Attachment 1

OFFICE OF THE COMMISSIONER

New York State Department of Environmental Conservation
625 Broadway, 14th Floor, Albany, New York 12233-1010
P: (518) 402-8545 I F: (518) 402-8541
www.dec.ny.gov

DEC - 4 2017

Mr. Jeffrey Richardson
Sr. District Manager
Waste Management of NY, LLC
425 Perinton Parkway
Fairport, NY 14450-9104

Dear Mr. Richardson,

Residents living near the Waste Management High Acres Landfill in Perinton have complained directly to me about the recent trend of unbearable odors emanating from the facility. As a facility regulated by the Department of Environmental Conservation, I must ensure that it is being operated in a manner that does not negatively the surrounding community.

In discussing this matter with my staff, I have been advised that Waste Management has begun to implement measures designed to reduce odors migrating from the site. Local residents have not yet noticed any improvement. I am aware that you and other company representatives are meeting with my regional leadership on December 13. In advance of that meeting, by no later than close of business on December 8, please provide me with a detailed timeline of the steps that you are taking toward the goal of eliminating odors.

I also encourage you to keep the facility's neighbors and local and state elected officials apprised of your efforts. Increased communication can only serve to improve relationships among all those with a vested interest in seeing the situation improve.

Finally, I have directed my staff to continue to prioritize this matter, and to take any measures within our authority to ensure that this matter is expeditiously addressed. I trust that the company will agree that returning to a status as a good neighbor as quickly as possible and without the need for formal state action is in the best interests of all concerned.

Thank you for your prompt attention to this matter.

Sincerely,

Basil Seggos
Commissioner

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Attachment 2

WASTE MANAGEMENT

HIGH ACRES LANDFILL & RECYCLING CENTER
A WASTE MANAGEMENT COMPANY

425 Perinton Parkway
Fairport, New York 14450
585/223-6132
585/223-6898 (Fax)

December 20, 2017

Mr. Paul J. D'Amato
Regional Director, Region 8
New York State Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, NY 14414

Re: High Acres Meeting Summary

Dear Mr. D'Amato:

Thank you for the time you and your staff spent meeting with myself and representatives from Waste Management on December 13, 2017 to discuss the recent increase in offsite odors at the High Acres Landfill and our plan to address these odors. As you are aware, High Acres has a long history of operating successfully in compliance with our permits. These recent elevated odors are taken seriously by Waste Management and we are committed to investing the resources necessary to implement solutions and return to our historic good neighbor status that the community has known. This letter is intended to summarize the topics and items discussed at the December 13th meeting.

Primary Odor Contributors

High Acres has an established procedure for the community to notify the site of unusual or increased odors. That feedback is correlated with site operations to determine potential activities that may have caused the increased odor. Community members who notice an unusual or offensive odor can call the site directly 24 hours per day, 7 days per week at (585) 223-6132 to report the odor. The notification is logged, distributed via email to key operations and management personnel, and investigated to determine the potential source. A chart depicting the odor notifications received at the site in 2017 is included in Attachment 1.

While there are intermittent odors associated with any solid waste management facility, there was an increase in community odor notifications during the late summer months of 2017. This increase is directly attributable to the removal of an access road in cell 10 as we transitioned traffic flow to cell 11. The removal of the road materials required the excavation and on-site transport of odorous materials which

WASTE MANAGEMENT

resulted in the increase in intermittent odors during that timeframe. The intrusive activities performed were necessary to ensure effective management of liquid and gas in this area.

Following the completion of the road removal, we continued to note increased intermittent odors. We initiated an extensive site review involving High Acres Staff as well as internal and external industry experts in consultation with NYSDEC Region 8 to identify potential odor sources and develop best practices to mitigate them. The High Acres Landfill faced some unique challenges in 2017, including an unusually high amount of rainfall and resulting increase in leachate generation as depicted in Attachment 2. The site received over 42 inches of rain through November, compared to 27 inches in 2016, and this excess liquid in the landfill compromised portions of the landfill gas collection and conveyance system in active cells 10 and 11.

The major odor contributors were identified to be:

- A restriction in the 24-inch perimeter landfill gas header resulting in the temporary reduction of gas collection efficiency;
- Excess rainwater and leachate generation in 2017 caused the temporary "watering out" of gas collection wells and sections of collection header in cells 10 and 11;
- Reliance solely on vertical gas wells and previous generation slip form well technology (Figures 1 and 2) in cell 11 for operational landfill gas collection resulted in reduced collection, given 2017's wet weather conditions;
- A header system configuration which restricted gas collection system flexibility and ability to induce additional vacuum on odor sources; and,
- Excess rainwater compromised the ability to place and compact cover soils.

These identified issues resulted in an increase in community odor notifications beginning in the fourth quarter of 2017. As depicted on Attachment 1, approximately 70 percent of odor notifications for the site have occurred over a six week period. The recent increase in intermittent odors, we believe, are the result of unusual circumstances and will be mitigated.

Primary Mitigation Measures

The design and implementation of the mitigation measures to correct these odor issues requires careful planning, detailed engineering and regulatory approvals as well as procurement of supplies and engagement of contractors. High Acres has engaged in a fast track approach to incorporate these measures as quickly as practical. Specialty contractors and consultants were engaged to expedite the engineering, monitoring and construction tasks. The primary mitigation measures that are currently underway and will be completed in the near future include:

- The identification and removal of a restriction within the 24-inch perimeter gas collection header;
- The design, approval and installation of approximately 10,000 lineal feet of horizontal collection piping in cell 10 and cell 11;
- The design, approval, installation of an additional 24 and 18-inch vacuum header from the flare/gas to energy plant to cell 11;

- The identification, abandonment, and replacement of an approximate 1100 lineal foot sub header in cell 11;
- The design, approval and installation of 9 acres of exposed temporary geomembrane cover along the North and East slopes of cell 11; and,
- The initiation of waste placement efforts into the newly constructed cell 12, which incorporates improved gas collection measures.

