil and water samples collected at the site shall be done in accordance with an approved sampling plan. No such plan has been provided to the Branch. The plan shall be comprehensive (i.e., depth, method, number, location, sample container) and insure that representative samples are collected. The EPA publication SW-846 should prove useful in developing such a plan.
- (3) The data collected in accordance with item (2) shall be submitted after each sampling within ten (10) days of analysis.

Also some type of contingency plan is advised in the event that degradation to acceptable residual concentrations cannot be reached. The six (6) months proposed in your letter to achieve acceptable levels is probably not realistic based upon data available to me. As clearly stated in Wilmington, the concept of establishing acceptable residual concentrations based upon "percent (%) removal" is unacceptable. At the end of the proposed six (6) months, I will have a toxicologist review the data to assist in determining if the remaining residuals afford maximum protection to public health and the environment.

Question:

4. If landfarming is allowed, any residual levels must be approved by the North Carolina Department of Human Resources. Proposed levels shall be submitted by Southern Wood Piedmont Company.

SWP Response:

As is known there is no published criteria on "how clean is clean". In discussing this subject in regard to the oil perservatives with Dr. Gary McGinnis, Mississippi State University, and with our Rayonier Research Center in Shelton, Washington, we propose the following:

- a. That in the soil farming project as in our June 8th letter we use as basis the University of Florida study, attachment 6, which level is .475 ppm penta.
- b. For creosote components of carbon<sub>13</sub> and under a 95% removal will be achieved. For carbon<sub>14</sub> and over a 80% removal will be achieved. The higher carbon compound's solubility, volatility and migration are extremely stable. They will breakdown but at a much slower rate. Initial samples are being analyzed. As soon as we receive the results, we will estimate starting concentrations and will forward them on to you.

Toxicity data: We are reviewing the creosote information available to us. As soon as this is completed the information will be forwarded on to you for toxicological review. A number of the creosote components are listed in N. Ervin Saxs book "Dangerous Properties of Industrial Materials" published by VanNostrum.

Question:

5. Landfarming if approved, shall be limited to the upper six inches.

SWP Response:

As discussed our harrow will be turning the soil to about a 6 to 8 inch depth.

Question:

6. The application rate of a commercial fertilizer shall be determined based upon soil analysis. Analysis can be obtained free through the Department of Agriculture. For additional details, contact me.

SWP Response:

Fertilizer was applied at a rate of 200 pounds per acre of a 5, 10, 10 type. The recommended rate by Mississippi State University and EPA Ada Research is a 20 to 1 on a carbon-nitrogen ratio. An initial sample analysis for carbon-nitrogen are now being done by a commercial laboratory. Adjustment of ph was done by addition of lime at about 1 ton per acre to bring the soil to a ph of about 7.

## Question:

7. The selection of indicator parameters to monitor the degradation process shall occur prior to the implement of the plan. As noted in earlier correspondence, more detail analysis will be required at some point to determine degradation efficiency. Sampling shall be performed to determine initial concentration levels.

## SWP Response:

As covered in section 5 the indicator parameter initial and final parameter will be penta and creosote components: These are the P.N.A.'s that will be read from the GC scan - naphthalene, 2 methyl naphthalene, 1 methyl naphthalene, biphenyl, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, carbazole, fluoranthrene, pyrene, chrysene, penta. Phenol will be used as the initial, interim and final work to tract breakdowns of chemicals.

## Question:

8. Discussion with the Department of Environmental Management's ground water section suggest that a joint meeting arranged by myself should take place as soon as possible.

## SWP Response:

The suggested meeting took place at our Wilmington plant on July 23rd with you and Messrs. Reynolds, Holyfield, Marsh, Moore, H. O. Phillips, E. F. Button and myself.

During our meeting you asked for our rationale concerning the RCRA or non-RCRA nature of the material we are excavating at the former Wilmington plant site. You will readily understand that it is impossible to look back and be certain of the chemical composition of the wood preservatives that have been leaked or released at the plant site in the past. Some enabling assumptions had to be made in order to get on with the aerobic breakdown of these wood preservatives while we still had time on the lease of the plant site and while the weather was warm enough to promote rapid degradation of such residues.

Accordingly, we assumed that the oil residue on the ground, around the tanks which were used to store received creosote, was commercial grade creosote when spilled. Such residue will be sent off site for disposal. Conversely, the oil residue that was on the ground around the working tanks was not commercial grade creosote when spilled. This residue was generated by operator error, that sometimes occurred, when the cylinder was blown back to these tanks at the end of a treating cycle. If the air pressure was not shut off quickly enough the mixture of creosote water and wood sugars, remaining in the cylinder at the end of a treating cycle, would be blown out the top of the tank. The operator would then add commercial grade creosote, from storage, to the working tank before starting the treating cycle on the next charge.

In addition, leaks have occurred around the treating area when a pipe going to the cylinder would break or leak. We have assumed that such oil residue would be commercial grade creosote, and we are going to send such material gathered from under and around the cylinder off site for disposal. The same analysis holds true for Penta.

Pages 7 and 8 of our June 8th letter and attachment 8 and 9 have been updated and modified to final proposed plan. Please send us information on well permitting that Mr. Marsh said was available.

If you have any questions please advise. We will appreciate the comments.

