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

December 1998

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Mr. Grayling Vandervelde
Duke Power
1339 Hagers Ferry Road
Huntersville, NC 28078

RE: Belews Creek Station Catawba County
Industrial Solid Waste Landfill Permit #85-03

Dear Mr. Vandervelde,

The Solid Waste Section Hydrogeologic Unit has received the Compliance Demonstration Report dated November 24, 1997. According to Rule .0503(2)(d)(ii) all industrial landfills which receive solid waste after January 1, 1998 must submit a design which satisfies either (A) a design ensuring that the ground water standards established under 15A NCAC 2L will not be exceeded in the uppermost aquifer at the compliance boundary established by the Division in accordance with 15A NCAC 2L or (B) a design with a leachate collection system, a closure cap system, and a composite liner system. In the case of this landfill the option (A) was chosen and an attempt to demonstrate compliance at the compliance boundary was made using HELP modeling along with FOWL-GH modeling.

At this time the Section wants to only address whether or not the 2L standards are being exceeded at the compliance boundary. If indeed it is found that the landfill does cause an exceedance of the 2L standards then the landfill will need to be closed. This landfill was originally permitted in December 1984. According to the Information Package ash placement began in December 1984. Monitoring wells were placed in August 1989 and the first sampling event was in October 1989. The 2L standard has been exceeded at well MW-4 for iron and for pH consistently according to our records. It has not been shown by direct measuring at wells or by modeling with FOWL-GH that iron or pH will not exceed the 2L standards at the compliance boundary. In fact according to the literature FOWL-GH is not an appropriate model for iron.

A potentiometric map showing groundwater movement did not accompany the Compliance Demonstration Report. The water level shown in OB-1, as reported on Groundwater Monitoring Reports from this year and previously, is at approximately elevation 847 and is always higher than the

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wells surrounding the west end of the landfill. The direction of groundwater flow is probably towards the wells MW-1, MW-2 and MW-4. MW-3 is not representative of the groundwater quality passing the point of compliance, which in the case of an industrial landfill is 250 feet or 50 feet within the property boundary according to 15A NCAC 2L standards. Monitoring well MW-5 is probably located on the other side of a discharge point from the landfill and may not be representative of groundwater which leaves the landfill.

A revised water quality monitoring plan needs to be submitted which includes an updated potentiometric map and additional wells which are to be located, sampled, and analyzed in such a way as 2L standards at the compliance boundaries can be demonstrated. MW-1, MW-2, and MW-4 are downgradiant wells and there is seemingly not an appropriate upgradiant well. The water quality monitoring plan needs to be updated to include at least an upgradiant well and 2 or more downgradiant wells which are deemed appropriate as to better detect any possible releases from this landfill.

During the installation of the new monitoring wells a better understanding needs to be made of the geology and hydrology of the site. This is in order for you to be able to model that the design ensures that the 2L ground water standards will not be exceeded at the compliance boundary. In order to satisfy Rule .0503(2)(d)(ii)(A)part(I) which states: The design shall be based upon modeling methods acceptable to the Division, which shall include, at a minimum, the hydrogeological characteristics of the facility and surrounding lands, the geological characteristics of the wells need to be recorded and testing of the soil and water needs to be performed. Please see the rules .0504(1)(c) for determination as to what would be considered acceptable to this section.

The intent of this letter is to make clear some important issues which need immediate attention before a final review of this can be completed. Since this information is time sensitive the updated monitoring system and lab results should be completed in four to six months. Please contact me with an indication of how these issues will be addressed. I can be contacted by phone at 919-733-0692 extension 345.

~~Bill Sessoms~~, Solid Waste Section
Jim Coffey, Solid Waste Section