



State of Ohio Environmental Protection Agency

Northeast District Office

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Twinsburg, Ohio 44087

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Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

December 30, 2009

RE: RES SITE B LANDFILL
GROUND WATER MONITORING
NOTICE OF VIOLATION

CERTIFIED MAIL

Yogi Chokski
Reserve Environmental Services
4633 Middle Road
P.O. Box 1038
Ashtabula, Ohio 44004

Dear Mr. Chokshi:

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the document titled "Groundwater Monitoring Program/Sampling and Analysis Plan for the Industrial Solid Waste Landfill at Reserve Environmental Services, Inc. - October 2008." The document is dated November 18, 2008 and it was received by Ohio EPA on November 19, 2008. The document was submitted by Reserve Environmental Services (RES) in regards to the Site B landfill. The owner/operator of RES is responsible for conducting ground water monitoring in accordance with Ohio Administrative Code (OAC) Rules 3745-29-10 and 3745-30-08, as effective August 15, 2003.

Upon review of the document, Ohio EPA identified the following violations:

1. **OAC 3745-30-08(C)(1)** states, in part, "[t]he ground water monitoring program shall include consistent sampling and analysis procedures that are protective of human health and safety and the environment and that are designed to ensure monitoring results that provide an accurate representation of ground water quality at the background and downgradient wells installed in accordance with paragraph (B) of this rule. Sampling and analysis procedures employed in the ground water monitoring program shall be documented in a sampling and analysis plan which shall be included in the ground water monitoring program plan required by paragraph (A) of this rule..."

The owner/operator failed to list the appropriate parameters to be sampled and statistically analyzed on a semi-annual basis for the detection monitoring program. RES has only listed chloride, COD, and ammonia as the semiannual alternative indicator parameters and failed to list the semiannual parameters required by OAC Rule 3745-30-08(D)(1). However, chloride, COD, and ammonia have never been approved by the Director of Ohio EPA.

The owner/operator must revise the GWMP/SAP to list the semiannual parameters required by OAC Rule 3745-30-08(D)(1) Appendix III-H:

Temperature
Specific conductance
pH
Ammonia
Calcium
Chloride
Iron
Nitrate-nitrite
Potassium
Sodium
Sulfate
Total alkalinity

2. **OAC 3745-30-08(C)(2)** states that *“Ground water elevations shall be measured within a single twenty-four-hour period in all monitoring wells at least semi-annually and in each well prior to purging and sampling. The owner or operator shall determine, for the uppermost aquifer system and for all significant zones of saturation monitored, the direction of ground-water flow at least semi-annually. The ground water elevations and direction(s) of flow shall be shown on a potentiometric map(s) submitted with the sampling data.”*

The owner/operator failed to incorporate the water level elevations for each well on the potentiometric maps. Although page seven of the Groundwater Monitoring Program/Sampling and Analysis Plan states that there will be a table showing the Site B static water elevation data, the water level elevations for each well must also be shown on the potentiometric maps. This will necessitate preparing potentiometric maps at such a scale that this information is legible. (It is suggested that, in lieu of a whole facility map, the owner/operator prepare potentiometric maps solely for Site B in order to minimize the size of the map needed).

To come into compliance with the rule, the GWMP/SAP must be revised to indicate that the static water level elevations for each well will be shown on potentiometric maps.

3. **OAC 3745-30-08(C)(1)(b)** states, in part, that the ground water monitoring program shall include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of ground water quality at the background and downgradient wells and shall include a detailed description of the equipment, procedures, and techniques to be used for the collection of ground water samples *“Collection of ground water samples, including (i) Well evacuation. (ii) Sample withdrawal. (iii) Sample containers and handling. (iv) Sample preservation.”*

The owner/operator failed to adequately describe and document a sample withdrawal method that will ensure the collection of representative ground water samples.

With regard to VOC samples, page 12 of the Groundwater Monitoring Program/Sampling and Analysis Plan (GWMP/SAP) states that, "if there are any bubbles, open the bottle, fill the cap with sample, use it to create a meniscus, and try again." This is incorrect, since the presence of bubbles should result in the sample being discarded and a new vial collected.