Sincerely,  
Southern Wood Piedmont



Charles A. Burdell  
Technical Director

CAB/dm

CC: E. F. Button - Stamford  
R. H. Watts - Stamford  
S. R. Crabbe  
E. L. Gibbs  
H. O. Phillips - Wilmington

## VI. Proposed Landfarming Procedure

1. The landfarming will be done in the Area LF1 and Area LF2, outlined on the plant layout diagram (attachment 8). These areas are already lightly contaminated with treating chemical residues from many years use as treated pole storage.
2. The designated landfarm areas are bermed and ditched to prevent rain runoff or runoff.
3. Six suction vacuum lysimeters are installed at one and two foot depths to monitor soil water quality. The proposed lysimeter cluster locations are indicated on the landfarm layout diagram (Attachment 9). These lysimeter clusters will be protected by barricades to prevent damage by tilling equipment. We will install two monitoring wells immediately downgradient of the landfarm areas. We propose to utilize the existing upgradient well. A proposal showing well design and location will be submitted shortly by Law Engineering. We are convinced that these samples will demonstrate that the wood treating chemicals are breaking down, not leaching into the groundwater.
4. Contaminated soil from the areas outlined in Section V-A page 4 above; the treating cylinder track area and treating area; will be spread in a maximum two inch layer over the landfarm area. This will be at a maximum additional rate of 20% of the underlying soil when tilled to a depth of six to eight inches. From previous analysis these soils contain less than 5% creosote.
5. Nutrients will be added at an application rate of 200 lbs. per acre as commercial fertilizer (such as 8-8-8) or a 20 to 1 carbon nitrogen ratio.
6. The initial application of contaminated soil and fertilizer will be thoroughly tilled into the underlying soil to a depth of six to eight inches.
7. The soil will be tilled weekly, weather permitting, to promote biological and photochemical breakdown of treating chemical residuals.
8. Sampling and Testing Schedules

Extraction and analytical procedures are outlined in Attachment 10.

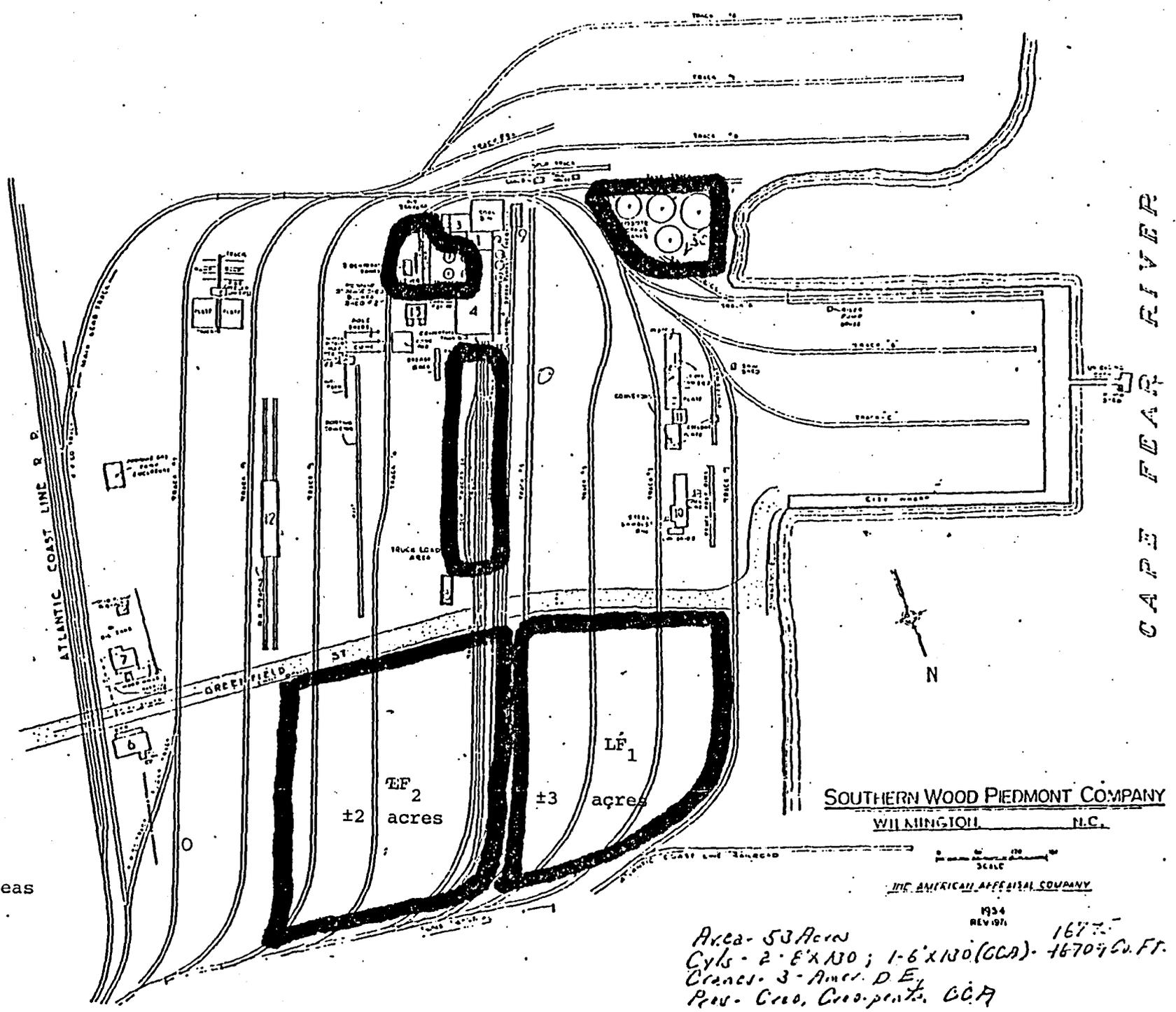
- a. Lysimeters will be sampled for soil water just prior to application of contaminated soil to the landfarm areas, and every two months thereafter. Soil water will be analyzed for total phenol content using the Standard Methods Test 222 Method and for PCP and the creosote compounds using the gas chromatograph method (G/C), EPA SW8040 through 8100.
- b. Soil will be sampled immediately after the initial tilling is completed. It will be resampled after one, two, four, and six months. Soil samples will be sampled at the points indicated on the landfarm diagram (Attachment 8). Samples will be obtained at 0-3", 9-12", and 21-24" depths. The soil samples from each of the two landfarm areas will be composited for equal depths for analysis.

