



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

January 31, 2013

**RE: CITY OF AVON LAKE LANDFILL
GROUND WATER
REQUEST FOR MORE INFORMATION
NEEDED TO DETERMINE COMPLIANCE
NOTICE OF VIOLATION**

Mr. Thomas E. Lescher
Service Director
City of Avon Lake
750 Avon Belden Rd.
Avon Lake, Ohio 44012

Dear Mr. Lescher:

The Ohio Environmental Protection Agency (Ohio EPA), Division of Materials and Waste Management (DMWM), Northeast District Office (NEDO) received the reports listed below on the corresponding dates regarding the Avon Lake Municipal Landfill (ALML) that were prepared by HZW Environmental Consultants, LLC (HZW).

- March 30, 2012 *Response to the City of Avon Lake Landfill, Lorain County, Notice of Violation/Request for Additional Information dated February 15, 2012.*
- May 23, 2012 *Addendum, Response to the City of Avon Lake Landfill, Lorain County, Notice of Violation/Request for Additional Information dated May 17, 2012.*

Avon Lake Municipal Landfill's (ALML's) March 30, 2012 *Response to City of Avon Landfill, Lorain County, Notice of Violation/Request for Additional Information*, was received by Ohio EPA on March 30, 2012. On April 30, 2012, Ohio EPA requested by email that the facility clarify some of the facility's March 30, 2012 responses. ALML's addendum dated May 17, 2012, was received on May 23, 2012.

EVALUATION OF OWNER/OPERATORS RESPONSE TO PREVIOUSLY CITED VIOLATIONS & REQUEST FOR ADDITIONAL INFORMATION

OHIO EPA COMMENT/VIOLATION #1

The facility owner/operator of the Avon Lake Municipal Landfill is in violation of OAC Rule 3745-27-10(C)(10), requiring that all statistical analysis results and summary table(s) including results from any test for normality be submitted as part of the reports.

- A. Although prediction limits are summarized in Table 2 of the *2011 Annual Ground Water Assessment Monitoring Report*, the aforementioned report does not include any supporting documentation for how PLs were calculated.

In order to return to compliance with OAC Rule 3745-27-10(C)(10), the owner/operator needs to provide to the Ohio EPA the supporting documentation for how the PLs were calculated.

- B. Although Table 2 of the *2011 Semiannual Ground Water Assessment Monitoring Report* provides an incomplete summary of PLs (no PL for sodium given), the aforementioned report does not include the supporting documentation for how PLs were calculated.

In order to return to compliance with OAC Rule 3745-27-10(C)(10), the owner/operator needs to provide to the Ohio EPA the PL for sodium, and supporting documentation for how the PLs were calculated.

Facility's Response to Ohio EPA Comment/Violation #1 A & B

ALML's response to Comments 1 A & B, dated March 30, 2012, indicated that background concentrations of parameters and prediction limit (PL) values for those parameters were updated during each 2011 Assessment Sampling Events. Further, it appears that background concentrations have been updated semiannually since the initiation of the ground water monitoring program. OAC Rule 3745-27-10(C)(7)(g) requires that background data can only be added in blocks of data resulting from analyses of four or more statistically independent samples after the data have been statistically compared to current background data and no statistical differences are detected unless another method is deemed acceptable to the Director. The facility's March 2012 response indicated that background and PL's had been improperly updated.

On April 30, 2012 Ohio EPA requested that the facility resubmit a revised response Comments #1 A & B by recalculating PLs for the 2011 Annual and Semiannual Assessment Sampling Events in accordance with 2009 Unified Guidance, and using representative background concentrations updated in accordance OAC Rule 3745-27-10(C)(7)(g) (e.g., data in blocks of four, and in this case data collected prior to 2010.)

On May 23, 2012, ALML provided Ohio EPA with recalculated PLs by using DUMPStat 2.1.9, and determined with background data from no later than 2009 including supporting documentation and new Summary Tables indicating SSIs for the 2011 Annual and Semiannual Assessment Sampling Events.

Ohio EPA's Response to the Facility's Response to Ohio EPA Comment/Violation #1 A & B

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The facility has adequately responded to Comments/Violations #1A and B, and has demonstrated a return to compliance with 3745-27-10(C)(10).

OHIO EPA COMMENT/VIOLATION #2

The facility owner/operator at Avon Municipal Landfill is in violation of OAC Rule 3745-27-10(E)(1) requiring that the owner/operator comply with the ground water quality assessment plan.

