



North Carolina Department of Environment and Natural Resources

Division of Waste Management

Dexter R. Matthews

Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

September 29, 2010

Mr. Stephen King
Haywood County Solid Waste Director
278 Recycle Road
Clyde, North Carolina 28721

Subject: Landfill Gas Monitoring Plan
White Oak MSW Landfill
Haywood County
Permit 44-07
Doc ID 11610

Dear Mr. King:

The Solid Waste Section (SWS) reviewed the Landfill Gas Monitoring Plan (plan) for the White Oak Municipal Solid Waste Landfill (MSW). The plan consists of a cover letter, description of the plan, gas monitoring report form, well construction detail, and map. McGill Associates, P.A (McGill) submitted the plan, which has been entered into the SWS database as Doc ID 11134. White Oak MSW Landfill submitted the plan in response to a Compliance Order issued by the SWS Field Operations Branch. Revision of the plan is necessary.

What follows are required revisions to comply with Regulation 15A NCAC 13B .1626 (4) and current landfill gas monitoring requirements for MSW landfills regulated by the SWS. The SWS previously stated in its letter, dated May 5, 2010 (Doc ID 10520), that landfill monitoring gas plans are now reviewed by the SWS hydrogeologists and some standards for landfill gas monitoring have changed. In that letter some of the current criteria had been specified. Required revisions to the current landfill gas monitoring plan are specified below.

Replace "methane" with "methane and other explosive landfill gases".

Replace "probe" with "landfill gas monitoring well" to reflect current SWS requirements for wells constructed for monitoring landfill gases and state that all well construction will be in accordance to applicable standards specified in Regulation 15A NCAC 2C.

Specify that well depths will extend to the seasonal high groundwater elevation and the entire vadose zone, including bedrock above the water table, will be screened. Also specify that wells compromised by flooding will not be sampled and be replaced with new wells. The screened interval should span the majority of the unsaturated zone while still allowing for proper

well construction. Well joints should be connected with threaded couplings in lieu of slip couplings, screwed couplings, or glued couplings.

Amend the sentence at the end of the first paragraph to reflect that sampling for landfill gas will be conducted in all present and future structures.

In the second paragraph, delete the sentence in which it is stated that well location and well spacing "is somewhat arbitrary". Specify that wells will be spaced no further than 500 feet apart, located along a perimeter around the entire waste boundary, and located no farther than 250 feet from the waste boundary. Show additional landfill gas monitoring wells along the southern and western perimeter of the landfill where residential dwellings are located. The current plan only shows wells north and east of the landfill when it is stated in the plan that wells will "surround the active waste areas".

In the second paragraph, delete references to "six foot depth", since monitoring is to greater depths.

In the fifth paragraph, clarify what is meant by "monitoring points". The reference is understood when applied to locations of wells and structures. However, mentioned is "near the boundary" and "on the boundary". Because wells are not proposed at these locations, unclear is whether additional monitoring is proposed. If so, the sampling locations should be documented on the figures and forms included in the plan.

In the last paragraph, several revisions are necessary. One, throughout the paragraph, delete the word "try". If explosive and toxic gases are detected, their source must be found and addressed. Two, following the first sentence of the paragraph, specify that the sampling instrument will be recalibrated according to manufacturer's instructions. Three, present a contingency plan in which emergency contacts and responses are specified after detecting gas releases. Include the information reportedly presented in the Operations Plan referenced in the paragraph. Four, correct the last sentence in which it is stated "a remediation plan is stated in the operations plan". Presented in the Operations Plan are restated regulatory requirements from 15A NCAC 13B .1626 (4) but not a remediation plan describing the nature and extent of gas releases and a proposed remedy.

Revise the form on which readings of landfill gases are recorded. Specify where within the listed structures samples will be taken and include space on the form for each location. Also revise the form to include wells installed on the western and southern perimeter.

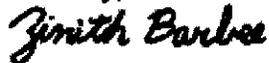
Revise the detail for the landfill gas monitoring well. One, in the figure title, replace "probe" with "well". Two, show a dimension indicating distance to seasonal high groundwater elevation. Three, show a screen interval that spans most of the unsaturated zone while still allowing for proper well construction.

Stephen King
White Oak MSW Landfill
Page 3 of 3
Doc ID 11610

Revise the map in Figure 1 to show landfill gas monitoring wells along the southern and western perimeter of the landfill. In addition to a map included in a pdf file, provide a hard copy of a full-sized map showing locations of both landfill gas monitoring wells and groundwater monitoring wells.

If you have any questions, I can be reached at 919-508-8401 or at zinith.barbee@ncdenr.gov.

Sincerely,



Zinith Barbee
Hydrogeologist
Solid Waste Section

cc: Ed Mussler Solid Waste Section
Deborah Aja SWS/ARO
Andrea Keller SWS/ARO
Allen Gaither Environmental Engineer, SWS
Dave Pasko McGill Associates, P.A.
Central File