- c. All samples will be analyzed for total extractable phenol. The initial samples and the four and six-month samples will be analyzed by G/C for other organics.
9. After the six month sample analysis results are available, all results will be reviewed with the North Carolina agency.

#### VII. Outline of Tilling Procedure

All lightly contaminated treated product storage areas and the soil underlying areas not utilized for landfarming where heavily contaminated soil is removed will be tilled to encourage breakdown of any residual treating chemicals that might be present. Some of the areas where soil is removed may be too wet to till due to soil moisture conditions.

1. The overlying soil will be removed for landfarming; or for offsite disposal in the case of the soil around the creosote storage tanks. No soil will be removed from the treated pole storage areas.
2. Immediately after soil removal, fertilizer will be added at the rate of 200 lbs. per acre (estimate of a ratio suggested by MSU of 20 to 1 in carbon to nitrogen), and the underlying soil will be tilled, soil moisture content permitting.
3. Tilling will be repeated weekly for the first 12 to 16 weeks, weather permitting, and will be done once per month until the six months.
4. After six months of tilling, soil samples will be obtained at 0-3", 9-12", and 21-24" depths.
5. Soil samples will be composited by depth for each major area and analyzed for organics by G/C.
6. Analytical results will be reviewed with the agency.

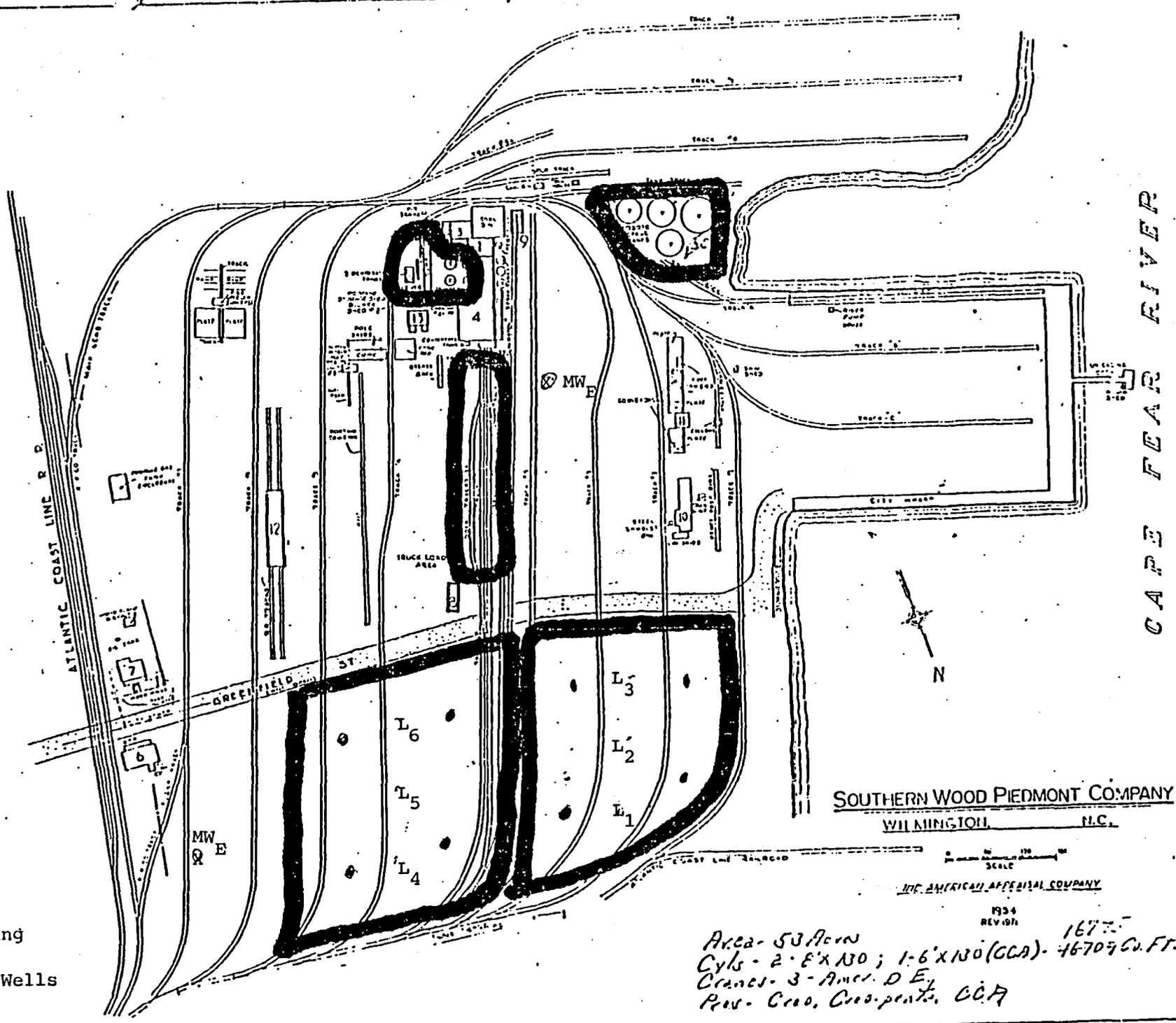


NOTES:  
 LF=Landfarming Areas  
 LF<sub>1</sub>=±3 acres  
 LF<sub>2</sub>=±2 acres

SOUTHERN WOOD PIEDMONT COMPANY  
 WILMINGTON N.C.

SCALE  
 THE AMERICAN APPRAISAL COMPANY

Area - 53 Acres  
 Cyls - 2 - 8' x 130; 1 - 6' x 130 (GCC) - 16775  
 Cranes - 3 - Amer. D.E.  
 Pans - Coo, Coo-pants, CCA



- NOTES:
- L1-6=Lysimeters
  - ⊕ =Soil Sampling Points
  - MW =Monitoring Wells
  - ⊙ =Existing

SOUTHERN WOOD PIEDMONT COMPANY  
WILMINGTON, N.C.

SCALE

THE AMERICAN APPRAISAL COMPANY

1954  
REVISION

Area - 53 Acres  
 Cyls - 2 - 8' x 130'; 1 - 6' x 130' (CCA) - 46709 Cu. Ft.  
 Cranes - 3 - Amer. D.E.  
 Piers - Ciro, Ciro-pants, CCA

C/S 6-59  
253331

CAPE FEAR RIVER

Mr. Charles A. Burdell  
Page 2  
September 7, 1984

If you have any questions concerning this matter, please contact  
me at (919) 733-2178.

Sincerely,



William Paige, Environmental Engineer  
Solid & Hazardous Waste Management Branch  
Environmental Health Section

WP:lp

cc: Mr. Doug Holyfield  
~~Mr. Rick Shiver~~



## Southern Wood Piedmont Company

July 31, 1984  