A. The *2011 Annual Ground Water Assessment Monitoring Report* implies that PLs are to be calculated for the shale zone monitoring wells. There have been four assessment sampling events (semiannual and annual 2010, and semiannual and annual 2011) since the installation of the three additional shale zone monitoring wells MW-10, MW-11, and MW-12 (April 2010) to the pre-existing shale zone monitoring well MW-6. The *July 2010 Revised Ground Water Assessment Plan* (pg.18) states: "Within 180 days of implementing the GWQAP, additional statistically independent ground water samples will be collected and analyzed if necessary. The data collected will be used to provide sufficient analyses in order to statistically compare the downgradient ground water quality assessment program monitoring wells to background monitoring wells." The *2009 U.S EPA Guidance Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities* indicates that data from a minimum of eight independent samplings are needed to determine a PL.

In order to return to compliance with OAC Rule 3745-27-10(E)(1), the own/operator needs to collect a sufficient number of additional ground water samples for analyses from upgradient shale zone well to calculate PLs for the shale zone, calculate those PLs, and submit this information to the Ohio EPA.

B. In the *2010 Semiannual Ground Water Assessment Monitoring Report*, concentrations of parameters detected in ground water samples from assessment wells were compared to Primary and Secondary Maximum Contaminant Level (MCL) Drinking Water Standards. Primary and Secondary Drinking Water Standards are not relevant and/or applicable to sanitary landfill sites. Further, the *July 2010 Revised Ground Water Quality Assessment Plan* indicates (pg. 4): "Prediction limits, or background values, shall be calculated by DUMPStat in accordance with OAC 3745-27-10(C)(6)(a). Any detection that exceeds the prediction limit shall be categorized as statistically significant as well as any volatile organic compound (VOC), semi-volatile organic compound (SVOC), herbicide, and/or pesticide. Should any constituent be deemed statistically significant, further statistical methods such as multiple comparison procedures to identify statistically significant evidence of contamination will be utilized in accordance with OAC 3745-27-10(C)9c) and (d)." The *2010 SAGWAMR* does not indicate that required comparisons to prediction limits or background concentrations specified in the *2010 Revised Ground Water Quality*

Assessment Plan were made. OAC Rule 3745-27-10(E)(1) requires that the owner/operator implement and comply with the ground water quality assessment plan.

In order to return to compliance with OAC Rule 3745-27-10(E)(1), the owner/operator needs to calculate PLs for the 2010 Semiannual Sampling Event, compare assessment monitoring well ground water analytical data from the 2010 Semiannual Event to those PLs, and provide that information to the Ohio EPA. Further, Ohio EPA recommends that the owner/operator remove all references to Primary and Secondary MCL Drinking Water Standards from the *2010 Semiannual Ground Water Assessment Monitoring Report* for clarity.

Facility's Response to Ohio EPA Comment/Violation #2 A

The facility's response to Comment/Violation #2A states (pg. 3) that the facility: "... will be submitting an alternate source demonstration (ASD) as allowed by OAC 3745-27-10(E)(9) which will provide information demonstrating that the brines are naturally occurring in the shale unit being monitored." The facility's response further states (pg. 3): "Should the Ohio EPA disagree with the findings and conclusions of the ASD and the associated request, HzW will collect the required samples from the upgradient shale well, calculate new PLs and submit this information to the Ohio EPA."

Ohio EPA's Response to the Facility's Response to Ohio EPA Comment/Violation #2 A

Ohio EPA received the facility's ASD on May 15, 2012, and OAC 3745-27-10(E)(9)(b) approval was issued to ALML on July 18, 2012.

Facility's Response to Ohio EPA Comment/Violation #2 B

In the facilities March 30, 2012 response to Comment/Violation #2 B, the facility submitted PL's calculated utilizing DUMPStat 2.1.9 and a Summary Table indicating SSIs for the 2010 Semiannual Sampling Event. However, PL's submitted in the March 2012 submittal had been based on background concentrations that had been improperly updated (refer to Comment/Violation #1 A and B).

On April 30, 2012, Ohio EPA requested that the facility resubmit a revised response to Comment/Violation #2 B by recalculating PLs and Summary Table for the 2010 Semiannual Assessment Sampling Events in accordance with the 2009 Unified Guidance, and using representative background concentrations updated in accordance with OAC 3745-27-10(C)(7)(g) (e.g., data in blocks of four, and in this case, data collected prior to 2010.) The Agency also requested that the facility submit properly recalculated PL's and Summary Table for the subsequent 2010 Annual Sample Event, because PL's used for that sampling event were determined utilizing background that was not properly updated in accordance with OAC 3745-27-10(C)(10).