The primary mitigation measures which are being implemented at the site are presented on Figure 3, which is included in Attachment 3

Long Term Odor Management

Using the information gathered from the site-wide assessment and issues identified in cells 10 and 11, WM has engineered additional collection and conveyance controls into future cells, beginning with cell 12. These represent design and performance improvements to the long term collection and conveyance of landfill gas at the facility and will be installed as site development occurs. The long-term development initiatives include:

- The incorporation of next generation free draining slip form wells, complemented with a regularly installed horizontal collection piping network (Figures 4 and 5, Attachment 3) on all new cell construction in the future;
- Hiring additional, permanent staff to support this new infrastructure construction, increase monitoring and maintenance of the landfill gas collection and conveyance system; and,
- Continued identification, replacement and repair of impaired landfill gas collection wells, laterals and headers.

Attachment 4 includes an overall implementation schedule for the mitigation measures proposed at High Acres.

In addition, High Acres has modified various operating practices with a focus on reducing off-site odors. These operational improvements include:

- The placement and compaction of additional daily and intermediate cover soils;
- Evaluating the characteristics of soils types used for cover;
- Limiting the acceptance of odorous materials;
- Incorporating additional odor neutralizing distribution systems and products at the working face and at the facility perimeter;
- Installing geomembrane liner along internal roadway stormwater collection channels;
- Incorporating a daily odor patrol around the adjacent residential areas;
- Contracting with third party consultants and contractors to increase monitoring frequency of landfill gas collection and cover systems; and,
- The additional analysis of landfill gas collection system components.

WASTE MANAGEMENT

Communications

We have also developed a plan to improve communication with the community during the implementation of the mitigation measures and beyond. As you are aware, the majority of work being performed to reduce the offsite odors, may in fact result in the temporary increase in odors due to the excavation within the waste, or the necessary shutdown of components of the landfill gas collection system to "tie in" or connect new headers and laterals. The elements of this community outreach plan include the following:

- Conducting tours and individual meetings with residents;
- Community information meeting at High Acres administrative offices held on December 11th;
- Neighborhood Update tab created on our website www.highacreslandfill.wm.com. This will include weekly updates on mitigation work completed and planned work for the week ahead;
- Email notifications for neighbors and state and local officials regarding completed and upcoming site activities;
- Presentation of mitigation plan to the community at the January 16, 2017 meeting of the Town of Perinton Conservation Board; and,
- Monthly updates on mitigation progress to NYSDEC and Town of Perinton Conservation Board.

As discussed in the meeting on December 13th, we will provide monthly updates to the Department regarding our progress on the mitigation plan as well as the status of additional improvements made at the site to reduce offsite odors. We are committed to provide the resources and effort to ensure that the facility is returned to a standard of excellence that the community has known for over 40 years.

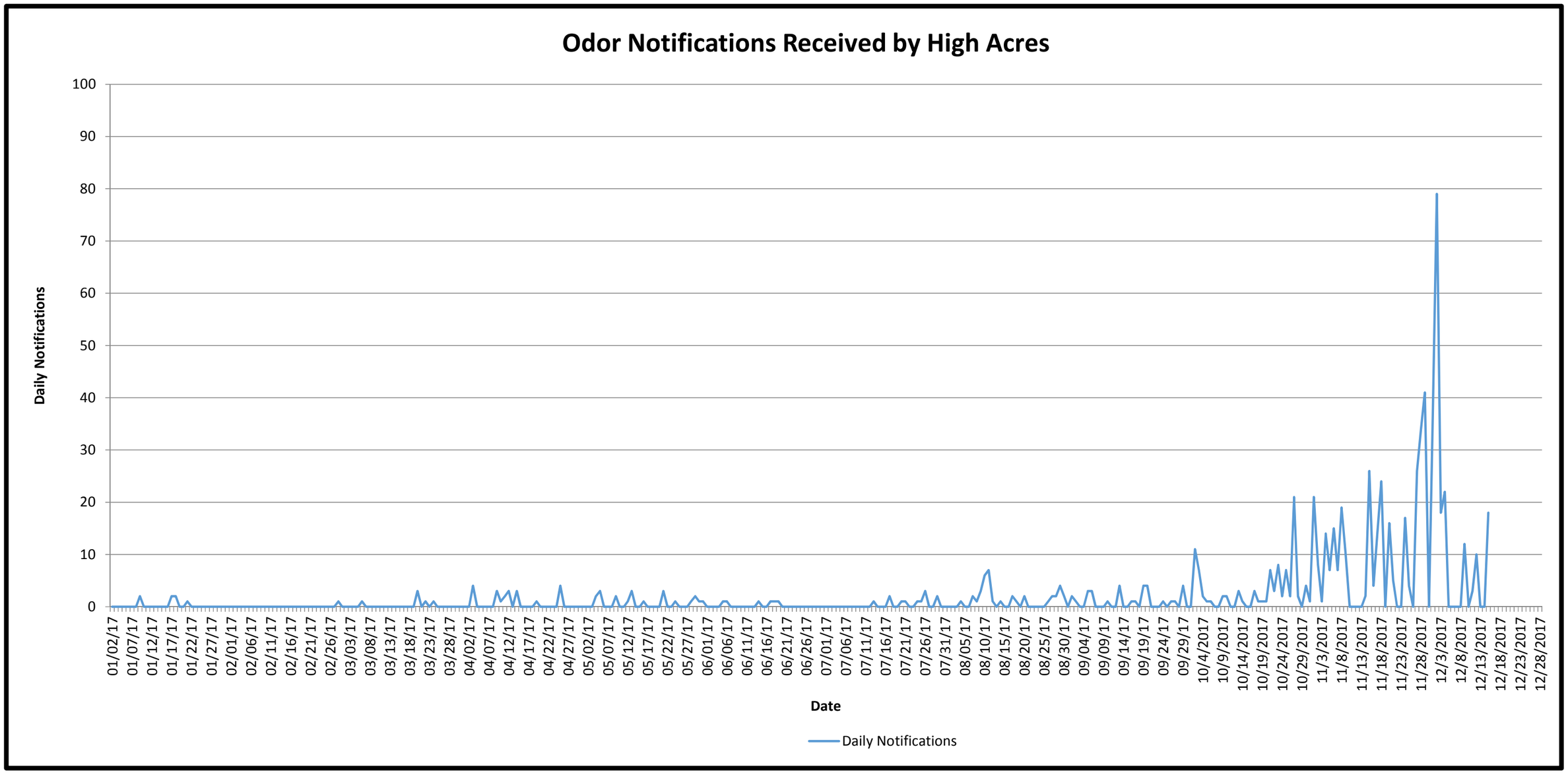
Sincerely,

Jeffrey Richardson
Sr. District Manager
Waste Management of New York, LLC.

