



North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary

December 4, 2003

Mr. Don Baynard
Solid Waste Director
Rutherford County Solid Waste Department
601 North Main Street
Rutherfordton, NC 28139

Re: Review of Site Suitability Hydrogeological Report
Rutherford County Municipal Solid Waste Landfill (Permit # 81-XX)
Rutherfordton, NC – Rutherford County

Dear Mr. Baynard:

The Solid Waste Section has reviewed the Site Suitability Hydrogeologic Report for the Rutherford County MSW Landfill submitted by David Garrett, P.G., P.E on November 9, 2001. Please respond to the following concerns.

Section 2 – Site Study

Sub-section 2.2 – Drawing S2 does not show the 2000-foot radius as indicated in the text. In the potable well survey, there were 15 wells located within the 2000-foot radius. Show the locations of these wells on Drawing S2 and place the 2000-foot radius on the figure.

Sub-section 2.4.2 – The second sentence reads “... tributaries make east and east boundaries ...”. This might be a typo. Correct and submit edited page.

Sub-sections 2.5 – In the local government approval discussion, replace the “xxxxxx” with actual dates, times and/or numbers.

Tables

Table 5 – The groundwater elevations taken from June 20th through the 23rd violates the 24-hour rule. All groundwater elevation readings should be taken within a 24-hour period. Explain.

Table 7 – The groundwater elevations listed in this table do not match the groundwater elevations marked on Drawing S6 as referenced at the top of the table.

Figures

Drawing S2: Local Area Map – What is going to happen to the private residence inside the proposed footprint of Phase 3?

Drawing S6: Ground Water Contours – None of the groundwater elevations displayed on the figure match the groundwater elevations stated in Table 5. Explain. The text (Section 4.7) states the groundwater contours are from the groundwater readings taken in June 2000. There are two June 2000 groundwater reading episodes listed on Table 5 (June 1-2 and June 20-23). Which data set was used to configure the groundwater contours on Drawing S6? Place the date of the groundwater reading episode on the figure. Submit edited figure.

Drawing S7: Bedrock Contours

- The figure displays bedrock elevations for B-2, B-4 and B-11, but the boring logs for these wells show that there was no auger refusal. Explain.
- The auger refusal for B-33 is 899.5 feet, according to Table 1A. The bedrock elevation displayed on the figure for B-33 is 898.5 feet. Correct figure and submit edited figure.
- The bedrock in the vicinity of B-13 is approximately one foot below ground surface. The four-foot separation rule will be controlled by the bedrock elevation instead of the usual groundwater elevation in this area.

Submit a figure displaying the entire property with the proposed footprint boundaries of all the Phases. This figure should also display all the borings from this site study and previous studies, the footprint boundary of the current C&D facility and the location of the closed MSW landfill.

Appendix C

- All the piezometers, with the exception of B-6 and B-26D, were constructed with the annular space being filled with soil cuttings instead of the required cement grout as stated in the Subchapter 2C – Well Construction Standards. The Solid Waste Section does not approve of the way the piezometers were constructed. For future reference, groundwater data will not be accepted if the piezometers are not properly constructed as outlined in Subchapter 2C. During the abandonment process, these piezometers will have to be completely over drilled and then the hole filled with cement grout.

- There is no legend associated with the “Field Borehole Log” records indicating what materials were used in the well construction process. Submit a legend.
- Are the values given for the “collar elevation” on the Test Boring log records the same as the ground surface elevations from Table 1A? Clarify.
- There were several borings (B-10, B-3, B-6, B-18, B-20, B-29 and B-36) that had drilling start and ending dates several weeks apart. Explain.
- For piezometers B-9S and B-26D, there is no indication on the boring logs as to what depth auger refusal occurred.
- There were several borings (B-9S, B-9D, B-26S, B-27, B-28 and B-38) where the drilling dates were different on the boring logs from the drilling dates stated in Table 1A. Correct and submit edited table.
- For B-30D, the ground elevation on the boring log states 1000 feet and Table 1A states 894.69 feet. The total depth of the well is also stated differently between the boring log and Table 1A. Correct and submit edited table.

Appendix D

- According to the grain size distribution for sample number U2 from B-26S, there is 15% gravel. Table 2 does not state any percentage of gravel for this sample. Explain.
- The percentage of sand for sample number S1 from B-31 is 68% as stated on Table 2. The grain size distribution for this sample calculated 78% sands. Correct and submit edited table.
- After personal review of the USCS classifications, several boring samples (B-7 S3, S4 & S9; B-9D U1 & U2; B-18 S1; B-31 S1, S2 & S3 and B-35 B1) were classified differently. Recheck these samples.

Appendix E

- There are no well construction records provided for the monitoring wells from previous studies. Submit well construction records, if available.
- The boring logs and well construction records are missing for MW-1, MW-2, MW-3 and MW-4. Submit these records.
- There is no indication on the boring logs as to what depth the wells were set for MW-10 A/D, MW-10 B/C, MW-11A and MW-11B.
- For boring MW-11A, there is a discrepancy between the boring log and Table 1B and Table 1 in Appendix E pertaining to the total depth of the well. The boring log indicates the well was drilled to 100 feet, but both tables state the total depth of the well to be 45 feet. Explain.

Appendix F

- There is a discrepancy between the aquifer thickness stated on the lab testing results and Table 3 – Summary of Hydrogeological Properties for several of the wells (B-8, B-10, B-15 and B-20). Correct Table 3 or rerun the lab tests for these wells.
- Table 3 states the hydraulic conductivity (K) using the Bouwer & Rice Method for B-9S as 6.02×10^{-5} cm/s. The lab results using the Bouwer & Rice Method for B-9S shows $K = 6.82 \times 10^{-5}$ cm/s. Correct Table 3 and submit edited table.
- The lab testing for B-15 and B-22 report results for hydraulic conductivity using the Hvorslev Method. Table 3 states the hydraulic conductivity for both of these wells to be NA. Explain.

Please feel free to call me if there are any questions or if you would like to set up a meeting at 733-0692 extension 346.

Sincerely,



Elizabeth R. Stewart
Hydrogeologist

Cc: Al Hetzell – Waste Management Specialist, Asheville Regional Office
Tim Jewett – Engineer, Winston Salem Regional Office
Bill Sessoms – Engineer, Solid Waste
Jim Barber – Branch Supervisor, Solid Waste
David Garrett, P.G, P.E., Inc.
Central File