11-M-1.10.7

Mr. William Paige  
Solid and Hazardous Waste Management Board  
N.C. Department of Human Resource  
Box 2091  
Raleigh, N.C. 27402

Dear Mr. Paige

The following is in response to your letter of July 6th and our meeting in Wilmington on July 23rd.

Items:

Question:

1. Sludge from the waste water treatment system is considered K001. Any sludge generated at the Wilmington site would thus be classified as such and subject to RCRA.

SWP Response:

By definition K001 is the bottom sediment sludge from the treatment of waste water from the wood treated with creosote. We never treated the waste water at Wilmington as such. The in plant process handling of water to oil separations were done for recycling and reuse: a modified API steel tank and an air floatation system (Wemco unit). All oils that settled out were recycled in the plant or were sent to our other plant locations. None of this oil was placed into the landfarm area.

Question:

2. North Carolina has not recognized landfarming as a suitable method to handle wood preserving waste. The Solid and Hazardous Waste Management Branch as authorized land application in one case which was deemed an imminent hazard and in another case which had suitable geological conditions.

SWP Response:

This subject was covered verbally at our Wilmington meeting.

Question:

3. The CCA waste is a RCRA hazardous waste as defined in 40 CFR 261.24 as adopted in 10 NCAC 10F .0029 and is thus subject to closure plan as defined in 40 CFR 265.110-265.120 as adopted in 10 NCAC 10F .0033.

SWP Response:

As stated in our June 8th letter, page 6 section S, Southern Wood Piedmont will remove the CCA soil not meeting the EPA toxicity test in 40CFR 261.24. Soil samples are being analyzed now for determining what disposal procedure to use. A disposal proposal on this will follow.

NCSPA SOUTHERN WOOD PIEDMONT  
05-08-84 (1400-1510)

MAURICE CANADY NCSPA  
CHARLES BIRDELL SOUTHERN WOOD PIEDMONT  
JOHN JONES NCSPA  
CONNIE BENNETTS NCSPA  
HENRY PHILLIPS - SOUTHERN WOOD PIEDMONT  
DICK SHIVER

OWNERSHIP: WWI TO 1932 "LIBERTY YARD" (SHIPBUILDERS)  
1932 NORTH STATE CREOSOTING CO. (PILING)  
1935 TAYLOR COMPANY  
1964 SOUTHERN WOOD PIEDMONT  
1965 SWP ACQUIRED BY ITT

SOURCES ON N.C. SPA PROPERTY (LEASED TO NCSPA)

A. SURFACE IMPOUNDMENT THAT CONTAINS HAZARDOUS  
WASTE (IMPOUNDED DRAINAGE DITCH)

I. SLUDGE - CLEANUP COSTS \$1,000,000

SOURCES ON CITY PROPERTY (LEASED TO NCSPA)

A. CONTAMINATED SOIL

I. LANDFILLING ON-SITE

N.C. SPA FUTURE PLANS: NO INTENDED USE, SINCE  
WETLANDS CANNOT BE DISTURBED?