Attachments

cc:
Greg MacLean – NYSDEC
Senator Rich Funke – 55th District
Michael Garland – Director, Monroe County DES
Michael Barker – Supervisor, Town of Perinton
Cassandra Pagano – Supervisor, Town of Macedon

Attachment 1 – Odor Notification Chart


Odor Notifications Received by High Acres
Daily Notifications
100
90
80
70
60
50
40
30
20
10
0
01/02/17
01/07/17
01/12/17
01/17/17
01/22/17
01/27/17
02/01/17
02/06/17
02/11/17
02/16/17
02/21/17
02/26/17
03/03/17
03/08/17
03/13/17
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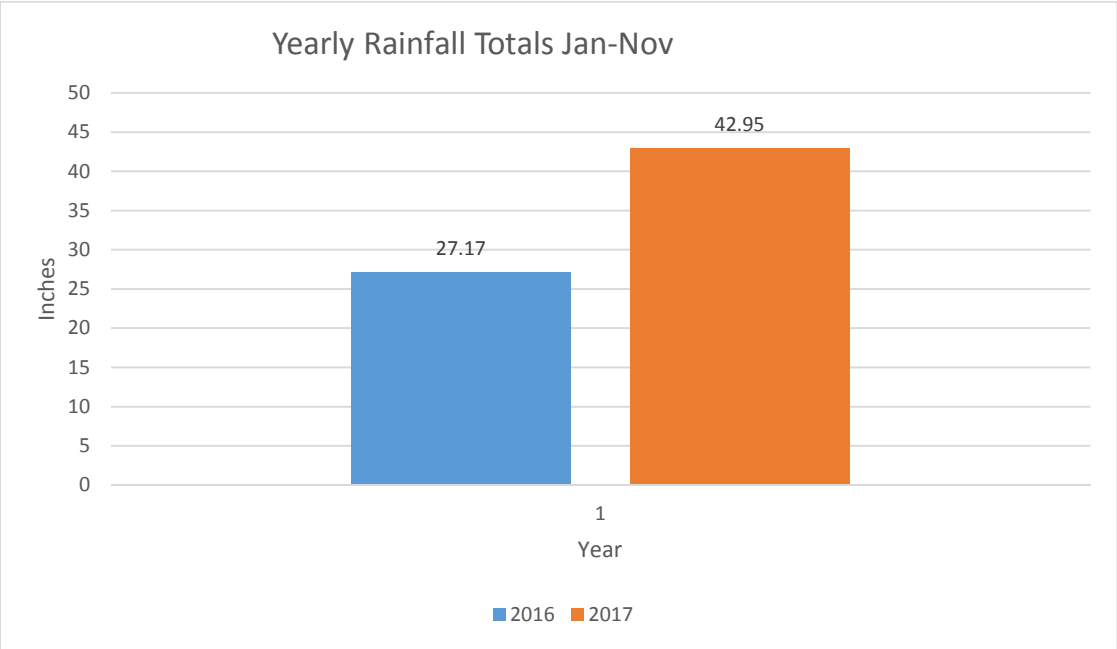
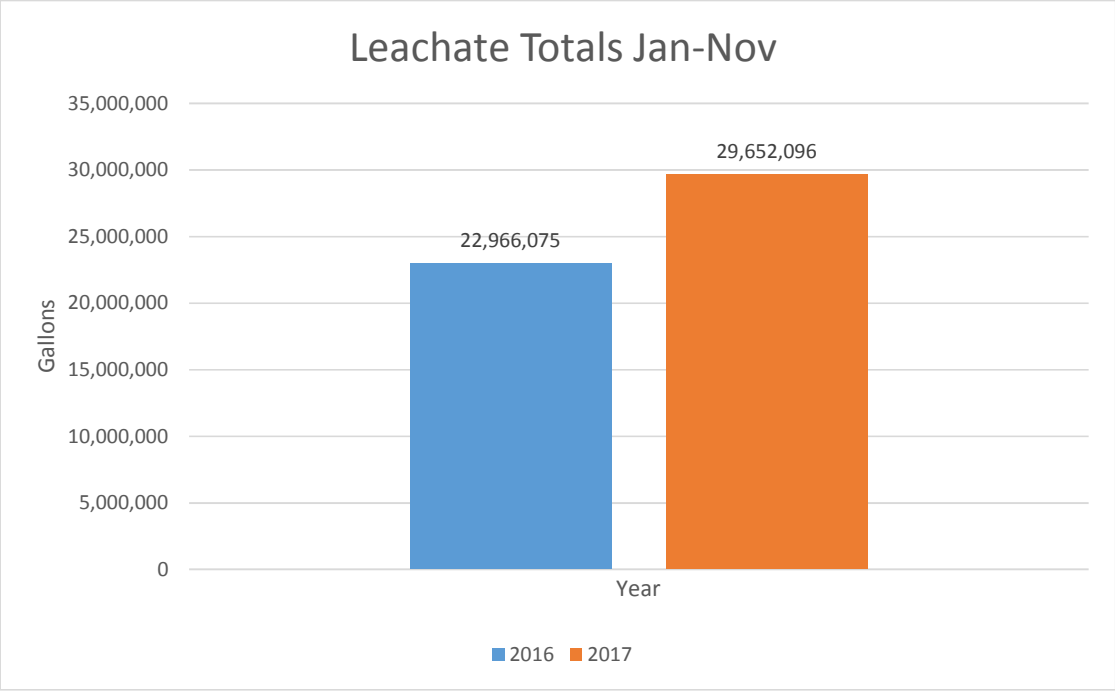
09/29/17
10/4/2017
10/9/2017
10/14/2017
10/19/2017
10/24/2017
10/29/2017
11/3/2017
11/8/2017
11/13/2017
11/18/2017
11/23/2017
11/28/2017
12/3/2017
12/8/2017
12/13/2017
12/18/2017
12/23/2017
12/28/2017
Date
Daily Notifications

