



**Environmental  
Protection Agency**

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

April 13, 2011

Henry County Commissioners  
1853 Oakwood Avenue  
Napoleon, Ohio 43545

Re: Henry County, Henry County Landfill, Ground Water

Dear Commissioners:

The Ohio Environmental Protection Agency (Ohio EPA), Northwest District Office (NWDO), reviewed, "Report of Groundwater Quality for the Fall 2010 Semi-annual Detection and Compliance Monitoring Event and Notification of a Statistically Significant Increase Pursuant to OAC Rule 3745-27-10(D)(7)(b); Henry County Landfill" (report), dated February 14, 2011, from Mannik & Smith Group, Inc. The Henry County Landfill (facility) is required to maintain a ground water detection monitoring program as well as a corrective measures program at the facility in accordance with Ohio Administrative Code (OAC) Rule 3745-27-10.

Based on Ohio EPA's evaluation, the facility is presently operating under the correct ground water monitoring phases, the ground water monitoring network is adequate and the owner or operator should continue to monitor under the current programs.

### COMMENTS

#### VIOLATION

1. **The owner/operator is in violation of OAC Rule 3745-27-10(C)(1)(a), which requires that procedures stated in the plan be followed. In this instance, review of the analytical results indicates no apparent deleterious impact to the data as a result of not following the stated procedure during this event. Therefore, the data appear to be representative of the ground water of the site. In order to return to compliance and avoid this violation in the future the owner/operator needs to ensure that all plan-required stabilization parameter criteria are followed in future sampling events.**

The "Well Sampling Data Log" for well MW-31 indicates that the minimum purge volume should be 3.33 gallons. It also indicates that 3.75 gallons were purged. This volume is about 3.4 well volumes. The ground water temperatures recorded following the three purge volumes are 13.29°C, 13.31°C, and 12.71°C. The temperature range is 0.6°C.

In the sampling analysis plan, revised June 20, 2008, SOP #1901 states in section IV, on page 5, "After three well volumes have been purged, evaluate whether or not the above-listed stabilization criteria have been achieved for three consecutive measurements and, if met, collect a sample; If the stabilization criteria are not met for one or more of the above parameters over three consecutive measurements, a fourth

well volume will be purged.” The stabilization criteria for ground water temperature is stated in this plan to be  $\pm 0.5^{\circ}\text{C}$ ; however, the collected data exceeded this value. If the final temperature value is utilized,  $12.67^{\circ}\text{C}$ , the difference is  $0.64^{\circ}\text{C}$  which also exceeds the stabilization criteria.

#### **MORE INFORMATION NEEDED TO DETERMINE COMPLIANCE**

- 2. Compliance with OAC Rule 3745-27-10(C)(1), which requires the ground water monitoring plan include consistent sampling and analysis procedures and statistical methods that are protective of human health and the environment and that are designed to ensure monitoring results that provide an accurate representation of ground water quality, cannot be determined at this time. The owner/operator needs to explain how high turbidity samples will produce representative analytical results. Alternately the owner/operator should not use the values of these samples in any background, unless they can be shown to be representative, and ensure that low turbidity samples are collected in the future.**

The “Well Sampling Data Log” for significant zone of saturation compliance well MW-31 indicates that final turbidity is 1346.4 NTU. The TestAmerica laboratory turbidity is 580 NTU. Both of these values are excessive and greatly affect the analytical results. A review of the historical data set for MW-31 confirms this. The turbidity and many of the other analytical values have never displayed these high values. In some cases the values have not been this high since 2004. Clearly the excessive turbidity has affected the results. In some cases, the high values for certain parameters indicate exceedances of remediation standards that have been exceeded even though they might not have been exceeded.

- 3. Compliance with OAC Rule 3745-27-10(C)(1) cannot be determined at this time. For rule citation see comment number 2 above. The owner/operator needs to utilize appropriate statistical limits determined from background data sets which display 100% non-detect values.**

Table C-1 indicates intrawell analyses will be utilized for ammonia nitrogen at well MW-8. This well displays a series of 100% non-detect values in the background data set and the practical quantitation limit (PQL) is 0.2 mg/L. If the background data set is composed of 100% non-detect values it is not normally distributed and a non-parametric method must be used. The table indicates that prediction limits will be used. In this case, the non-parametric prediction limit will be the greatest value in the background data set. Since all values are the same, the non-parametric prediction limit will be equal to the greatest value and that is  $<0.2$  mg/L and not 0.2 mg/L as shown. This needs to be corrected.

In addition, Table C-1 indicates interwell analyses will be utilized for the VOCs in wells MW-6, MW-7A, MW-8, MW-17 and MW-26 with MW-5 being the background well. The table indicates that the VOCs all display 100% non-detect values at background well

MW-5. The non-parametric prediction limit will, therefore, be equal to the highest value in the background. This value is  $<1.0 \mu\text{g/L}$  and not  $1.0 \mu\text{g/L}$  as shown for MW-5. This should be corrected.

