





Environmental
Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

Re: Henry County
Henry County Landfill
Ground Water

November 14, 2011

Henry County Board of Commissioners
1853 Oakwood Avenue
Napoleon, Ohio 43545

Dear Board of Commissioners:

The Ohio Environmental Protection Agency (Ohio EPA), Northwest District Office (NWDO), reviewed, "Third Quarter 2011 Hydraulic Monitoring Report; Henry County Landfill" (report), dated October 28, 2011, from Mannik & Smith Group, Inc. The report provides the hydraulic monitoring report as required by the owner/operators corrective measures plan (CMP). The quarterly hydraulic monitoring program is required by the approved CMP to assess the effectiveness of the HDPE barrier wall and dewatering wells which were installed at the facility in 2004. This corrective measure was installed with the hope of remediating ground water contamination in shallow sand deposits in the northeastern portion of the facility.

The facility is presently operating under the correct ground water monitoring phases, the well system is adequate, and the owner/operator should continue to monitor under the current program. Following are the Ohio EPA comments.

VIOLATION

1. **The owner/operator, is in violation of Ohio Administrative Code (OAC) Rule 3745-27-10 (F)(1), which requires that the owner/operator implement a corrective measures program capable of attaining the concentration levels in the plan, capable of controlling the source of the release, and capable of eliminating further releases. The owner/operator needs to ensure and document, for all future events, that the requirements of this rule are being met considering dewatering wells DW-1, DW-2, and DW-3 do not appear to be operated properly to maintain ground water levels below the "Maximum Elevation for Pump On". The owner/operator should also inspect the three dewatering wells and make any repairs or adjustments which are necessary to ensure that maximum pump-on and pump-off levels are maintained. Results of this inspection and repair work should be forwarded to Ohio EPA.**

Table 4.0 in Volume I of the March 2003 corrective measures plan (revised through May 25, 2007) provides the "Maximum Elevation for Pump On" for dewatering well DW-1. This level is 666.4'. A review of Table 1.0 in the current submittal indicates the ground water level measured on September 30, 2011 in dewatering well DW-1 was 668.96'. This measured water level was 2.56' above the maximum pump on level. If the pump was working properly, it should have turned on and lowered the level to 664.20' before it turned off and the water level again began to rise. Table 4.0 in the corrective measures plan also indicates that the maximum pump-on level for dewatering wells DW-2 and DW-3 should both be 664'; but the water levels recorded for the September 30, 2011 sampling event were 671.97' and 671.98' respectively. This is 7.97' and 7.98' feet higher, respectively, than the required maximum pump on levels.

Historically, the data indicated the pumps appeared to not be working properly and could not meet the requirements of OAC Rule 3745-27-10 (F)(1) to control the source of the release and eliminate further releases. This might be, at least in part, currently true. However, in the last paragraph on the first page of the submittal and continuing to the second page the owner/operator indicates that leachate collected from the perimeter collection system and ground water collected from the dewatering system were pumped directly to the recently constructed on-site wastewater treatment lagoon system beginning January 3, 2011; but, the liquids from the treatment lagoon system could not be pumped to the Malinta wastewater treatment system because the discharge permit was not effective until November 1, 2011. It is implied, therefore, that the levels in the dewatering wells were exceeded because the lagoon system was full and this was because the pre-treated liquids could not be sent to the Malinta wastewater treatment system until November 1, 2011. This lack of production of water from the dewatering system appears to be supported by information provided in the third paragraph on the second page. These data indicate that in July 2011, 80,000 gallons were removed from the dewatering system when only 3.0 inches of precipitation was observed at the facility; but only 35,000 gallons were removed from the dewatering system in September 2011, when 7.2 inches of rain were observed at the facility. It is not clear, however, if the exceedances at the dewatering wells are solely the result of pump problems, the pretreatment system discharge permit, or other problems. None-the-less, it is necessary that the water levels in the dewatering system not exceed the pump-on levels as discussed in the approved corrective measures plan.

Ohio EPA requests an explanation of why these exceedances occurred and what was done to remedy the problem. In addition, any repairs to the ground water monitoring network need to be documented in the annual operations report.

Following is a table indicating the water levels collected June 30, 2010, September 21, 2010, March 3, 2011, June 22, 2011, and the current water levels collected September 30, 2011, and the required maximum pump on levels.