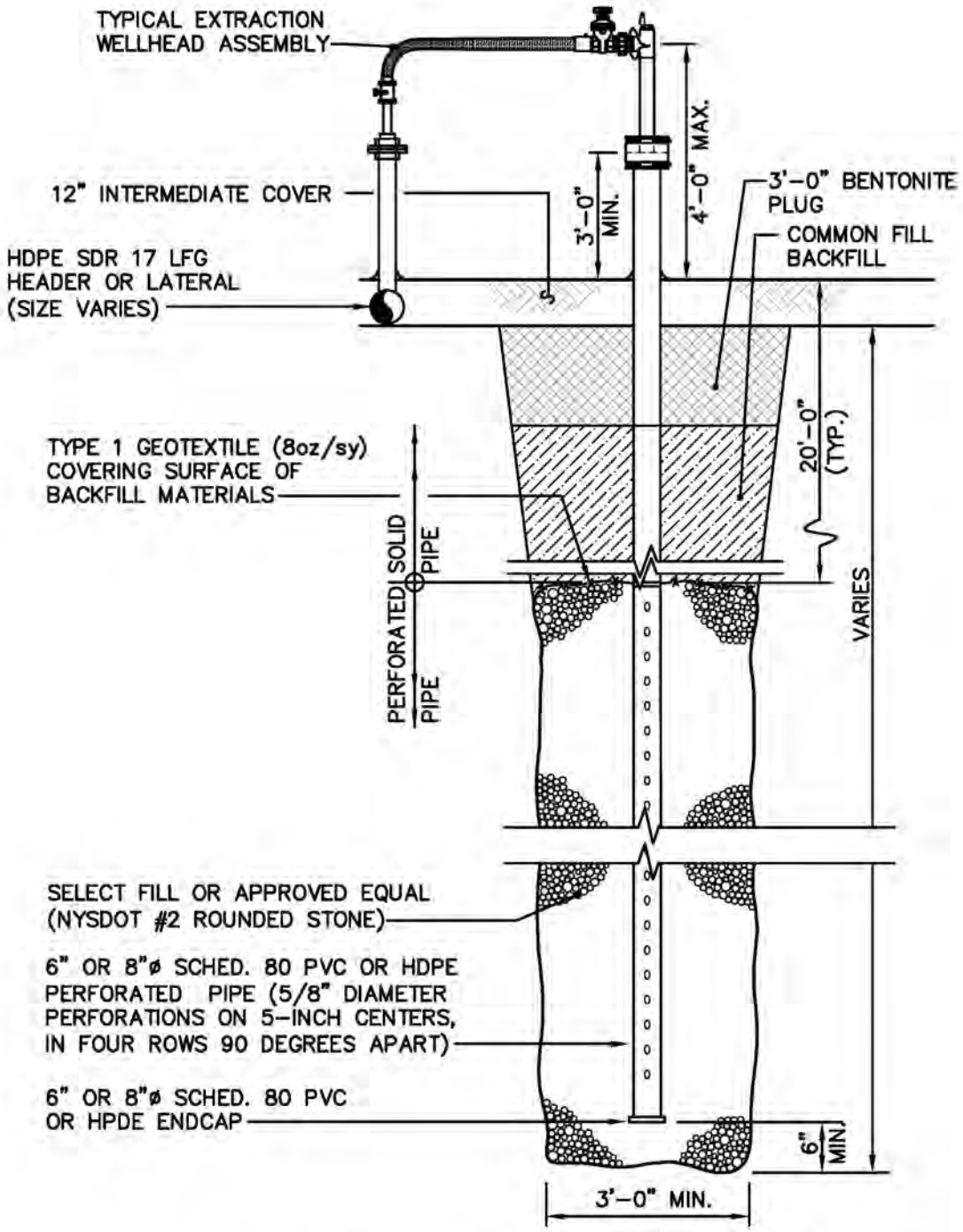
Attachment 2 – Rainfall and Leachate Data Comparison

Waste Management of New York, LLC.
High Acres Landfill and Recycling Center
Yearly Rainfall and Leachate Totals





