



State of Ohio Environmental Protection Agency

**Northwest District Office**

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

Re: Residual Waste Landfill  
Groundwater

March 11, 2008

Mr. Brad Hemminger, Project Manager  
United States Gypsum Company  
Gypsum, Ohio 43433

Dear Mr. Hemminger:

On February 25, 2008, the Ohio Environmental Protection Agency (Ohio EPA), Northwest District Office (NWDO), received a letter dated February 15, 2008, in response to an Ohio EPA comment letter dated August 24, 2007, for the United States Gypsum Company's (US Gypsum) Residual Waste Landfill (Facility) in Ottawa County. The submittal was reviewed to determine compliance with Ohio Administrative Code (OAC) Chapter 3745-30, an approved Closure Plan, and the Director's Findings and Orders dated October 12, 1994. Below are Ohio EPA's comments regarding the review.

**COMMENTS**

**Evaluation of Responses to Previously Cited Violations**

1. **U.S. Gypsum Company continues to be in violation of OAC Rule 3745-30-08(E)(4), which requires the assessment wells to be analyzed semiannually for Appendix III and parameters determined to be released. The owner/operator needs to sample wells MW7 and MW8 as required by the rule.**

According to the February 15, 2008, letter from the owner/operator, " U.S. Gypsum's understanding is that we are in compliance with this rule based on the fact that we completed the required semi-annual sampling activities on April 23, 2007, for all assessment monitoring wells designated in the April 2007 Groundwater Quality Assessment Plan...The GWQAP does not designate monitoring wells MW-7 and MW-8R as assessment monitoring wells due to our interpretation of OAC 3745-30-08(D)(13), which states, in part, that "if there has not been an increase above background levels of waste-derived constituents at any monitoring well downgradient of the facility, then the owner or operator shall request that the director approve reinstatement of the detection monitoring program ... we ask that you provide further written clarification on your interpretation of OAC Rule 3745-30-08(D)(13) as the Rule is unclear to us that the subject wells should assume an assessment designation."

The following paragraphs are provided for further clarification:

In accordance with OAC Rule 3745-30-08(D)(10), affected monitoring wells MW4 and 5 were sampled on April 20, 2006 for the parameters listed in Appendix II of the rule. Nickel was detected in well MW5.

In accordance with OAC Rule 3745-30-08(D)(11), monitoring wells MW1, 3 and 6, designated as background monitoring wells, were sampled on July 19, 2006. According to an October 2, 2006, letter/report, page 2, paragraph 2, from the owner/operator "A review of the July 2006, analytical data reported for background wells MW-1, MW-3, and MW-6 as compared to the April 2006, data reported for affected wells MW-4 and MW-5 indicates the following waste-derived constituents were reported above background levels: ...nickel, ... Therefore, monitoring wells ...MW-7, MW-8R, ...will be sampled and analyzed for the above listed waste-derived constituents by October 16, 2006..."

In accordance with OAC Rule 3745-30-08(D)(12), requiring "The owner or operator shall, within ninety days of sampling the background wells as required by paragraph (D)(11) of this rule, sample all monitoring wells not sampled in accordance with the provisions of paragraphs (D)(10) and (D)(11) of this rule and those samples shall be analyzed for those waste-derived constituents found to be above background levels in the affected monitoring wells sampled in accordance with paragraph (D)(10) of this rule." This sampling is conducted to further define the rate, extent and concentration of the contamination. According to the Statistical Report of Groundwater Quality dated December 2006, the (D)(12) sampling was conducted on October 9<sup>th</sup> and 10<sup>th</sup>, 2006. According to page 2, "...nickel was reported above the laboratory PQL in monitoring wells MW-5, MW-7, and MW-8R. The Facility is... and will proceed to comply with paragraphs (D)(13) and (E) of OAC 3745-30-08." According to the letter/report, the concentrations of nickel in wells MW7 (19.6 ug/L) and MW8 (26.0 ug/L) were at least double the concentration of the background wells (<10 ug/L). The background wells were reported as being less than the detection limit for nickel. Therefore, at this point in time wells MW7 and MW8 were drawn into assessment because nickel, a waste-derived constituent, was detected above the level of the background wells.

The Groundwater Quality Assessment Plan dated April 2007, does not designate monitoring wells MW-7 and MW-8R as assessment monitoring. The Ohio EPA sent a letter dated July 10, 2007 to the owner/operator. The letter contained comments concerning the review of the April 2007, Groundwater Quality Assessment Plan. According to comment 5, "*The assessment monitoring wells for the facility are MW4, MW5, MW7 and MW8 based on the initial statistical exceedances and the Appendix II sampling of all of the monitoring wells.*" The Ohio EPA has not received a response to this letter.

According to the letter/report dated July 6, 2007, from the owner/operator, wells MW1, 3, 4, 5, and 6 were analyzed to meet the requirements of OAC Rule 3745-30-08(E)(4).

Samples were not collected from wells MW7 and 8R. In response Ohio EPA sent the August 24, 2007, letter. According to comment number 1 in the Ohio EPA letter, "According to the Groundwater Quality Assessment Plan dated April 2007, page 19, "Nickel was reported just slightly above the PQL in groundwater samples collected from MW-7 and MW-8 at 0.0196 mg/L and 0.026 mg/L. Statistical significances have not been identified for indicator parameters analyzed in these monitoring wells." According to Tables 4, 6 and 9 the background concentration for nickel is <0.01 mg/L."

