



State of Ohio Environmental Protection Agency

**Northwest District Office**

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

Re: Ground Water Sampling Events  
Unitcast Landfill, Lucas County

June 13, 2008

Mr. Timothy Murphy  
Environmental Services Division  
City of Toledo  
348 South Erie Street  
Toledo, Ohio 43604

Dear Mr. Murphy:

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the compliance report dated May 1, 2008, and the report of ground water quality for the May 17, 2006, sampling event for the Unitcast Landfill. Ohio EPA's comments are listed below

**COMMENTS**

***Report of Groundwater Quality for the May 17, 2006 Unitcast Groundwater Sampling Event***

**More Information Needed To Determine Compliance**

1. **Compliance with OAC Rule 3745-27-08(C)(1), requiring 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 cannot be determined at this time. The owner/operator needs to do one of the following:**

**Revise the Ground Water Detection Monitoring Sampling and Analysis Plan to document the new field parameter stabilization criteria as noted below;**

**OR**

**Demonstrate to Ohio EPA how the current field parameter stabilization criteria, or lack of, in the Ground Water Sampling and Analysis Plan meet the requirements of OAC Rule 3745-27-08(C)(1).**

According to the report, page 2, paragraph 3, lines 4-7, "Consistent with the methods and procedures identified within the facility's FSP, well purging continued until both a minimum of three well volumes was removed and the physical parameters had stabilized to within ten percent".

According to The Groundwater Sampling and Analysis Plan for the Unitcast Residual Waste Landfill, Toledo, Lucas County, Ohio dated April 1993 was revised May 2005, SOP 1901, step 7, on pages 2 and 4 states, "Evacuate three casing volumes (3V) or until pH, temperature, and conductivity stabilize." There is no mention of what the stabilization criteria are in the plan.

Based on review of current technical literature, Ohio EPA now considers the criteria for stabilization of these field parameters to be  $\pm 0.1$  Standard Units (S.U.) for pH,  $\pm 3\%$  for conductivity, and  $\pm 0.5$  ° C for temperature. Also, a parameter should be considered stable when at least three consecutive readings have stabilized.

According to the Well Sampling Data Log for well MW2, temperature did not stabilize to within ten percent over the last three measurements.

2. **Compliance with OAC Rule 3745-27-08(C)(1), requiring 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 cannot be determined at this time. The owner/operator needs to confirm how the collection of excessively turbid samples from well MW3R provides results which are representative of the ground water quality of the site. The owner/operator also needs to insure that low turbidity samples are collected from the wells at the site. The well needs further development in order to lower the turbidity.**

According to Table 2.0 in the report, the field turbidity reading for MW3R was 2519 NTU. Excessive turbidity can adversely impact parameter concentrations producing results which are not representative of the ground water quality at the site. Ideally, turbidity should be less than 10 NTU.

Arsenic, barium, cadmium, calcium, chromium, iron, magnesium, manganese, and lead were all significantly higher in well MW3R than in the upgradient well MW1R. The concentration of arsenic (51 ug/L) exceeded the MCL of 5 ug/L.

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The concentration of iron (79.4 mg/L) exceeded the SMCL of 0.30mg/L. Lead (56.5 ug/L) exceeded the action level of 15 ug/L. It appears that the concentrations of the inorganic parameters were due to excessive turbidity.

- 3. Compliance with OAC Rule 3745-27-08(C)(1), requiring that the ground water monitoring program shall include consistent sampling and analysis procedures cannot be determined at this time. The owner/operator needs to explain how field and laboratory turbidity results meet the requirement for consistent procedures.**

There is a large difference between the field turbidity and laboratory turbidity readings as can be seen in the table below. The sample appearance recorded on the Well Sampling Data Logs ranged from cloudy to slightly cloudy indicating a higher turbidity than the field readings for MW1R/MW1R duplicate and MW2. Turbidity is a function of the amount of sediment in the samples. Turbidity is not easily detected when the concentrations are less than 100 NTU.

<i>Well</i>	<i>Field Turbidity NTU</i>	<i>Laboratory Turbidity NTU</i>	<i>Sample Appearance</i>
MW1R	25.8	4.63	Cloudy to Slightly Cloudy
MW1R Dup	37.1	4.50	Cloudy to Slightly Cloudy
MW2	37.1	9.27	Cloudy to Slightly Cloudy
MW3R	2519	28.5	Cloudy

#### **Statement**

- 4. The owner/operator is violation of Ohio Administrative Code (OAC) Rule 3745-30-08(C)(8) requiring that all ground water analysis results and ground water elevation data be submitted not later than seventy-five days after sampling the wells. In order to be in compliance with the cited rule for all future sampling events, the owner/operator needs to submit all ground water data within seventy-five days of sampling the wells.**

The Sampling event took place on May 17, 2006. The Report of Groundwater Quality for the May 17, 2006 Unitcast Groundwater Sampling Event is dated August 4, 2006. The report was received by Ohio EPA on August 2, 2007; 442 days after sampling the wells. The report would need to have been submitted to Ohio EPA by July 31, 2006 to have been in compliance with OAC 3745-30-08(C)(8).

***Unitcast Site – Compliance Report, Dated May 1, 2008***

**Violations**

5. **The owner/operator is violation of OAC Rule 3745-30-08(C)(8) requiring that all ground water elevation data be submitted not later than seventy-five days after sampling the wells and OAC Rule 3745-30(C)(1) requiring the owner/operator to use the methods documented in the sampling and analysis plan . In order to be in compliance with the cited rules for all future sampling events, the owner/operator needs to submit all ground water elevation data within seventy-five days of sampling the wells and follow the procedures in the Groundwater Sampling and Analysis Plan for the Unitcast Residual Landfill Revised May 2005.**

The May 1, 2008 report does not contain any ground water elevation data. The last data report received by Ohio EPA, dated August 4, 2006 contained the information in the form of a potentiometric surface map and a table of elevations.

According to the Groundwater Sampling and Analysis Plan for the Unitcast Residual Landfill Revised May 2005, page 4-1, last paragraph, "Groundwater surface elevation tables and/or maps will be prepared and submitted with each report of the laboratory analytical data."

**More Information Needed To Determine Compliance**

6. **Compliance with OAC Rule 3745-27-08(C)(1), requiring 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 cannot be determined at this time. The owner/operator needs to submit the field and laboratory QA/QC data in order for Ohio EPA to be able to determine if the analytical results give an accurate representation of the ground water quality at the site and to maintain compliance with OAC 3745-30-08(C)(1).**

The May 1, 2008 report does not contain well sampling data logs, chain of custody sheets and the laboratory case narrative/laboratory QA/QC data. The last data report received by Ohio EPA, dated August 4, 2006 contained all this information.

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If you have any questions please feel free to contact Jack Leow at Ohio EPA's Northwest District Office, 1-419-373-3095. Any written correspondence should be sent to the attention of Mike Reiser, Division of Solid and Infectious Waste Management, Ohio EPA Northwest District Office, 347 N. Dunbridge Road, Bowling Green, Ohio 43402.

Sincerely,

*Michael A. Reiser*

Michael A. Reiser, R.S.  
Environmental Supervisor  
Division of Solid and Infectious Waste Management

/csl

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