The owner/operator must revise the plan to include more detailed instructions for the collection of VOC samples. The following steps should be included:

- a. VOC samples will be collected gently and in a manner that minimizes agitation and aeration of the samples (no air bubbles should pass through the sample as the vial is filled);
 - b. VOC vials will be filled to form a meniscus;
 - c. Vial caps will be replaced gently to avoid capturing air bubbles;
 - d. All vials will be inverted and checked for headspace or air bubbles;
 - e. The presence of air bubbles or headspace will result in the sample being discarded and a new vial collected;
 - f. No vials will ever be re-opened and topped off to remove air bubbles. The vial will be discarded and a new vial collected;
 - g. Unpreserved vials will be collected if unusual bubble formation occurs during sample collection due to interaction between preservative and groundwater.
4. **OAC 3745-30-08(B)(3)(d)** states that *"[t]he design, installation, development, maintenance procedures, and abandonment of any monitoring wells, piezometers, and other measurement, sampling, and analytical devices shall be documented in the ground water monitoring program plan."*

The owner/operator failed to provide design, installation, development, maintenance procedures, and abandonment of any monitoring wells, piezometers, and other measurement, sampling, and analytical devices in the ground water monitoring program plan.

Table 1 in the plan specifies 18 monitoring wells, but Appendix A only contains boring and well construction logs for 13 wells. Missing are logs for 804S, 811S, 811D, 906S, 906D, 917S and 917D. In addition, Appendix A contains boring and well construction logs for a well pair (930S and 930D) that isn't specified in the plan. The owner/operator must revise the GWMP/SAP by including the additional boring and construction logs.

5. **OAC 3745-30-08(B)(3)(d)** states "*[t]he ground water monitoring system shall include a sufficient number of wells, installed at appropriate locations and depths, to yield ground water samples from both the uppermost aquifer system and any significant zones of saturation that exist above the uppermost aquifer system that do the following:*
 - a) *Represent the quality of the ground water that has not been affected by past or present operations at the landfill facility.*
 - b) *Represent the quality of the ground water passing directly downgradient of the limits of solid waste placement.*
 - c) *Based on site-specific situations, surface water monitoring of seeps, springs, or streams in addition to or as a partial alternative to the ground water monitoring may be proposed by the owner or operator or may be required by the director."*

6. **OAC 3745-30-08(B)(3)(d)** states "*[t]he number, spacing, and depth of ground water monitoring wells, included in the ground-water monitoring system shall be as follows:*
 - a) *Based on site-specific hydrogeologic information.*
 - b) *Capable of detecting a release from the landfill facility to the ground water at the closest practicable location to the limits of solid waste placement."*

The owner/operator failed to demonstrate a sufficient number of wells were installed at appropriate locations, spacing, and depths, to represent the quality of groundwater upgradient and directly downgradient of the landfill, and is capable of detecting a release to the groundwater.

The owner/operator has not submitted a map from which it may be determined whether or not the monitoring system includes a sufficient number of wells installed at appropriate locations and spacing.

Therefore, a legible map illustrating the locations and numbers of the monitoring wells in the groundwater monitoring system should be included in the GWMP/SAP so that it may be determined if the wells are installed at appropriate locations and spacing.

Upon review of the document, Ohio EPA needs additional information to determine compliance with the ground water rules:

1. Further information is needed to determine compliance with Rule OAC 3745-30-08(C)(1)(b) which requires adequate description and documentation of a sample withdrawal method that will ensure the collection of representative ground water samples.

Page eight of the GWMP/SAP specifies that dedicated micropurging/sampling systems have been installed in all regularly sampled wells at RES. The GWMP/SAP further indicates that these systems eliminate the need to remove three casing volumes of water, by pumping water directly from the screened interval at a low rate. However, on page nine of the GWMP/SAP provides a table of lengths and minimum purge volumes that must be removed before beginning sampling. These purge volumes start at a low of 3.25 gallons and go as high as 9.75 gallons depending on the length. It is unclear what length is being referred to (such as length of screen, length of pump tubing, or other), and it does not follow the generally accepted procedure for low flow sampling which requires removal of a volume of groundwater equal to the volume of the bladder pump and tubing used for sampling the well, prior to the start of collecting field stabilization measurements (pH, specific conductance and temperature). The owner/operator is strongly encouraged to consult Ohio EPA's Technical Guidance Manual chapter on sampling procedures. The owner/operator needs to show the length and diameter of the pump tubing for each well in the GWMP/SAP along with the volume of the low flow pump(s) in order to illustrate that the minimum purge volume is appropriate.