Attachment 3 – Key Figures



TYPICAL DRILLED VERTICAL LFG EXTRACTION WELL DETAIL

NOT TO SCALE

Barton & Loguidice

Date	Scale
DECEMBER 2017	NOT TO SCALE

WASTE MANAGEMENT
HIGH ACRES LANDFILL

TYPICAL DRILLED VERTICAL LFG EXTRACTION WELL DETAIL

TOWNS OF PERINTON AND MACEDON MONROE AND WAYNE COUNTIES, NEW YORK

Figure Number 1

Project Number 1242.074.003

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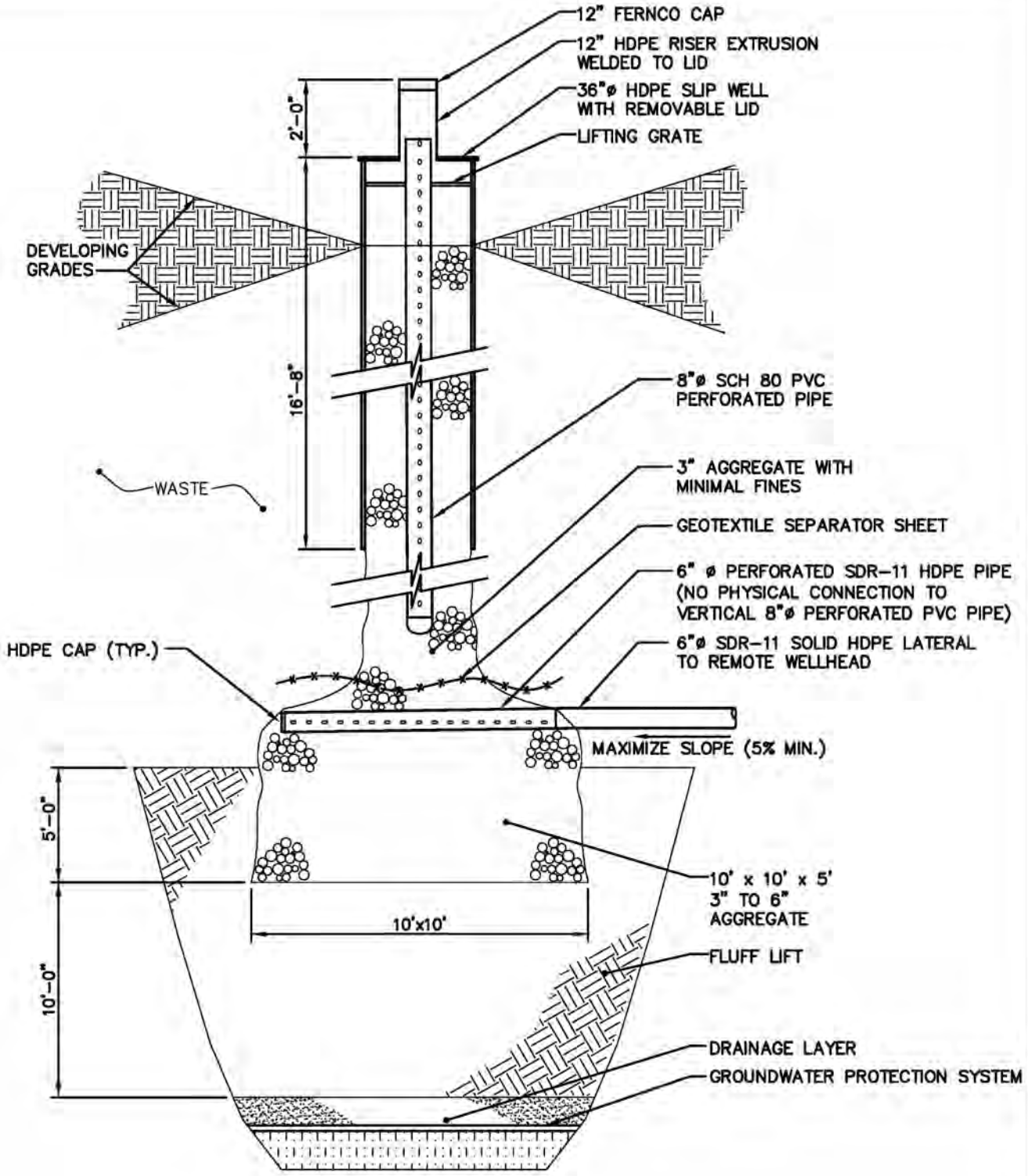

SLIP FORM WELL DETAIL – PREVIOUS GENERATION

NOT TO SCALE

Barton & Loguidice

WASTE MANAGEMENT
HIGH ACRES LANDFILL

SLIP FORM WELL DETAIL – PREVIOUS GENERATION

TOWNS OF PERINTON AND MACEDON MONROE AND WAYNE COUNTIES, NEW YORK

Date	Scale	Figure Number	Project Number
DECEMBER 2017	NOT TO SCALE	2	1242.074.003

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Z:\BL-Vault\1 – Project Files\1 – Sorted by Project Number {2} Class {2} Folder\1200\1242.074.003\CAD\1242.074.003_Figure 1_2_4 Well details.dwg

N

LEGEND:

- PROPERTY LINE
- TOWN/COUNTY LINE
- EXISTING ELEVATION CONTOUR LINE
- ANTICIPATED ELEVATION CONTOUR LINE
- BRUSH/WOODS
- WETLAND
- EXISTING LIMITS OF LANDFILL CELL
- CO — EXISTING CLEANOUT
- EXISTING BUTTERFLY VALVE
- EXISTING LFG HORIZONTAL COLLECTION TRENCH
- EXISTING LFG HEADER
- EXISTING LFG CONVEYANCE PIPING
- A,B,C-# — EXISTING LFG VERTICAL EXTRACTION WELL
- HC-# — EXISTING LFG HORIZONTAL COLLECTOR WELLHEAD
- A,B,C-## — EXISTING LFG VERTICAL EXTRACTION WELL (INSTALLED 2016)
- A,B,C-## — EXISTING LFG VERTICAL EXTRACTION WELL (INSTALLED 2017)
- EXISTING LFG CONVEYANCE PIPING (INSTALLED 2017)
- EXISTING LFG HORIZONTAL COLLECTION TRENCH (INSTALLED 2017)
- LFG — LFG SUB HEADER REPLACEMENT (INSTALLED NOV/DEC 2017)
- GEOMEMBRANE LINED DRAINAGE SWALE (INSTALLED NOV/DEC 2017)
- LFG — PROPOSED LFG JUMPER HEADER
- PROPOSED LFG VALVE
- PROPOSED EXPOSED GEOMEMBRANE TEMPORARY CAP
- 2017-# — PROPOSED LFG SLIP WELLS
- PROPOSED LFG CONVEYANCE PIPING
- PROPOSED LFG HORIZONTAL COLLECTOR

CELL 12A
(2017 CONSTRUCTION)

2017-8
2017-6
2017-7
2017-4
2017-5
2017-1
2017-2
2017-3

PROPOSED 24" LFG VALVE
24"
24"