MOORE-GARDNER (BARRY NELSON) SUGGESTS OPTIONS  
DIFFERENT FROM THOSE DISCUSSED WITH SHWMB.

SOUTHERN WOOD PIEDMONT - N.C. SPA - CITY OF  
WILMINGTON IS IN A FLOODPRONE AREA

PROPERTY OWNERSHIP:

CITY 44 - ACRES

SPA 7 - ACRES

1430: SITE VISIT

SUMMARY: MAURICE CANADY IS UNCONVINCED  
THAT SOURCES REPRESENT ANY OBSTACLE  
TO SPA EXPANSION PLANS. INFORMED HIM  
OF POTENTIAL ACTIONS UNDER 21 (REFERRED  
HIM TO WILLIAM PAGE (ERCLA ACTIONS).

P. O. Box 27687 - RALEIGH, N.C. 27611 919-733-2020

DRILLING CONTRACTOR Soil & Material Eng REG. NO. 912 WELL CONSTRUCTION PERMIT NO.

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Wilmington County: New Hanover 129  
Southern Wood Piedmont Quadrangle No. DD 3 1 L-1  
 (Road, Community or Subdivision and Lot No.) 341251

2. OWNER: City of Wilmington

DRILLING LOG 775647

3. ADDRESS: Wilmington N.C.

DEPTH FROM	TO	FORMATION DESCRIPTION
0.0	1.0	Topsoil
5.0	14.0	Brown Gray Loose Fine Sand

4. TOPOGRAPHY: draw, valley, slope, hilltop, flat (circle one)

5. USE OF WELL: Monitoring DATE: 11/3/81

6. DOES THIS WELL REPLACE AN EXISTING WELL? NO

7. TOTAL DEPTH: 14 RIG TYPE OR METHOD: ROTARY

8. FORMATION SAMPLES COLLECTED: YES  NO

9. CASING: Depth Inside Dia. Wall thick. or weight/ft. type  
 From 0 to 9 ft 2" Sch 80 PVC

LAT <u>341251</u> LONG <u>775647</u> PC <u>2</u>
MINOR BASIN: <u>Large Fan</u>
BASIN CODES <u>030617</u>
HEADER ENT. <input checked="" type="checkbox"/> GW-1 ENT. <input type="checkbox"/>

10. GROUT: Depth Material Method  
 From 0 to 8 ft Portland Tremie

If additional space is needed, use back of form

11. SCREEN: Depth Dia. Type & Opening  
 From 9 to 14 ft 2" PVC .010

LOCATION SKETCH  
 (Show distance to numbered roads, or other map reference points)

see Attached  
 Drawing  
 B-7

12. GRAVEL: Depth Size Material  
 From 8.5 to 14 ft COARSE SAND quartz

13. WATER ZONES (depth): 3.0 - 14.0

14. STATIC WATER LEVEL: 1.9 ft. <sup>above</sup> ~~top of casing~~ ground  
 Casing is 2 ft. above land surface ELEV: 2.0'

15. YIELD (gpm): \_\_\_\_\_ METHOD OF TESTING: \_\_\_\_\_

16. PUMPING WATER LEVEL: \_\_\_\_\_ ft.  
 after \_\_\_\_\_ hours at \_\_\_\_\_ gpm.

17. CHLORINATION: Type \_\_\_\_\_ Amount \_\_\_\_\_

18. WATER QUALITY: \_\_\_\_\_ TEMPERATURE (°F) \_\_\_\_\_

19. PERMANENT PUMP: Date Installed \_\_\_\_\_  
 Type \_\_\_\_\_ Capacity \_\_\_\_\_ (gpm) HP \_\_\_\_\_  
 Make \_\_\_\_\_ Intake Depth \_\_\_\_\_  
 Airline Depth \_\_\_\_\_

20. HAS THE OWNER BEEN PROVIDED A COPY OF THIS RECORD AND INFORMED OF THE DEPARTMENTS REQUIREMENTS AND RECOMMENDATIONS? yes

21. REMARKS  
 I do hereby certify that this well was constructed in accordance with N.C. Well Construction Regulations and Standards and that this well record is true and exact.  
Walter B. Cata 4-6-82  
 SIGNATURE OF CONTRACTOR OF AGENT DATE

APR 12 1982  
 WILMINGTON REGIONAL OFFICE  
 DEM

WELL RECORD

DIVISION OF ENVIRONMENTAL MANAGEMENT

Box 27687 - RALEIGH, N.C. 27611 919-733-

W-2209

DRILLING CONTRACTOR WATER'S E.M.S. REG. NO. 412 WELL CONSTRUCTION PERMIT NO. \_\_\_\_\_

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Wilmington County: New Hanover 129  
Southern Wood Piedmont Quadrangle No. DD 31 m-1  
(Road, Community or Subdivision and Lot No.)

2. OWNER: City of Wilmington

341442  
DRILLING LOG 775701

3. ADDRESS: Wilmington N.C.

DEPTH FROM TO FORMATION DESCRIPTION

4. TOPOGRAPHY: draw, valley, slope, hilltop (circle one)

5. USE OF WELL: Monitoring DATE: 11/3/81

0.0'-5.0' - TAN BROWN AND GRAY Medium Dense Silty SAND FILL TRACE GRAVEL AND CINDERS

6. DOES THIS WELL REPLACE AN EXISTING WELL? NO

7. TOTAL DEPTH: 12 RIG TYPE OR METHOD: ROTARY

5.0'-12.0' - GRAY AND TAN Medium Dense FINE TO MEDIUM SAND.

