



## North Carolina Department of Environment and Natural Resources

Dexter Matthews, Director

Division of Waste Management

Beverly Eaves Perdue, Governor  
Dee Freeman, Secretary

May 20, 2010

Sent Via US Mail and Email - [gwood@lincolncounty.org](mailto:gwood@lincolncounty.org)

Mr. George Wood  
Lincoln County Manager  
115 West Main Street  
Lincolnton, NC 28092

Re: *October 2009 Semiannual Monitoring of Groundwater, Surface Water, and Methane*  
Owls Den Landfill, Lincoln County, Permit #55-02

Dear Mr. Wood:

The Solid Waste Section has completed a review of the *October 2009 Semiannual Monitoring of Groundwater, Surface Water, and Methane* report dated January 2010 and submitted by S&ME, Inc. for the Owls Den Landfill, Permit# 55-02. Based upon this review, the Solid Waste Section has several concerns regarding this facility.

The Solid Waste Section issued a letter to the County on June 30, 2004 regarding addressing the groundwater contamination at the facility. Based upon the issued letter and discussions with the County, the County acquired adjacent property that would be used as "buffer" to provide for increased protection of public health and to provide the County additional room to further investigate the groundwater contamination at the facility. The Solid Waste Section issued a letter dated November 8, 2007 to the County requiring additional assessment to address the elevated methane concentrations and groundwater contamination at the landfill. The County submitted an assessment plan on February 27, 2008, and the Solid Waste Section approved the assessment plan on March 20, 2008. As a result, three shallow groundwater monitoring wells (MW-8, 9, and 10) and five landfill gas (methane) monitoring wells (MMW-5, 6, 7, 8, and 9) were installed. The Solid Waste Section commends Lincoln County for its efforts in acquiring adjacent properties and conducting the additional assessment.

However, based upon historical and recent semiannual water quality monitoring results and the semiannual landfill gas monitoring results, critical information has been discovered regarding the extensiveness of the groundwater contamination and the landfill gas (methane) migration at the facility. Therefore, it is imperative from a human health, environmental, and public perception standpoint that additional groundwater assessment and methane corrective action are completed as soon as possible, otherwise enforcement action will be initiated. Within the June 30, 2004 and the November 8, 2007 letters issued to the County, the following was stated, "Addressing groundwater contamination and elevated methane concentrations at or beyond the compliance boundaries (250 feet from the waste boundary, or 50 feet within the property boundary, whichever point is closer to the source) *may include one or several engineered and/or hydraulic controls along compliance boundaries or a combination of corrective measures and the acquisition of additional buffer.*"

In accordance with 15A NCAC 2L .0106 (d)(1), a person conducting or controlling an activity under the authority of a permit which results in an increase in concentration of a substance in excess of the standards at or beyond the review boundary is required to undertake measures to prevent a violation of standards at the compliance boundary. In addition, 15A NCAC 2L .0106(d)(2) requires any person conducting or controlling an activity under the authority of a permit which results in an increase in concentration of a substance in excess of the standards at or beyond the compliance boundary to assess the nature and extent of the contamination and submit the results of the investigation and a plan for corrective action to the Division. Finally, pursuant to Solid Waste Management Rules 15A NCAC 13B .0503 (2)(a) - the concentration of explosive gases generated by the site shall not exceed: (i) twenty-five percent of the limit for the gases in site structures (excluding gas control or recovery system components); and (ii) the lower explosive limit for the gases at the property boundary.

Immediate methane action is required within 30 days. Given the right conditions, methane has the potential to be a significant public health hazard. The dynamics that influence gas movement and migration vary. Methane concentrations can fluctuate widely depending on the conditions at the time they were measured. Results from the ongoing semiannual (not quarterly) screening can be misleading. Due to the close proximity of structures located near the landfill, there should be documentation that there is absolutely no threat to human health and public safety from the off-site migration of methane. Previous actions have failed to correct the problem by preventing the migration of methane to the property boundary at concentrations greater than the regulatory limit. Private residences and structures on County owned property and on adjacent properties must be adequately monitored and protected at all times due to the high and immediate risk associated with methane migration.

As a result, please conduct the following:

- Within 30 days of receipt of this letter, please conduct a current well (potable and non-potable) and receptor survey within 1,500 feet from the edge of waste of the landfill;
- Within 30 days of receipt of this letter please submit a landfill gas (methane) monitoring plan with a landfill gas (methane) contingency plan to the Solid Waste Section for approval. The plan should also include the monitoring of on-site structures and adjacent private residences. Upon Solid Waste Section approval of the landfill gas (methane) monitoring plan, please implement the plan immediately. The Solid Waste Section also recommends that the County initiate continuous landfill gas monitoring by installing continuous landfill gas monitoring alarms within the buildings and structures located closest to the edge of waste;
- Within 30 days of receipt of this letter, please begin monthly landfill gas (methane) monitoring at the facility. Landfill gas monitoring reports will also be required which shall include: the type of landfill gas monitoring instrument used, the date the instrument was calibrated, the date of landfill gas monitoring event, the name of person conducting the landfill gas monitoring, the ambient air temperature, and the general weather conditions. Please also include the following within the landfill gas monitoring report for each monitoring location: the time the landfill gas reading was collected, the percent lower explosive limit, the percent methane, the percent oxygen, the percent carbon dioxide, and the barometric pressure;
- Within 60 days of receipt of this letter, please submit a landfill gas (methane) corrective action plan for both the methane concentration exceedances and the methane migration at the facility to include the acquired "buffer";
- Within 90 days of receipt of this letter, please submit a Phase 2 groundwater assessment plan;
- Within 120 days of receipt of this letter, Lincoln County shall prepare a survey plat in accordance with N.C.G.S. § 143B-279.10. The plat, to be entitled "Notice of Contaminated Site", shall meet the requirements of N.C.G.S. § 47-30 for maps and plats. The plat shall depict the respective property boundaries, the acquired property (Pin 3613297221, Pin 3613296184, and Pin 3613187849), the edge of waste areas of the landfill, surveyed locations of all groundwater and landfill gas wells, surface water sampling locations, areas of potential migration of contaminated

groundwater and landfill gas, a 1,500 foot radius around the perimeter of the waste disposal areas, roads and rights of way, ditches, culverts, streams, wetlands, wells, structures, parking lots, and areas of activity on the property. The plat shall be submitted to the Solid Waste Section for approval. Note that N.C.G.S. § 47-30 requires, among other things, that maps and plats be prepared, signed and sealed by a registered land surveyor. The surveyor shall certify that the plat is not for subdivision purposes, pursuant to N.C.G.S. § 47-30(f)(11)c.1; and

- Within 60 days of submission of the survey plat to the Solid Waste Section for approval, record in the Lincoln County Register of Deeds both the survey plat and a Declaration of Perpetual Land Use Restrictions. The land use restrictions, designed to prevent exposure to contaminants and protect the cover and structural integrity of the landfill, shall be provided by the Solid Waste Section.

If you have any questions or concerns regarding this letter, please contact me at 919-508-8500 or by email at [jaclynne.drummond@ncdenr.gov](mailto:jaclynne.drummond@ncdenr.gov). Thank you in advance for your anticipated cooperation with this matter.

Sincerely,



Jaclynne Drummond  
Hydrogeologist  
Environmental Compliance  
Solid Waste Section

cc via email: Nancy Rickard, Lincoln County Solid Waste  
Mark Poindexter, Field Operations Supervisor  
Deb Aja, Western District Supervisor  
C.T. Gerstall, Environmental Senior Specialist  
Solid Waste Section Central Files