



North Carolina Department of Environment and Natural Resources

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Division of Waste Management

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April 13, 2009

Mr. David Jones
Public Works Director
Post Office Box 543
Snow Hill, North Carolina 28580

Subject: Revised Corrective Action Plan
Greene County Landfill
Construction and Demolition Landfill Permit 40-02
Doc ID 7138

Dear Mr. Jones:

The Solid Waste Section (SWS) reviewed the revised Corrective Action Plan (CAP) for the Greene County Landfill, received February 25, 2009. The CAP had been prepared and submitted by Municipal Engineering Services Company, P.A. (MESCO). Zero-Valent Iron (ZVI) remediation technology is proposed as a corrective measure paired with Monitoring Natural Attenuation. However, ZVI had not been previously proposed. In November 2007, SWS approved the report, *Assessment of Corrective Measures prepared for Greene County Landfill*, dated August 2007, in which a variety of corrective measures are described. On February 29, 2008, Greene County held a public meeting in which those assessed corrective measures had been discussed with affected and interested parties. ZVI had not been included among corrective measures discussed in the ACM or presented to the public. Therefore, its inclusion in the CAP cannot be approved at this time.

The following steps are required for AZI to be reviewed in a revised CAP. One, amend the ACM with a report describing AZI. The amendment should meet requirements specified in 15A NCAC 13B .1635. Two, pursuant to 15A NCAC 13B .1635(d), hold an additional public meeting with "interested and affected parties". Three, notify the SWS that ZVI is the remedy selected by the county pursuant to 15A NCAC 13B .1636. Four, following the SWS's approval of the selected remedy, submit the application, "North Carolina Solid Waste Groundwater Corrective Action Permit Modification Application". The application is accessible through the SWS website: http://www.wastenotnc.org/swhome/EnvMonitoring/NCSWGWCAPermitmod_20080215.pdf. Five, submit a revised CAP. The approved corrective measure shall then be implemented in accordance with 15A NCAC 13B .1637.

Although the current revised CAP is not accepted, listed below are revisions that are required regardless of what remediation technology is selected. Please note that comment on ZVI is excluded. The numbers and titles correspond to the sections in the CAP.

- 1.2 Correct description of groundwater flow directions. Flow is described as flowing westerly when maps show it flowing east and easterly. Also, provide more information about groundwater flow near the two ditches that appear in and near the contamination plume associated with MW-4.
- 1.3 Three revisions are necessary. One, match the constituents targeted by the CAP with the constituents of concern (COC's) listed in the ACM. Two sets of constituents characterizing groundwater contamination appear to exist. Six COC's are listed in the ACM; whereas, only three are listed in the CAP. Two, include lead and iron as additional COC's. Lead is reported in the ACM and CAP as "statistically significant" and detected above state groundwater standards. Iron is reported in the ACM and March 2008 Sampling Report as detected above background levels, consistently above the state groundwater standard, and, in MW-5 and MW-6, significantly higher than detections at surrounding wells. Three, explain how the contamination plume has been determined. In the ACM, no field data appears to have been used to delineate the plume. Unclear is how its dimensions are measured and how its migration will be monitored other than noting detections at MW-4.
- 1.4 Two revisions are necessary. One, expand the table to include lead, iron, and all the COC's listed in the ACM. Two, revise the "site conception model" to show the groundwater flow depicted on potentiometric maps submitted with the March 2008 Sampling Report. Flow based on the model utilized for the ACM show groundwater flowing in other directions.
- 2.1 Expand the list to include lead, iron, and all the COC's listed in the ACM.
- 2.5.2 Match the reported history of constituents exceeding groundwater standards with the history reported in the ACM. Numerous constituents detected above "2L" are mentioned in section 2.1.1 of the ACM that are not reflected in this section of the CAP.
- 4.1 Clarify whether it is MW-1 or MW-1R that will be utilized as the background well.
- 6.2 Include more data about the existing "passive horizontal gas venting system". Elaborate on how it has performed in the past as a "safeguard measure".
- 8.0 Two revisions are necessary. One, correct the statement to reflect that financial assurance for corrective action had not been submitted. Financial assurance had been shown for closure and post-closure but not for corrective action. Pursuant to Regulation 15A NCAC 13B .1628 (d) financial assurance for corrective action is also specified. Two, the cost estimate does not appear to reflect operation of the existing gas venting system mentioned in Section 6.2. More information about financial assurance is at the end of this letter.

Plates

Plate 3 Show location of the relevant point of compliance.

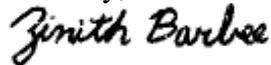
Ground and Surface Water Sampling and Analysis Plan

Include MW-5, MW-6, and MW-7 in assessment monitoring. The March 2008 Groundwater Sampling Report showed vinyl chloride detected in MW-5 and lead detected in MW-7, both at levels above the state groundwater standard. Iron has historically been detected in MW-5 and MW-6, both at levels above the state groundwater standard and background. Pursuant to Regulation 15A NCAC 13B .1634 (a) assessment monitoring is required when a violation of groundwater quality standard occurs.

The SWS received a letter from the chief financial officer of Greene County, dated March 27, 2009 regarding the financial assurance mechanism. Costs for closure and post-closure had been submitted but not for corrective action. Also, in Regulation 15A NCAC 13B .1628 (d)(1)(A) is the specification that the cost estimate be adjusted for inflation. Finally, not reflected in financial assurance for corrective action is cost of the gas ventilation system whose operation and maintenance is presumed to continue during the post-closure period. A revised financial assurance mechanism including a cost estimate for the CAP should be sent to Ms. Shawn McKee in the SWS. She can be contacted at 919-508-8512 or at: shawn.mckee@ncdenr.gov.

If you have questions, please contact me at 919-508-8401 or at: zinith.barbee@ncdenr.gov.

Sincerely,



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Solid Waste Section

cc: Mark Poindexter
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