TOWN OF MACEDON
(WAYNE COUNTY)
TOWN OF PERINTON
(MONROE COUNTY)

PROPOSED 24"ø LFG HEADER JUMPER

PROPOSED 9 ACRE± EXPOSED GEOMEMBRANE TEMPORARY CAP

CELL 11
CELL 11-OL
CELL 10
CELL 10-OL
CELL 9
CELL 9-OL

PROPOSED 18"ø LFG HEADER JUMPER

CELL 11 HC-4
CELL 11 HC-3
CELL 11 HC-2
CELL 11 HC-1
CELL 11 HC-9
CELL 11 HC-8
CELL 11 HC-5

WESTOW-150 WESTOW-160 WESTOW-161 WESTOW-162 WESTOW-174 WESTOW-175 WESTOW-163 WESTOW-159 WESTOW-165 WESTOW-169 WESTOW-170 WESTOW-173 WESTOW-178 WESTOW-164 WESTOW-168 WESTOW-166 WESTOW-157 WESTOW-171 WESTOW-172 WESTOW-177 WESTOW-182 WESTOW-185 WESTOW-153 WESTOW-167 WESTOW-176 WESTOW-179 WESTOW-180 WESTOW-181 WESTOW-184 WESTOW-144 WESTOW-143 WESTOW-154 WESTOW-155 WESTOW-148 WESTOW-149 WESTOW-140 WESTOW-150 WESTOW-146 WESTOW-156

PRIMARY MITIGATION MEASURES

WASTE MANAGEMENT
HIGH ACRES LANDFILL
MONROE AND WAYNE COUNTIES, NEW YORK
TOWNS OF PERINTON AND MACEDON

Barton & Loguidice

Date	DECEMBER, 2017
Scale	NOT TO SCALE
Figure Number	3
Project Number	1242.074.003

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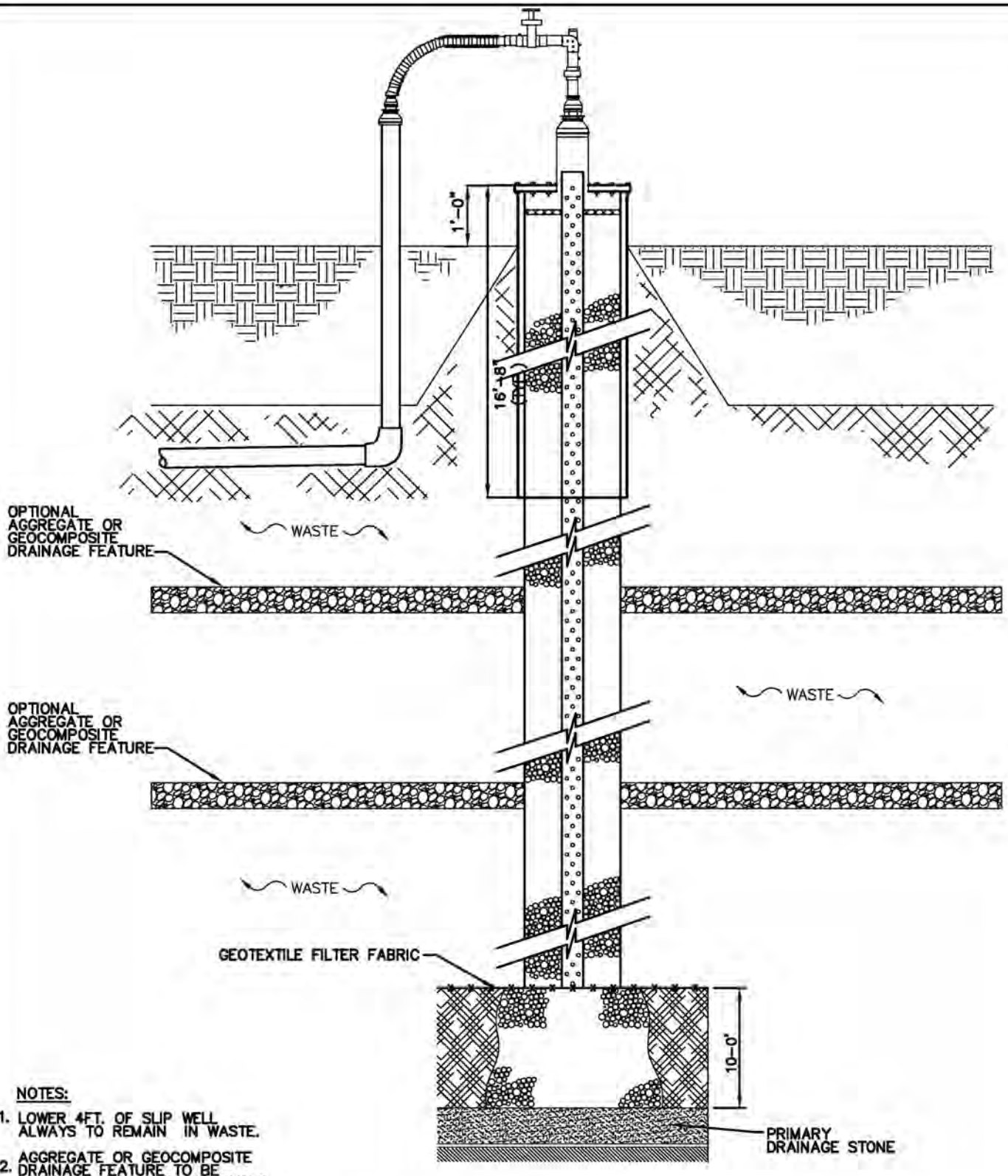
Z:\BL-Vault\D2\18217A02-1C71-4823-8927-99D5C4054147\0\1380000-1380999\1380647\LL\1242.074.003_Figure 3 (ID 1380647).dwg



NOTES:

1. LOWER 4FT. OF SLIP WELL ALWAYS TO REMAIN IN WASTE.
2. AGGREGATE OR GEOCOMPOSITE DRAINAGE FEATURE TO BE INSTALLED AT 60 FT. INTERVALS.