8. FORMATION SAMPLES COLLECTED: YES  NO

9. CASING: Depth Inside Dia. Wall thick. or weight/ft. type  
From 0 to 7 ft 2" 40 PVC

LAT 341442 LONG 775701 PC 2  
MINOR BASIN Cape Fear  
BASIN CODES 030617  
HEADER ENT  GW-I ENT

10. GROUT: Depth Material Method  
From 0 to 6 ft Portland Tremie

If additional space is needed, use back of form

11. SCREEN: Depth Dia. Type & Opening  
From 7 to 12 ft 2" PVC .010

LOCATION SKETCH (Show distance to numbered roads, or other map reference points)

see Attached DRAWINGS  
B-2

12. GRAVEL: Depth Size COARSE Material  
From 6.5 to 12 ft 5a QUARTZ

13. WATER ZONES (depth): 3.0 - 12.0

14. STATIC WATER LEVEL: 1.5 ft. above GROUND below top of casing  
Casing is 2 ft. above land surface ELEV: 9.0'

15. YIELD (gpm): \_\_\_\_\_ METHOD OF TESTING: \_\_\_\_\_

16. PUMPING WATER LEVEL: \_\_\_\_\_ ft.  
after \_\_\_\_\_ hours at \_\_\_\_\_ gpm.

17. CHLORINATION: Type \_\_\_\_\_ Amount \_\_\_\_\_

18. WATER QUALITY: \_\_\_\_\_ TEMPERATURE (°F) \_\_\_\_\_

19. PERMANENT PUMP: Date Installed \_\_\_\_\_  
Type \_\_\_\_\_ Capacity \_\_\_\_\_ (gpm) HP \_\_\_\_\_  
Make \_\_\_\_\_ Intake Depth \_\_\_\_\_  
Airline Depth \_\_\_\_\_

20. HAS THE OWNER BEEN PROVIDED A COPY OF THIS RECORD AND INFORMED OF THE DEPARTMENT'S REQUIREMENTS AND RECOMMENDATIONS? yes

21. REMARKS  
I do hereby certify that this well was constructed in accordance with N.C. Well Construction Regulations and Standards and that this well record is true and exact.

David B. Caton 4-6-82  
SIGNATURE OF CONTRACTOR OR AGENT DATE

RECEIVED

APR 13 1982

WILMINGTON REGIONAL OFFICE  
DEM

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Wilmington County: New Hanover 129  
Southern Wood Piedmont Quadrangle No. DD 31 M-2  
(Road, Community or Subdivision and Lot No.) 34 12 03

2. OWNER: City of Wilmington

DRILLING LOG 775706

3. ADDRESS: Wilmington N.C.

DEPTH FROM TO FORMATION DESCRIPTION

4. TOPOGRAPHY: draw, valley, slope, hilltop flat (circle one)

5. USE OF WELL: Monitoring DATE: 11/9/81

0.0 - 1.0 Topsoil

6. DOES THIS WELL REPLACE AN EXISTING WELL? NO

1.0 - 7.5 TAN AND GRAY Medium

7. TOTAL DEPTH: 7.5 RIG TYPE OR METHOD: ROTARY

Dense Fine to Medium

8. FORMATION SAMPLES COLLECTED: YES  NO

SAND FILL TRACE Silt

9. CASING: Depth Inside Dia. Wall thick. or weight/ft. type

From 0 to 2.5 ft 2" 40 PVC

LAT <u>341203</u> LONG <u>775706</u> PC <u>2</u>
MINOR BASIN: <u>Large Egan</u>
BASIN CODES: <u>030617</u>
HEADER ENT. <input checked="" type="checkbox"/> GW-I ENT. <input type="checkbox"/>

If additional space is needed, use back of form

10. GROUT: Depth Material Method

From 0 to 2.5 ft PORTLAND TREMIE

11. SCREEN: Depth Dia. Type & Opening

From 2.5 to 7.5 ft 2" PVC .010

LOCATION SKETCH (Show distance to numbered roads, or other map reference points)

See Attached Drawing B-3

12. GRAVEL: Depth Size Material

From 2.5 to 7.5 ft COARSE SA QUARTZ

13. WATER ZONES (depth): 3.0 - 7.5

14. STATIC WATER LEVEL: 1.5 ft. <sup>above</sup> ~~below~~ GROUND level top of casing

Casing is ± 2 ft. above land surface ELEV: 4.4'

15. YIELD (gpm): \_\_\_\_\_ METHOD OF TESTING: \_\_\_\_\_

16. PUMPING WATER LEVEL: \_\_\_\_\_ ft.

after \_\_\_\_\_ hours at \_\_\_\_\_ gpm.

