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

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

WILLIAM L. MEYER
DIRECTOR

March 10, 1999

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

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Re: Response to Technical Review Comments of the Landfill Final Closure Plan, Weyerhaeuser Company.

Dear Mr. Gardner,

A review of the additional information provided has been completed by the Solid Waste Section for the New Bern Industrial Landfill. The following comments also need to be addressed since the information submitted does not clearly demonstrate current compliance with the ground water standards in the upper most aquifer.

Develop a historical table for the past four years that includes results for all available TCLP results.

Figures 4, and 5 show a conflict of the potentiometric surface inside the leachate canal and on the landfill. Outside the landfill figure 4 shows groundwater flow to the east-northeast toward Swift Creek and figure 5, from the landfill to the east is also toward Swift Creek. Groundwater flow depicted on both figures establish a discharge point of Swift Creek. The wet waste appears to affect groundwater in the area. Any groundwater mounding from the landfill is part of the current aquifer regime. Reconcile groundwater flow outside the landfill with groundwater in the landfill to demonstrate an understanding of the current aquifer regime.

The discharge is indicated to be Swift Creek. Where is the aquifer recharge?

Figures 1, 4, 5, and 9 do not show the topographic surface. Include the topographic surface information on these figures.

Is the ground surface on figures 6, and 7 estimated?

Cross-section location map, figure 1, only shows piezometer locations. Surveyed monitoring well locations also need to be included. For example, cross-section E-E' is depicted as a straight line across the southern portion of the landfill. Cross-section E-E' shows OWS-03, OWD-01, and OWS-02. Since OWS-03, OWD-01, and OWS-02 are not on figure 1, it is difficult to discern the

401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

meaning of the information provided. Add the monitoring well locations to the piezometer locations on Figure 1, and the ground surface elevations.

Include all surveyed points for obtaining water level information to figures 4, and 5.

Figure 1 indicates there are five cross-sections. There are only three included in the response. Provide cross-sections A-A' and B-B'.

Include OWD-1 and OWS-02 in cross-section C-C'.

A reasonable scale of inch equals 200 feet is needed for the potentiometric surface and should have a consistent scale for all water table contour maps. Also include the existing topography.

Modeling was completed for the TDS but not for the metals detected outside standards. Also model for iron, manganese, and chromium.

Provide a plan view of the TDS source area; the receptor location of the x coordinate showing the distance used to obtain 217.63 meters; and the location of the width for Y = 262.9 meters.

Hydraulic conductivity is reported as 1×10^{-5} and was obtained from laboratory analysis of split spoon samples. The laboratory results for hydraulic conductivity are reported as 1.9×10^{-2} and 2.6×10^{-2} in the report. Provide the laboratory results for the value of 1×10^{-5} and include sample depth and the sample location.

Only two of the existing monitoring wells had split-spoon samples collected during installation. One well was screened in a medium sand and the other in a silty sand. How does the hydraulic conductivity value compare to slug test values of the monitoring wells?

The monitoring wells appear to be upgradient from the discharge point of Swift Creek and the 500 foot compliance boundary. Modeling parameters were chosen from monitoring well information. What field information is available to demonstrate homegeneity from the monitoring wells to the compliance boundary?

A porosity value of 0.30 was obtained from laboratory analysis. Provide the laboratory results and include the sample depth and sample location.

An effective porosity value of 0.30 indicates a medium to coarse sand. This seems to conflict with the hydraulic conductivity of the silty sand used in the model.

Piezometers and soil borings are reported as abandoned. Provide the abandonment record for all the boreholes and piezometers abandoned mentioned in the report.

Leachate from the canal is pumped at a rate of 21 gallons per minute. OWD-01 and OWS-02 are located near the pumping station which pumps leachate into the waste water treatment system. The wells may also be influenced by the wet waste in the landfill. A vertical component was calculated from the nested pair demonstrating 0.1 feet/feet downward. Often a downward component is an indication of a recharge area. Explain the downward component of the vertical hydraulic conductivity for the nested pair.

Does the pump affect the direction of the horizontal groundwater flow?

The flow net shows a good understanding of groundwater flow upgradient of the landfill. It does not show groundwater flow downgradient from the landfill to the discharge point. Expand the flow net to include groundwater flow to the discharge point, this will help define the discharge boundary conditions.

Daily operations of the waste water treatment system increases the complexity of the groundwater regime and reduce the ability to monitor groundwater for a potential release of constituents. Response to these comments will aid in determining how quickly closure of the landfill will be conducted.

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

Sincerely,

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, Weyerhauser Co.
David Kroening, Delta Environmental Consultants, Inc.