While allowable by the rules, Ohio EPA does not see many facilities using Tolerance intervals and the Kruskal Wallis ANOVA methods, because a very large data set is required to use Tolerance intervals method properly (which RES does not have) and the Kruskal Wallis ANOVA method is prone to a large number of false positives. Whereas, the statistics program Prediction Limits (both parametric and non-parametric) is generally used as the most up-to-date method.

2. The owner/operator has provided insufficient information to determine compliance with OAC Rule 3745-30-08(C)(1)(c) which requires that the GWMP/SAP include a section on procedures and forms for recording raw data.

On page 12 of the GWMP/SAP, the owner/operator states that the sampling technician will keep an up-to-date field logbook. However, missing from the data to

be recorded is the purge data. This data is critical for determining whether or not representative groundwater samples were collected.

In order to demonstrate compliance with this rule, the owner/operator needs to revise the GWMP/SAP to include the recording of purge data in the field log book.

3. The owner/operator has provided insufficient information to determine compliance with OAC Rule 3745-30-08(C)(8), which requires that all groundwater analysis results be submitted to Ohio EPA.

The GWMP/SAP does not state that a copy of the field data for each well will be submitted to Ohio EPA with each respective semiannual and annual sampling report. The field data collected during sampling of each well is vital to demonstrate that representative samples were collected.

In order to demonstrate compliance with this rule, the owner/operator should revise the GWMP/SAP to indicate that copies of the field data for each well will be submitted with each semiannual and annual sampling report.

Ohio EPA recommends that RES use a field form(s) for each sampling event to record and report all field data obtained prior to and during purging and sampling. This will help to assure uniformity and completeness of both procedures followed and data reported. It is recommended that the form(s) include the following information:

- A table with purge data including date, time, depth to water, volume purged (cumulative and/or amount per time step), pH, conductance, temperature and turbidity;
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- Well data such as well depth; initial water level, date and time; well casing inside diameter; and well volume;
- Type of purging/sampling equipment, whether equipment is dedicated and volume of water in pump and pump tubing;
- Calculations of well and total purge volumes;
- Additional pertinent information such as facility, well number and field representative;
- Units of measure utilized;
- Instrument calibration; and

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Reserve Environmental Services
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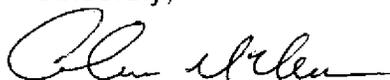
A table with sampling data including date, time, the final pH, temperature, conductivity and turbidity measurements, appearance of sample and any sample odor.

Please respond to this letter in writing within fourteen (14) days to indicate how you have abated or will abate the above violations.

Nothing in this letter shall be construed to authorize any waiver from the requirements of any applicable state or federal laws or regulations. This letter shall not be interpreted to release the owner/operator of RES from responsibility under Chapters 3704, 3714, 3734, or 6111 of the Ohio Revised Code or under the Federal Clean Water or Comprehensive Environmental Response, Compensation, and Liability Acts for remedying conditions resulting from any release of contaminants to the environment.

If you have any technical questions regarding this review, please contact Kathryn Epp at (330) 963-1233. Please submit all correspondence to Colum McKenna, Division of Solid and Infectious Waste Management, Northeast District Office, Ohio EPA, 2110 East Aurora Road, Twinsburg, Ohio 44087.

Sincerely,



Colum McKenna
Environmental Specialist
Division of Solid and Infectious Waste Management

CJM:cl

cc: Kathryn Epp, NEDO-DDAGW
Ray Saporito, Ashtabula County Board of Health
File: [Kurko/LAND/RES Site B Landfill/GRO/04]

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1. Article Addressed to:

Yogi Chokski
Reserve Environmental Services
4633 Middle Road
P.O. Box 1038
Ashtabula, Ohio 44004

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