17. CHLORINATION: Type \_\_\_\_\_ Amount \_\_\_\_\_

18. WATER QUALITY: \_\_\_\_\_ TEMPERATURE (°F) \_\_\_\_\_

19. PERMANENT PUMP: Date Installed \_\_\_\_\_

Type \_\_\_\_\_ Capacity \_\_\_\_\_ (gpm) HP \_\_\_\_\_

Make \_\_\_\_\_ Intake Depth \_\_\_\_\_

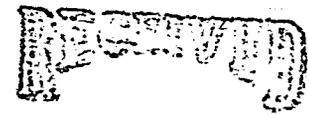
Airline Depth \_\_\_\_\_

20. HAS THE OWNER BEEN PROVIDED A COPY OF THIS RECORD AND INFORMED OF THE DEPARTMENT'S REQUIREMENTS AND RECOMMENDATIONS? yes

21. REMARKS \_\_\_\_\_

I do hereby certify that this well was constructed in accordance with N.C. Well Construction Regulations and Standards and that this well record is true and exact.

David B. Caton 4-6-82  
SIGNATURE OF CONTRACTOR OF AGENT DATE



APR 13 1992

WILMINGTON REGIONAL OFFICE  
DEM

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Wilmington County: New Hanover 129  
Southern Wood Piedmont Quadrangle No. DD:2, 1m-3  
(Road, Community or Subdivision and Lot No.)

2. OWNER: City of Wilmington

DRILLING LOG 341203  
775706

3. ADDRESS: Wilmington

DEPTH FROM TO FORMATION DESCRIPTION

4. TOPOGRAPHY: draw, valley, slope, hilltop flat (circle one)

5. USE OF WELL: Monitoring DATE: 11/9/81

0.0-1.0 - Topsoil

6. DOES THIS WELL REPLACE AN EXISTING WELL? NO

1.0-7.5 - TAN AND GRAY Medium

7. TOTAL DEPTH: 18 RIG TYPE OR METHOD: ROTARY

Dense Fine to Medium Sand Fill

8. FORMATION SAMPLES COLLECTED: YES  NO

Trace silt

9. CASING: Depth Inside Dia. Wall thick. type or weight/ft.

7.5-8.5 - Black Soft Organic

From 0 to 9 ft 2" 40 PVC

Silt Trace Sand

8.5-14.0 - TAN & GRAY Medium

Dense Fine to Medium Sand

10. GROUT: Depth Material Method

From 0 to 8 ft Portland Tremie

If additional space is needed, use back of form

11. SCREEN: Depth Dia. Type & Opening

From 9 to 14 ft 2" PVC .010

LOCATION SKETCH (Show distance to numbered roads, or other map reference points)

See Attached Drawings

12. GRAVEL: Depth Size Material

From 8.5 to 14 ft 5a Quartz

B-4

13. WATER ZONES (depth): 4.0 - 14.0

14. STATIC WATER LEVEL: 1.9 ft. above GROUND level below top of casing

Casing is 2 ft. above land surface ELEV: 4.0'

LAT 341203 LONG 775706 PC 2  
MINOR BASIN: Large Fan  
BASIN CODES: 030617  
HEADER ENT.  GW-1 ENT.

15. YIELD (gpm): METHOD OF TESTING:

16. PUMPING WATER LEVEL: ft.

after hours at gpm.

17. CHLORINATION: Type Amount

18. WATER QUALITY: TEMPERATURE (°F)

19. PERMANENT PUMP: Date Installed

Type Capacity (gpm) HP

Make Intake Depth

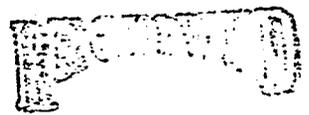
Airline Depth

20. HAS THE OWNER BEEN PROVIDED A COPY OF THIS RECORD AND INFORMED OF THE DEPARTMENTS REQUIREMENTS AND RECOMMENDATIONS? yes

21. REMARKS

I do hereby certify that this well was constructed in accordance with N.C. Well Construction Regulations and Standards and that this well record is true and exact.

David B. Caton  
SIGNATURE OF CONTRACTOR OF AGENT DATE



APR 13 1982

WILMINGTON REGIONAL OFFICE

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Wilmington County: New Hanover 129  
Southern Wood Piedmont Quadrangle No. DD 31 L-2  
(Road, Community or Subdivision and Lot No.) 341258 775652

2. OWNER: City of Wilmington

DRILLING LOG

3. ADDRESS: Wilmington

DEPTH FROM TO FORMATION DESCRIPTION

4. TOPOGRAPHY: draw, valley, slope, hilltop (circle one)

5. USE OF WELL: Monitoring DATE: 11/4/01

0.0 - 1.0 - Topsoil

6. DOES THIS WELL REPLACE AN EXISTING WELL? NO

1.0 - 3.0 - Gray Very Soft Organic silt + peat

7. TOTAL DEPTH: 15' RIG TYPE OR METHOD: ROTARY

8. FORMATION SAMPLES COLLECTED: YES  NO

3.0 - 5.0 - Tan + Gray Medium Dense

9. CASING: Depth Inside Dia. Wall thick. or weight/ft. type

Fine Sand Fill w/ Clayey Fine to

From 0 to 10 ft 2 40 PVC

Medium Sand layers

3.0 - 8.0 - Gray Very Soft ORGANIC silt + peat

10. GROUT: Depth Material Method

8.0 - 15.0 - Gray + Tan Medium Dense

From 0 to 9.0 ft Portland Tremie

Fine Sand Trace silt

If additional space is needed, use back of form

11. SCREEN: Depth Dia. Type & Opening

From 10 to 15 ft 2" PVC .010

LOCATION SKETCH

(Show distance to numbered roads, or other map reference points)

see Attached

Drawings

B-5

12. GRAVEL: Depth Size coarse Sand Material

From 9.5 to 15 ft Sand Quartz

13. WATER ZONES (depth): 4.0 - 15

14. STATIC WATER LEVEL: 3.0 ft. above Ground below top of casing

Casing is 2 ft. above land surface ELEV: 4.0

15. YIELD (gpm): \_\_\_\_\_ METHOD OF TESTING: \_\_\_\_\_

16. PUMPING WATER LEVEL: \_\_\_\_\_ ft.

after \_\_\_\_\_ hours at \_\_\_\_\_ gpm.