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On May 23, 2012, ALML provided Ohio EPA with recalculated PLs by using DUMPStat 2.1.9, and determined with background data from no later than 2009 including supporting documentation and new Summary Tables indicating SSIs for the 2010 Annual and Semiannual Assessment Sampling Events.

Ohio EPA's Response to the Facility's Response to Ohio EPA Comment/Violation #2 B

The facility adequately responded to Comment/Violation #2 B and demonstrated that the facility has returned to compliance with OAC 3745-27-10(E)(1). Also, the facility also adequately responded to a request for additional information regarding PL and background, adequately demonstrating that the facility has returned to compliance with OAC 3745-27-10(C)(10).

OHIO EPA COMMENT/VIOLATION #3

The facility owner/operator at the Avon Lake Municipal Landfill is in violation of OAC Rule 3745-27-10(E)(7) requiring that all ground water elevation, sample analysis and statistical analytical results generated in accordance with paragraphs (B), (C), (D), (E), and (F) of this rule be submitted to the Ohio EPA no later than 75 days after sampling the well.

On September 8, 2010, Ohio EPA received the *2010 Semiannual Ground Water Assessment Monitoring Report*. The date that the Agency received the aforementioned report was 93 days after the 2010 Semiannual Sampling Event was initiated on June 7, 2010.

Facility's Response to Ohio EPA Comment/Violation #3

"All future reports will be submitted within the required time periods specified in OAC 3745-27-10(E)(7)."

Ohio EPA's Response to the Facility's Response To Ohio EPA Comment/Violation #3

Although the facility's response to Comment/Violation #3 is appropriate, the violation stands.

OHIO EPA COMMENT/REQUEST FOR ADDITIONAL INFORMATION #4

Compliance with OAC Rule 3745-27-10(C)(3)(b) requiring that the owner/operator determine for the uppermost aquifer system and for all significant zones of saturation monitored, the direction of ground water flow each time water elevation measurements are performed.

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The December 6, 2011 Potentiometric Surface Map for the Shale Zone (Figure 4) in the 2011 AGWAMR indicates that flow patterns have significantly changed from the original June 2011 version of the Potentiometric Map included in the *2011 Ground Water Quality Assessment Report*. MW-11, originally shown (June 2011 version) to be an upgradient well, is shown to be downgradient of MW-6 and MW-10. The Shale Zone monitoring wells include: MW-6, MW-10, MW-11, and MW-12. There appears to be about a 30-foot differential between the shallowest shale zone monitoring well MW-6, and the deepest MW-10. It is unclear if MW-11 is an upgradient well, and what the ground water flow direction is in the shale zone. These four wells may not represent the same hydrogeologic unit.

Please provide an explanation of the apparent change in the potentiometric surface that occurred between June and December 2011 and/or re-evaluate the interpretation of the potentiometric surface in the shale zone.

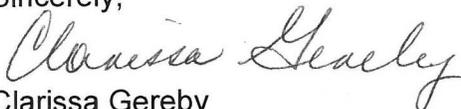
Facility's Response to Ohio EPA Comment/Request of Additional Information

The Facility's March 30, 2012 submittal did not include a response to Ohio EPA's Comment/Request for Additional Information.

Please respond to this Request for Additional Information to Determine Compliance within 45 days of receipt of this letter. If you have any technical questions regarding this review, please do not hesitate to contact Albert Muller at (330) 963-1211. Please submit all future correspondence to Clarissa Gereby, Ohio EPA, Division of Materials and Waste Management, Northeast District Office 2110 East Aurora Road, Twinsburg, Ohio 44087.

Nothing in this letter shall be construed to authorize any waiver from any requirements of applicable state solid waste laws or regulations. This authorization shall not be interpreted to release the City or others from responsibility under ORC Chapters 3704, 3714, 3734, or 6111, the Federal Clean Water Act, the Resource Conservation and Recovery Act, the Toxic Substances and Control Act or the Comprehensive Environmental Response, Compensation and Liability Act, or from other applicable requirements for remedying conditions resulting from any release of contaminants from the facility to the environment.

Sincerely,



Clarissa Gereby
Environmental Specialist
Division of Materials and Waste Management

cc: Fleming Mosely, Lorain City Health Department
Al Muller, DDAGW, NEDO
Suzanne Eden, HzW Environmental Consultants, LLC
Dwight Williams, HzW Environmental Consultants, LLC
File:[Singh/Land/Avon Lake/GRO/47] DMWM #s 3489, 4077, 4209