Table C-2 indicates intrawell analyses will be utilized for carbon disulfide at wells BMW-3, BMW-12 and BMW-13R. This table also indicates that intrawell analyses will be utilized for zinc at well BMW-13R. These wells display 100% non-detect values in the background data set and the PQL is  $1.0 \mu\text{g/L}$  for carbon disulfide and  $20 \text{ mg/L}$  for zinc. Since a nonparametric prediction limit will be used, the limit will be the greatest value which is  $<1 \mu\text{g/L}$  for carbon disulfide and  $<20 \text{ mg/L}$  for zinc. The table, however, erroneously indicates that the statistical limits should be  $1.0 \mu\text{g/L}$  for carbon disulfide and  $20 \text{ mg/L}$  for zinc.

Table C-2 also indicates that interwell methods will be used for other parameters as listed in the table including antimony, beryllium, chromium, cobalt copper, lead, selenium, silver, thallium, and vanadium. Since most of the listed parameters' background values are 100% non-detect, the non-parametric prediction limits should be some number less than the PQL ( $<\text{PQL}$ ) rather than be equal to the PQL as listed in the table.

In addition, for tables C-1 and C-2, for values that display just one or two detections, those detections may be outliers and should not be included in the background data set. They should be removed until such time that they can be shown to be representative of the ground water of the site.

4. **Compliance with OAC Rule 3745-27-10(C)(1) cannot be determined at this time. For rule citation see comment number 2 above. The owner/operator needs to explain the origin of the chloride value ( $91,000 \mu\text{g/L}$ ) in well BMW-22R from June 9, 2002. Also the owner/operator needs to determine if the two lowest values ( $\text{ND}<2000 \mu\text{g/L}$  and  $3600 \mu\text{g/L}$ ) in the background are outliers.**

A review of the parametric prediction interval analysis in Appendix C indicates a value of chloride ( $91,000 \mu\text{g/L}$ ) for a sample collected June 9, 2002, from well BMW-22R. A review of the historical data for this well located in Appendix D indicates no data and no sampling event conducted June 9, 2002. It is unclear what the origin of this data is.

A review of the background chloride data for well BMW-22R indicates the two lowest values may be outliers based on Ohio EPA analysis. If they are outliers they should not be used in background unless than can be shown to be representative of chloride concentrations in this well. In addition, statistical analyses should be performed without these values and submitted to Ohio EPA.

## STATEMENTS

5. **Field blanks (FB-1 and FB-2), collected during the December 1, 2010, and December 2, 2010, sampling events, display a significant number of estimated parameters detected. Field blank FB-1 also displayed quantifiable amounts of chloroform (3.7 µg/L), copper (23 µg/L), and zinc (38 µg/L).** Field blanks should be prepared using analyte-free water and, if proper field and laboratory procedures were utilized, results of the analyses of these blanks should indicate no detections. The presence of these parameters, even if they are not quantifiable, may suggest problems with field or laboratory procedures.
6. **Appendix C, Statistical Analyses, contains the statistical analyses supporting documentation. Included in the values for the documentation are flags including, but not limited to "A", "R", "RQ". No definition for these flags or other flags could be found in Appendix C.**
7. **Because of the chemistry of the bedrock in the area of Henry County Landfill, it is the current understanding that several, but not all, bedrock wells, including upgradient wells, at the site periodically display detections of carbon disulfide which are naturally occurring.** Based on the current understanding of the hydrogeochemistry of the site, these values in background will not be treated as outliers, but will be treated as true, but extreme values.
8. **It would be helpful to include a shipper number on the chain of custody form.** While commercial shippers (FedEx, etc.) will not sign the chain of custody form, proof of their acceptance of the package would be copies of their paperwork. This can be accessed through their shipper number for the package. Writing the shipper number on the chain of custody form would fulfill the need to reference the shipper's acceptance of the package.
9. **The labels in the legend on Figures 1.0 and 2.0 may be in error.** The legend defines the "Limits of Solid Waste Placement" as a long dash – short dash – long dash line. The "Limits of VEPTI Area" are defined by a long dashed line. A review of the map appears to indicate that these two labels are reversed.
10. **A review of Figure 2.0, "Potentiometric Surface Map Significant Zone of Saturation (Till) December 1, 2010" indicates the 665' contour is a considerable distance from well P-2 which displays a ground water elevation of 664.91'.** The vertical difference between the contour and the ground water elevation in the well is only 0.09' and yet the 665' contour is located a horizontal distance that is greater than the distance between five (5) foot contours. Since there is a only a 0.09' vertical distance between the ground water elevation and the 665' contour and since there is pumping occurring at the wall near well P-2 and other wells, it would be appropriate to move the 665' contours and, subsequently, the other contours closer to the wall/dewatering system. It appears this would not change the direction of flow significantly.

Henry County Commissioners  
April 13, 2011  
Page 5

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 Solid and Infectious Waste Management, Ohio EPA Northwest District Office, 347 N. Dunbridge Road, Bowling Green, Ohio 43402.

Sincerely,

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

/cs

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