*"The concentration of nickel in wells MW7 (19.6 ug/L) and MW8 (26.0 ug/L) was at least double the concentration of the background wells (<10 ug/L). The background wells were reported as being less than the detection limit for nickel. Nickel was determined to be above background (< 10 ug/L) in wells MW7 and MW8. Therefore, wells MW7 and MW8 should be in assessment. Wells determined to be in assessment are required to be sampled semiannually according to OAC Rule 3745-30-08(E)(4). In order to return to compliance the owner/operator needs to sample wells MW7 and MW8 according to OAC Rule 3745-30-08(E)(4) as soon as possible and continue to be sampled on a semiannual basis."*

According to the Statistical Report of Groundwater Quality dated December 2007, samples were not collected and analyzed for the Appendix III parameters in wells MW7 and 8R (this report will be discussed in a separate Ohio EPA letter).

The owner/operator did not submit a request to the director according to (D)(13) for the detections of nickel above the background levels, and as required by (D)(13) "...the owner or operator shall continue to comply with paragraphs (D)(10) to (D)(12) and (E) of this rule.

In order to regain compliance with OAC Rule 3745-30-08(E)(4), the owner/operator should sample wells MW7 and 8R for the appendix III parameters and those parameters determined to be released by the director.

## Statements

2. **The owner/operator has submitted several reasons why the nickel detected in wells MW7 and 8R is not of concern. The Ohio EPA has addressed each of these reasons below:**
  - a. **Nickel is a naturally occurring element in soil, bedrock, and groundwater and is often encountered at low concentrations in groundwater samples collected in Ohio.**
    - . Nickel is also a waste-derived constituent.

**b. The nickel values reported ... are similar to ambient nickel concentrations in Ohio groundwater as provided in Ohio EPA's "Ohio Ground Water Quality 2006, 305(b) Report"**

The closest ambient well is located approximately 20 miles to the south and west of US Gypsum. The owner/operator is required to compare to background wells on site which has been done. While it is true that the nickel concentrations at MW7 and 8R are within the range of concentrations reported for Ohio's ambient ground water monitoring network, this fact has little relevance to the owner/operator's explanation. Ohio's ambient ground water quality database has been collected from numerous wells across the state which are screened in various types of aquifers. Therefore, the ambient database inherently exhibits a reasonably broad range of constituent concentrations. The wells at Elmore (southwest Ottawa County) and Green Springs (southern Sandusky County – no longer in operation) are located more than 19 miles from the landfill. Considering this, the ground water quality data from Elmore and Green Springs is not a good basis for comparison to the ground water quality at MW7 and 8R.

**c. Although nickel was reported just slightly above the ...(PQL) in groundwater samples collected from MW-7 (0.0196)mg/L and MW8R (0.026 mg/L) during the October 2006, sampling event, statistical significances have not been identified for indicator parameters required to be statistically analyzed in these monitoring wells.**

The reason for doing the comparison required by OAC Rule 3745-30-08(D)(12) is to insure that any waste derived constituents detected in the affected wells are not leaking out of other areas of the landfill. Statistical significance of the indicator parameters is not necessary when parameters are found to be above background when doing the comparison required by OAC Rule 3745-30-08(D)(12). Nickel was detected in wells MW7 and 8R at nearly double the concentration of the background wells (<10 ug/L). The background wells were reported as being less than the detection limit for nickel. Nickel was determined to be above background (< 10 ug/L) in wells MW7 and MW8. The owner/operator did not submit a request according to paragraph (D)(13) for reinstatement to detection monitoring.

**d. The values reported in monitoring wells MW-7 and MW-8 are similar to background concentrations reported in groundwater samples collected from designated reference monitoring wells MW-1 and MW-3 (<0.01 to 0.0159 mg/L).**

The nickel values for MW7 and 8R were nearly double the concentration of the background wells (<10 ug/L). The background wells were reported as being less than the detection limit for nickel when the samples were collected in October 2006.

The concentrations of nickel for wells MW1 (12.7 ug/L) and MW3 (15.9 ug/L) for the most recent sampling event (December 2007) are still lower than the values for MW7 and 8R.

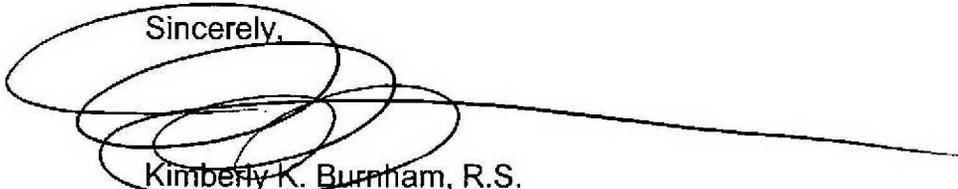
- e. **One detection of nickel, a naturally occurring element, in groundwater samples collected from monitoring wells MW-7 and MW-8R during one sampling event does not constitute an increase above background values in monitoring wells MW-7 and MW-8.**

One detection of nickel in each well (MW7 and 8R) during the same sampling event without a resampling event to refute the initial detection constitutes an increase above background.

3. **According to OAC Rule 3745-30-08(E)(5), if the owner/operator determines, based on the results of the determination made according to paragraph (E)(2) of the rule that no waste-derived constituents have entered the ground water, then the owner/operator can request the director approve reinstatement of the detection monitoring program.**

If you have any questions, please contact Jack Leow, C.P.G., at the Ohio EPA Northwest District Office at (419) 352-8461. Any written correspondence should be sent to the attention of Kimberly Burnham, Division of Solid and Infectious Waste Management, Ohio EPA Northwest District Office, 347 N. Dunbridge Road, Bowling Green, Ohio 43402.

Sincerely,



Kimberly K. Burnham, R.S.  
Environmental Specialist  
Division of Solid and Infectious Waste Management

/llr

pc: Jack Leow, DDAGW, NWDO  
File: Ottawa-County-US-Gypsum-groundwater >  
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