SLIP FORM WELL WITH DRAINAGE DETAIL

NOT TO SCALE

Barton & Loguidice

Date	Scale
DECEMBER 2017	NOT TO SCALE

WASTE MANAGEMENT
HIGH ACRES LANDFILL

SLIP FORM WELL WITH DRAINAGE DETAIL

TOWNS OF PERINTON AND MACEDON MONROE AND WAYNE COUNTIES, NEW YORK

Figure Number 4

Project Number 1242.074.003

Plotted: Dec 20, 2017 - 5:42PM SYR By: JGS
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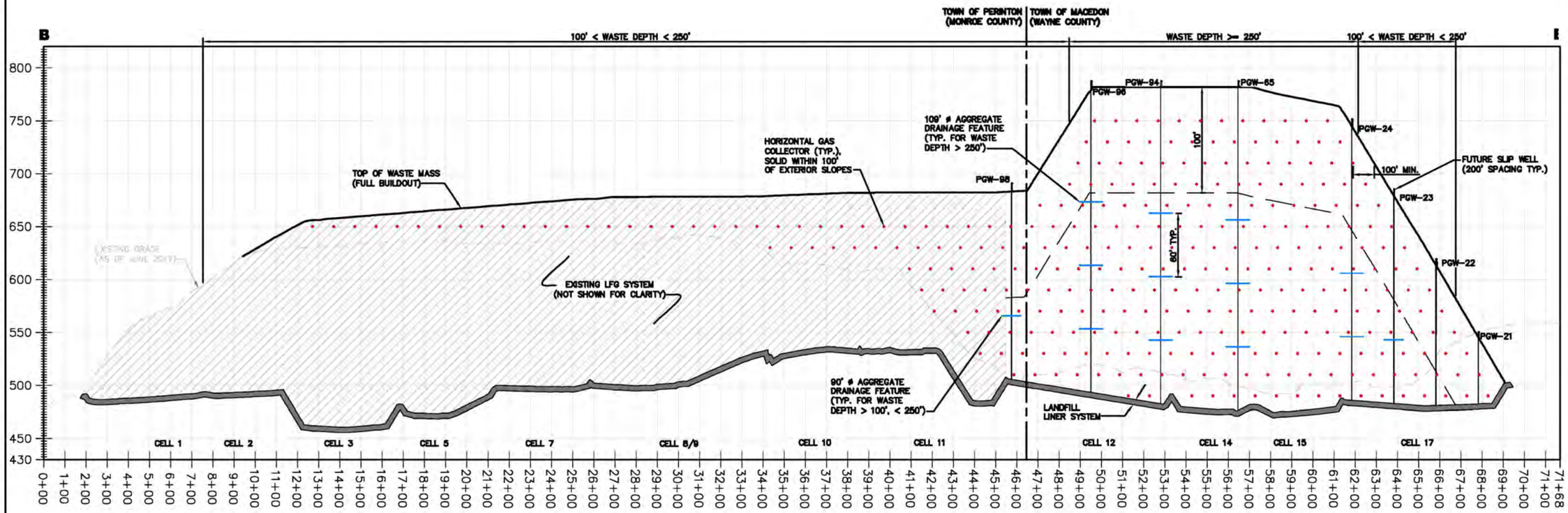


SECTION B–B'

HORIZONTAL SCALE: 1" = 500'
VERTICAL SCALE 1" = 100'

