

John R. Kasich, Governor Mary Taylor, Lt. Governor Craig W. Butler, Director

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JUL 1 3 2018

Scott Herman Mahoning Landfill, Inc. 3510 Garfield Road New Springfield, Ohio 44443 Mahoning Landfill, Inc. Director's Authorization Approval Municipal Solid Waste Landfills Mahoning County MSWL018785

## Subject: Mahoning Landfill, Mahoning County Selection of Corrective Measure

Dear Mr. Herman:

On October 17, 2017 and February 12, 2018, the Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO) received a revised Corrective Measures Plan (CMP) for the Mahoning Landfill (Facility). The CMP was submitted by Eagon & Associates, Inc. (Eagon) on behalf of Waste Management. The CMP consists of the following documents:

- Corrective Measures Plan (Revision 3 Addendum 1), dated February 2018;
- Statistical Analysis Program for Corrective Measures Monitoring (Revision 1-Addendum 1), dated February 2018; and
- Ground Water Corrective Measures Monitoring Plan (Revision 2), dated October 2017.

The Facility is an operating municipal solid waste landfill. Waste Management is conducting ground water quality assessment for 18 contaminants of concern (COCs).

Ohio Administrative Code (OAC) Rule 3745-27-10(F) requires municipal solid waste landfills to submit a CMP upon determining, through assessment activities performed in accordance with OAC Rule 3745-27-10(E), that waste-derived contaminants have been detected in the ground water. In accordance with OAC Rule 3745-27-10(F)(10), the Director shall select from the CMP the corrective measure which best meets the criteria set out in paragraphs (F)(2), (F)(3), and (F)(7) of the rule.

OAC Rule 3745-27-10(F)(2) requires the CMP to evaluate all practicable remediation procedures which are available for remediating any contamination discovered during assessment monitoring. OAC Rule 3745-27-10(F)(3) requires the CMP to include an evaluation of each proposed remediation procedure.

## Mahoning Landfill, Inc. OAC Rule 3745-27-10(F) Page 2 of 5

In accordance with OAC Rule 3745-27-10(F)(7), the CMP shall propose a concentration level for each waste-derived constituent detected in the ground water at a statistically significant level. In accordance with OAC Rule 3745-27-10(F)(7)(a), the proposed concentration levels are required to be protective of human health and safety and the environment. In accordance with OAC Rule 3745-27-10(F)(7)(b)(i), if there is a maximum contaminant level (MCL) promulgated for the constituent, that shall be used as the concentration level. If an MCL has not been established, the background concentration shall be used unless the Director establishes an alternative ground water remediation standard (GWRS) in accordance with specific criteria established in OAC Rule 3745-27-10(F)(7)(d).

The CMP was reviewed to determine if it meets the requirements listed in paragraphs (F)(2), (F)(3), and (F)(7) of OAC Rule 3745-27-10(F). Upon review, it has been determined that the CMP includes provisions for semiannual sampling in accordance with OAC Rule 3745-27-10(F)(2); all practicable remediation procedures were evaluated (including consideration of the applicable waste-derived parameters, potential flow paths, and historical ground water results) in accordance with OAC Rule 3745-27-10(F)(3); and the ground water remediation standards meet the requirements of OAC Rule 3745-27-10(F)(7). After each semi-annual ground water sampling event, the Facility will evaluate the data and determine if the results trigger an evaluation of the Facility's source controls.

Ground water remediation standards were derived from the following:

- MCL/Secondary MCL (SMCL) or action levels;
- United States Environmental Protection Agency (U.S. EPA) Health Advisories;
- U.S. EPA Regional Screening Levels (RSL); and
- 2X highest concentration in zone

The corrective measures documents identify a total of 17 waste-derived parameters determined to be above background and one volatile organic compound (VOC) in the Middle Kittanning Sandstone (MKS) uppermost aquifer system (UAS), Lower Freeport/Middle Kittanning Coal (LF/MKC) significant zone of saturation (SZS), and the Unconsolidated SZS. The table below summarizes these waste-derived parameters and their corresponding GWRSs.