17. CHLORINATION: Type \_\_\_\_\_ Amount \_\_\_\_\_

18. WATER QUALITY: \_\_\_\_\_ TEMPERATURE (°F) \_\_\_\_\_

19. PERMANENT PUMP: Date Installed \_\_\_\_\_

Type \_\_\_\_\_ Capacity \_\_\_\_\_ (gpm) HP \_\_\_\_\_

Make \_\_\_\_\_ Intake Depth \_\_\_\_\_

Airline Depth \_\_\_\_\_

20. HAS THE OWNER BEEN PROVIDED A COPY OF THIS RECORD AND INFORMED OF THE DEPARTMENT'S REQUIREMENTS AND RECOMMENDATIONS? yes

21. REMARKS

I do hereby certify that this well was constructed in accordance with N.C. Well Construction Regulations and Standards and that this well record is true and exact.

David B. Cato 4-6-02  
SIGNATURE OF CONTRACTOR OF AGENT DATE

LAT <u>341258</u> LONG <u>775652</u> PC <u>2</u>
MINOR BASIN: <u>Creek Farm</u>
BASIN CODES: <u>0/30617</u>
HEADER ENT. <input checked="" type="checkbox"/> GW-1 ENT. _____

DIVISION OF ENVIRONMENTAL MANAGEMENT

March 15, 1982

Mr. Hugh Caldwell  
Engineering Division  
City of Wilmington  
P.O. Box 1810  
Wilmington, NC 28402

Subject: Request for Copy of Report  
Completed Groundwater Study  
Southern Wood Piedmont Company  
Wilmington  
New Hanover County

Dear Mr. Caldwell:

Per our recent discussion, please provide me with one copy of the groundwater study completed on the Southern Wood Piedmont Facility.

Your consideration of my request is greatly appreciated.

Sincerely,

RSS

Rick Shiver  
Regional Hydrologist

cc: Wilmington Regional Office ✓

DIVISION OF ENVIRONMENTAL MANAGEMENT

March 15, 1982

Mr. Hugh Caldwell  
Engineering Division  
City of Wilmington  
P.O. Box 1810  
Wilmington, NC 28402

Subject: Request for Copy of Report  
Completed Groundwater Study  
Southern Food Processing Company  
Wilmington  
New Hanover County

Dear Mr. Caldwell:

For our recent discussion, please provide me with one copy of the  
groundwater study completed on the Southern Food Processing facility.

Your consideration of my request is greatly appreciated.

Sincerely,

Rick Shiver  
Regional Hydrologist

cc: Wilmington Regional Office

July 18, 1975

MEMO TO: Ron McNeill  
Environmental Engineer I  
Southeastern Field Office

FROM: Rick Shiver  
Hydrologist  
Southeastern Field Office

SUBJECT: Sludge Disposal, Southern Wood Piedmont

It is the recommendation of the Groundwater Section that creosote sludge generated by Southern Wood Piedmont, Wilmington, N.C., be incinerated in an approved incinerator.

However, if incineration is not at all possible, the sludge should remain on site at Southern Wood Piedmont. Hydrogeologic conditions exist such that leachate from the sludge pile would be transported by groundwater into the Cape Fear River.

Disposal of this sludge into nearby landfills would result in degradation of potable groundwater.

RSS:jaw

XC: LAD  
LLL

June 24, 1975

RECEIVED

JUN 27 1975

MEMO TO: Ron McNeill, Engineer  
SEFO

FROM: W. B. Edwards, Jr. *WBE*  
Laboratory Section

SUBJECT: Southern Wood Piedmont Company  
Sludge Sample Results

SOUTHEASTERN REGIONAL OFFICE  
WATER QUALITY DIV.

The two subject samples were received on 5/29/75 and were identified and analyzed as follows:

Sample #2 - End of discharge canal sludge sample - assigned lab number 6202

This sample was a true sludge sample which was analyzed and percent moisture determined. The results were as follows:

Arsenic - <10 µg/g dry weight

Phenol - 37 µg/g dry weight

% moisture - 54.6%

Sample #1 - Midpoint of discharge canal - assigned lab number 6203

This sample contained both a liquid and sludge portion. The liquid was poured off and analyzed, while the sludge was also analyzed as a separate sample. The results were as follows:

	Sludge	Liquid
Arsenic-	<10 µg/g dry weight	280 µg/l
Phenol -	701 µg/g dry weight	18,800 µg/l
% Moisture -	37.5%	--

Future sludge samples should be collected in a wide mouth jar (ex., the type used for grease) and the liquid phase poured away.

The laboratory report sheets are attached.

cc: E. C. Hargrave  
L. P. Benton  
Tyndall Lewis

Attachments

