



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

November 30, 2012

RE: **MILLENNIUM LANDFILL  
GROUND WATER MONITORING  
NOTICE OF VIOLATION**

**CERTIFIED MAIL 7011 0470 0002 3496 1191**

Mr. Rick Hughes  
Millennium Inorganic Chemicals, Inc.  
2426 Middle Road  
Ashtabula, Ohio 44004

Dear Mr. Hughes:

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the *May 2012 Semiannual Statistical Report of Ground Water Quality for the Millennium Inorganic Chemicals, Inc.* The report is dated July 27, 2012 and was received by Ohio EPA on August 6, 2012. The report was prepared and submitted to the Ohio EPA by TM Engineering, Inc. on behalf of Millennium Chemicals, Inc. (Millennium). Millennium is the owner of the Millennium Ashtabula Landfill (MAL). Millennium is conducting ground water detection monitoring in accordance with the Millennium Ashtabula Landfill site specific ground water detection monitoring plan (GWDMP) and Ohio Administrative Code (OAC) 3745-29-10 (A)(1), effective October 30, 2008 and OAC 3745-30-08, effective February 1, 2008.

Ohio EPA noted that the May 23, 2012 sampling event included ground water from a total of five shale bedrock monitoring wells and four shallow significant zones of saturation piezometer samples.

Upon review of the report, Ohio EPA determined that Millennium remains in violation of OAC Rule 3745-30-08(C)(7).

**OAC Rule 3745-30-08(C)(7)** states, in part, that “[t]he owner or operator shall determine whether or not there is a statistically significant increase (or change in the case of pH) from background values for each parameter or constituent required by paragraph (D), (E), or (F) of this rule, as applicable. The owner or operator shall make this statistical determination semi-annually ... To determine whether a statistically significant increase or decrease has occurred, the owner or operator shall compare the ground water quality of each parameter or constituent at each downgradient ground water monitoring well to the background value of that

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*parameter or constituent according to the statistical procedures specified in paragraphs (C)(5) and (C)(6) of this rule.”*

Millennium failed to properly follow the Shewhart-CUSUM Control Chart statistical methodology to completion. In addition, the issue of what constitutes or should constitute background has not been settled. It is not clear how Millennium evaluated the background data for trends and outliers before defining background and performing the Shewhart-CUSUM Control Chart method. Ohio EPA encourages Millennium to consult with Chapter 20 of the “Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities Unified Guidance,” March 2009 (EPA 530/R-09-007), for the latest guidance and instruction in utilizing the Shewhart-CUSUM Control Chart method. Ohio EPA would also like to encourage Millennium to consider using one of several statistical software packages that are available for assisting landfills in the structure and execution of statistical analysis of ground water data, including, but not limited to: DUMPStat®, Sanitas®, and AquaChem® to name a few.

Furthermore, the Wilcoxon rank-sum test is being used inappropriately. The test is to be used for comparing two datasets or groups of data. The Wilcoxon rank-sum test is better suited for use when conducting background update. Please consult Part III of the “Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities Unified Guidance,” March 2009 (EPA 530/R-09-007) for correct use of the procedure. In detection monitoring, we are comparing a single value against a group of background data to determine statistical significance. For non-parametric data, landfills generally use prediction limits to make this comparison.

In addition, Ohio EPA has the following recommendation:

Ohio EPA noted that there are low levels of VOCs that were detected in the May 2012 sampling event: Benzene at 2.60 µg/L at monitoring well MW2-1, and benzene at 13.0 µg/L, ethylbenzene at 2.43 µg/L, toluene at 6.29 µg/L, and total xylenes at 4.02 µg/L at MW2-2. Ohio EPA has reviewed Millennium’s 2010 and 2011 Annual Reports and determined there are no VOCs present in the leachate. Please continue to note any VOCs present in the downgradient monitoring wells, and collect and analyze field blanks for those wells with VOCs present in the ground water during the next sampling event to determine if there are air sources of VOCs present that are contaminating the ground water samples during collection.

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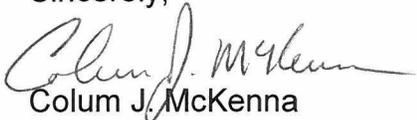
Millennium needs to immediately take the necessary measures to return to compliance with Ohio's environmental laws. Within 30 days of receipt of this letter, Millennium is requested to provide documentation to this office including the steps taken to abate the violations cited above. Documentation of steps taken to return to compliance includes written correspondence, updated policies, and photographs, as appropriate, and may be submitted via the postal service or electronically to [colum.mckenna@epa.ohio.gov](mailto:colum.mckenna@epa.ohio.gov).

Please be advised that violations cited above will continue until the violations have been properly abated. Failure to comply with Chapter 3734 of the Ohio Revised Code and rules promulgated thereunder may result in a civil penalty of up to \$10,000 per day for each violation. It is imperative that you return to compliance. If circumstances delay the abatement of violations, Millennium is requested to submit written correspondence of the steps that will be taken by date certain to attain compliance.

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 or operator, or others, from responsibility under Chapters 3704, 3714, 3734, or 6111 of the Ohio Revised Code or under the Federal Clean Water Act, Resource Conservation and Recovery Act, or Comprehensive Environmental Response, Compensation, and Liability Act for remedying conditions resulting from any release of contaminants to the environment.

Please contact Kay Springer Amey at (330) 963-1289 if you have any technical questions regarding this review. Otherwise, please submit all correspondence to Colum McKenna, Ohio EPA, Division of Materials and Waste Management, Northeast District Office, 2110 East Aurora Road, Twinsburg, Ohio 44087.

Sincerely,



Colum J. McKenna  
Environmental Specialist  
Division of Materials and Waste Management

CJM/cl

cc: Katherine Springer Amey, NEDO-DDAGW  
Ray Saporito, Ashtabula County Board of Health  
Steve Kilper, ALMI  
File: [Singh/LAND/Millennium Landfill/GRO/04]  
DMWM #4633