Grou	nd Water Remedial S Mahoning Landfill	tandards
Waste-Derived Parameters	GWRS (mg/L)	Basis for GWRS
	Unconsolidated SZ	S
alkalinity	1556	2 x highest concentration in zone
ammonia	30	Health Advisory
arsenic	0.01	MCL
calcium	878	2 x highest concentration in zone

## Mahoning Landfill, Inc. OAC Rule 3745-27-10(F) Page 3 of 5

chloride	250	Secondary MCL
cobalt	6	USEPA RSL
iron	88.8	2 x highest concentration in zone
magnesium	364	2 x highest concentration in zone
manganese	0.3	Health Advisory
nickel	0.1	Health Advisory
nitrate-nitrite	10	MCL
potassium	41.2	2 x highest concentration in zone
selenium	0.05	MCL
sodium	344	2 x highest concentration in zone
sulfate	2540	2 x highest concentration in zone
TDS	4980	2 x highest concentration in zone
zinc	0.606	2 x highest concentration in zone
	LF/MKC SZS	
alkalinity	782	2 x highest concentration in zone
ammonia	30	Health Advisory
calcium	772	2 x highest concentration in zone
chloride	250	Secondary MCL
iron	3.74	2 x highest concentration in zone
magnesium	197.4	2 x highest concentration in zone
manganese	0.3	Health Advisory
potassium	12.8	2 x highest concentration in zone
sodium	208	2 x highest concentration in zone
sulfate	1948	2 x highest concentration in zone
TDS	4080	2 x highest concentration in zone
	MKS UAS	
alkalinity	1252	2 x highest concentration in zone
ammonia	30	Health Advisory

## Mahoning Landfill, Inc. OAC Rule 3745-27-10(F) Page 4 of 5

calcium	872	2 x highest concentration in zone
chloride	250	Secondary MCL
iron	58.4	2 x highest concentration in zone
magnesium	372	2 x highest concentration in zone
manganese	0.3	Health Advisory
potassium	31.2	2 x highest concentration in zone
sodium	170	2 x highest concentration in zone
sulfate	1818	2 x highest concentration in zone
TDS	4120	2 x highest concentration in zone
dichlorodifluoromethane	0.2	USEPA RSL

The CMP evaluated two remedial alternatives, listed below:

Alternative 1: Waste Removal

Alternative 2: Waste Removal Combined with Pump-and-Treat

Alternative 1 is proposed by Waste Management as the preferred corrective measure. Waste removal and monitored natural attenuation were selected for the following reasons:

- Mahoning Landfill has removed all of the waste from the unlined areas and placed it in the permitted lined landfill. The absence of VOCs (except dichlorodifluoromethane) over the past 10 years demonstrates the ongoing effectiveness of waste removal activities. In addition, this source control measure should reduce the concentrations of waste-derived inorganic parameters over time.
- Corrective measures monitoring will permit detection of any future changes in the ground water quality at the Facility, which can be evaluated and considered for potential future modification of the existing corrective measures, as necessary.
- There would be minimal environmental benefit gained by implementing a ground water pump and treat operation. Furthermore, it is not justified based on the concentrations of common waste-derived parameters that have low toxicity detected in ground water downgradient of the landfill.

Ohio EPA has reviewed the CMP and CMMP as described above and determined that

Mahoning Landfill, Inc. OAC Rule 3745-27-10(F) Page 5 of 5

the CMP and remedial Alternative 1 meet the requirements listed in paragraphs (F)(2), (F)(3), and (F)(7) of OAC Rule 3745-27-10(F), including the requirement to be protective of human health and safety and the environment. Therefore, I select Alternative 1: Waste Removal as the corrective measure to be implemented at the Facility. Waste Management shall implement the selected corrective measure at the Facility in accordance with the CMP as received on October 17, 2017, and February 12, 2018.

You are hereby notified that this action of the Director of Environmental Protection (Director) is final and may be appealed to the Environmental Review Appeals Commission pursuant to Ohio Revised Code Section 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 made payable to "Treasurer, State of Ohio." The Commission, in its discretion, may reduce the fee if by affidavit it is demonstrated that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission 30 East Broad Street, 4<sup>th</sup> Floor Columbus, Ohio 43215

If you have any questions concerning this letter, please contact Clarissa Gereby of Ohio EPA, NEDO at (330) 963-1224.

Sincerely,

Craig W. Butler Director

CWB:CG

- cc: Mahoning County Health Department
- ec: Scott Herman, Mahoning Landfill, Inc. Dave Fetchko, Mahoning County Health Dept.

Project ID #s 8338, 5939, 5940, 5941