



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



September 8, 1998

**JAMES B. HUNT JR.**  
GOVERNOR

David Gardner, Environmental Manager  
Weyerhaeuser Company  
P. O. Box 1391  
New Bern, North Carolina 28563

**WAYNE McDEVITT**  
SECRETARY

Re: Draft Hydrogeologic Technical Review of the Landfill Final  
Closure Plan, Weyerhaeuser Company.

Fac/Perm/Co ID #	Date	Doc ID#
25-02	10/06/2011	DIN 15315

**WILLIAM L. MEYER**  
DIRECTOR

Dear Mr. Gardner,

A preliminary hydrogeologic review has been completed by the Solid Waste Section for the Landfill Final Closure Plan. In order to complete the initial review process additional information needs to be provided.

Groundwater sampling is briefly discussed in the text. There is not enough information provided to determine the quality of water by the data presented or if the current program is adequate to detect a potential release of constituents. It is unclear whether the current program accurately demonstrates compliance with NCAC 2L.

Develop a historical table that includes the semi-annual groundwater monitoring from wells OWD-01, OWS-01, OWS-02, and OWS-03. Include results for all parameters tested. Include all water testing results from piezometer locations, also include any available TCLP results.

What are the vertical components of groundwater flow?  
Provide a cross-section indicating vertical components. The cross-section should also include lithology and the top of the water table.

Provide a potentiometric map depicting groundwater elevations at the surveyed observation locations (monitoring wells and piezometers), the date in which groundwater elevations were taken (this must be within a 24 hour period).

Provide at least two cross-sections showing the thickness of waste and its contact with the natural soils, and where possible the water table. Show the cross-section lines chosen the potentiometric map.

What are the dimensions of the leachate canal? Include depth, width and length.

How much water run-off from the mill is contributed to dilution in the canal?

There is a wetland area beyond the leachate canal. Is there any information available concerning its size?

What is the pumping rate from the base of the leachate canal to the leachate fields?

Are there any other factors that relate to the groundwater effects from the facility?

The basic dispersion-advection equation by Domenico and Robbins was used to estimate concentration of total dissolved solids (TDS) in groundwater. The equation is not included in the report. Please provide the equation and calculations used for results.

HELP3 modeling was used to estimate annual leachate production based on TDS obtained from a sample collected from PZ00100 for TDS. Include the HELP3 model run.

What is the groundwater flow velocity calculated from data collected on June 13, 1997? What are the porosity and hydraulic conductivity values? Provide the calculations.

Modeling constituents should consider hydrogeologic conditions, appropriate boundary conditions (and initial conditions), and provide sensitivity analysis. Provide a flow net to show flow boundaries, identify compliance boundaries, and surface hydrogeologic features.

What is the length of time it takes for a constituent leaching from the base of the landfill to reach the compliance boundary?

“Should there be no violations of NCAC 2L beyond the compliance boundary within five years of closure, or indications of an increase in concentrations of constituents of concern, monitoring will be discontinued and existing well properly abandoned.”

A letter may be written requesting review of post closure monitoring, however, discontinuance of a water Quality Monitoring Program must be granted by the Solid Waste Section.

If you have any questions regarding this memo, please contact me at (919) 733-0692, extension 346.

Sincerely,

A handwritten signature in cursive script, appearing to read "Cheryl Marks".

Cheryl Marks  
Hydrogeologist  
Solid Waste Section

cc: Sherri Coghill, Solid Waste Section  
Jim Coffey, Solid Waste Section  
Bobby Nelms, SWS Washington  
Bill Morris, Weyerhaeuser Co.