WELL	06/30/10	09/21/10	03/03/11	06/22/11	09/30/11	MAX. PUMP ON LEVEL
DW-1	666.81'	665.11'	668.26'	666.01'	668.96'	666.40'
DW-2	661.97'	662.85'	658.06'	661.06'	671.97'	664.00'
DW-3	669.70'	663.61'	669.35'	666.08'	671.98'	664.00'

MORE INFORMATION NEEDED TO DETERMINE COMPLIANCE

- 2. Compliance with OAC Rule 3745-27-10 (F)(1), which requires that the owner/operator implement a corrective measures program capable of attaining the concentration levels in the plan, capable of controlling the source of the release, and capable of eliminating further releases, cannot be determined at this time. In order for Ohio EPA to determine compliance with OAC Rule 3745-27-10 (F)(1), the owner/operator needs to document how the requirements of this rule are being met considering a potential lack of hydraulic control. If the owner/operator cannot provide evidence that the corrective measures plan requirements are being met then in accordance with the corrective measures plan the need for additional corrective measures and/or additional monitoring of the ground water chemistry of the site needs to be determined and implemented.**

In the second paragraph of section 3.3.2.2 of Volume II of the March 2003 corrective measures plan (revised through May 25, 2007) the owner/operator states, "Specifically, elevation data will be collected from existing groundwater monitoring wells and piezometers, the dewatering wells, manholes associated with the perimeter leachate collection trench, and South Turkey Foot Creek, to demonstrate that the direction of groundwater movement inside of the barrier wall is toward the dewatering wells and perimeter leachate collection trench. Additionally, data will be collected to demonstrate that the hydraulic head inside of the wall is lower than outside of the wall."

In the second paragraph of section 3.3.3 of Volume II of the March 2003 corrective measures plan (revised through May 25, 2007) the owner/operator states, "In addition to the above, Henry county and the Ohio EPA will evaluate the effectiveness of the barrier wall and dewatering system to determine if they are effectively operating as a hydraulic control."

A review of figure 5.0 in the corrective measures plan indicates that wells P-1 and DW-1 are located on the west end of and inside the wall; and well MW-7A is also located on the west end of the wall, but generally outside the line of the wall. This map also indicates that wells P-2 and DW-3 are located on the east end of and inside the wall; and well MW-6 is also located on the east end of, but outside the wall. Dewatering well DW-2 has no nearby counterpart outside the wall. If the requirement that the "hydraulic head inside of the well is lower than outside of the wall" is to be maintained, wells located inside the wall, including the dewatering wells (DW-1 and DW-3), need to display water levels which are lower than in wells located outside the wall.

Table 1.0 of the submittal provides ground water elevation data which indicates that this requirement is not being met on the west end and east end of the wall. Following is a table which shows the water levels collected September 30, 2011 for wells P-1, DW-1, MW-7A, P-2, DW-3, and MW-6.

West End of Wall	P-1 (inside)	DW-1 (inside)	MW-7A (outside)
	677.93	668.96	656.97
East End of Wall	P-2 (inside)	DW-3 (inside)	MW-6 (outside)
	672.20	671.98	665.86

From this table it can be seen that the wells outside the wall on both the west end and east end display considerably lower ground water elevations than the wells in the same area inside the wall including the dewatering wells. The water levels in the dewatering wells should be lower than any wells in the area since they are depressing the water table at that well by pumping. This data indicates that the plan requirement that the water in this well inside the wall be lower than that outside is not being met.

Also, Figure 2.0 of the submittal, a time/series plot which shows "Groundwater Elevations Upgradient of the Cutoff Wall Prior to and Post Corrective Measures Installation Activities", appears to indicate that since about 2006, many of the wells located inside the wall are displaying increasing trends in water levels. These trends are especially true when water levels associated with flooding events are ignored. The upward trends include both monitoring wells and the three dewatering wells. Wells DW-3 and MW-34 appear to display increasing trends which are statistically significant.

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If you have any questions please feel free to contact Randy Skrzyniecki at the Ohio EPA Northwest District Office (419-373-3149). Any written correspondence should be sent to the attention of Sue Hardy, Division of Materials and Waste Management, Ohio EPA Northwest District Office, 347 N. Dunbridge Road, Bowling Green, Ohio 43402.

Sincerely,

Michael A Reiser for

Susan Hardy, R.S.
Environmental Specialist
Division of Materials and Waste Management

/llr

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