CROSS SECTION OF VIEW OF LONG TERM GAS COLLECTION SYSTEM

WASTE MANAGEMENT
HIGH ACRES LANDFILL
MONROE AND WAYNE COUNTIES, NEW YORK
TOWNS OF PERINTON AND MACEDON

Barton & Loguidice

Date
DECEMBER, 2017

Scale
AS SHOWN

Figure Number
5

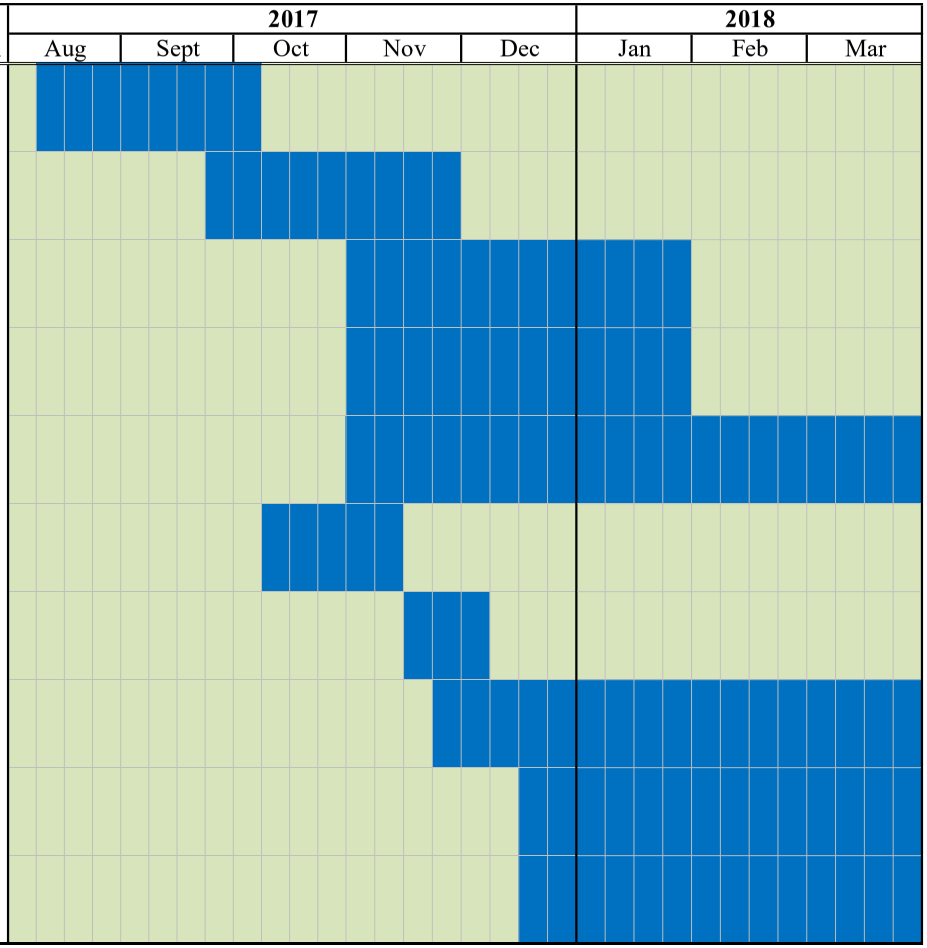
Project Number
1242.074.003

Plotted: Dec 20, 2017 – 4:27PM SYR By: JGS
Z:\BL-Vault\1 – Project Files\1 – Sorted by Project Number {2} Class {2} Folder\1200\1242.074.003\CAD\1242.074.003_Figure 5 – Cross Section.dwg

Attachment 4 – Primary Mitigation Measures Implementation Plan

Waste Management of New York, LLC.
High Acres Landfill and Recycling Center
Primary Mitigation Measures
Implementation Plan

Action	Estimated Start	Estimated Completion
Cell 10 Road Removal/Relocation	8/5/17	10/10/17
Design/Approval/Installation of 10,000 feet of Horizontal Collection Piping in Cell 10/Cell 11	9/20/17	12/1/17
Design/Approval/Installation of New Vacuum Header from Flare/Plant to Cell 11 (24"/18" Jumper Line)	11/1/17	1/30/18
Design/Approval/Installation of 9 Acres of Geosynthetic Cover - North and East Slope Cell 11	11/1/17	1/30/18
Replacement and Repair of Watered Out LFG Wells, Laterals and Headers	11/1/17	3/31/18
Identify and Remove 24 inch Perimeter Header Restriction	10/4/17	11/10/17
identification, Abandonment and Replacement of 1100 lf Sub-Header in Cell 11	11/18/17	12/8/17
Hiring Additional Staff to Monitor and Maintain Infrastructure	11/27/17	3/31/18
Relocate Waste Placement Operations into Cell 12 (Requires Regulatory Approval)	12/15/17	3/31/18
Implementation of Slip Form Wells with Drainage and Horizontal Collectors in Cell 12 Going Forward	12/15/17	3/31/18



Attachment 3

TOWN OF PERINTON
1350 TURK HILL ROAD ■ FAIRPORT, NEW YORK 14450-8796
(585) 223-0770 ■ Fax: (585) 223-3629 ■ www.perinton.org

TO: **Perinton Town Board**
FROM: **Perinton Conservation Board**
RE: **Interim Recommendations Regarding Current WM Odor Issues & Mitigation Efforts**
DATE: **1/24/18**

Board Members:

As requested, the Perinton Conservation Board (PCB) was directed to provide the Town Board with a factual explanation for the long-term persistence of landfill odors from the High Acres landfill.

Additionally, the PCB was asked to review resident concerns and comments, and lastly, to provide the Town Board with recommendations concerning the Town interaction with the facility regarding odors and other operational issues.

EXECUTIVE SUMMARY

Resident odor complaints have increased dramatically since July, 2017. Together with Town staff and the Town Supervisor, I meet with the management of Waste Management (WM) in mid November to discuss operational issues that had involved the uptick in resident complaints and mitigation measures that were being implemented. On December 7, 2017 WM sent a letter to the PCB (see Appendix 1) describing the company's intended odor control and mitigation plan. At the January 16th meeting of the PCB, WM presented additional information (See Appendix 2); the board was also in receipt of resident comments (PCB meeting and written). WM also sent a formal corrective action plan to NYSDEC Region 8 Director, Mr. Paul D'Amato, and copied the PCB (See Appendix 3).

It is the opinion of the PCB that increased odors at High acres landfill are due to:

- A gas collection system design that relied on "slip well technology" (exclusively in Cell 11) – use of vertical wells, only - rather than concomitant horizontal collectors which WM has historically used in other wells.

  The PCB notes that these design changes were approved by NYSDEC.

  The PCB recommends that NYSDEC direct WM to comply, now, with new landfill gas collection regulations (below) instead of at permit renewal (2023):

  > *In accordance with 6 NYCRR 363-7.1(e)(1) landfills such as High Acres landfill which receive putrescible waste must install horizontal landfill gas collection lines. The horizontal gas collection lines, must be installed in the waste mass at a horizontal spacing of not more than 100 feet and a vertical spacing of not more than 20 feet and shall terminate at least 100 feet from the exterior slope of the waste mass.*

- WM's decision to remove the temporary Cell 10 internal access road which required the excavation and on site hauling of odorous materials during unfavorable weather conditions in the summer months.

- Loss of significant vacuum (15 inches of water column vs. the typical 40 inches of water column) due to a clogged header pipe.

- Watering out of 12 vertical wells (approximately 40% of the available gas collection system in Cell 11) causing a loss of vacuum, resulting in increased gas emissions, including NMOCs and hydrogen sulfide (H_2S).

- Continued lack of "looped" collection header system limiting the vacuum in the Cell 11 gas collection system

- Incidents of extended holding times for CSX rail car waste transfer containers loaded with municipal solid waste.

Other operation issues:

- January 2, 2018 facility gas plant shut-down with concomitant flare resonance (flow-induced vibrations, FIV).
- January 10, 2018 system subjected to FIV testing (no resident pre-notification).

Below, are interim recommendations for Town Board review concerning WM's current compliance obligations under NYSDEC permit authority (permit renewal in 2023) and its effect on odors and flare vibration disturbances affecting nearby Town residents.

These recommendations are to 1) assure compliance with newly-implemented NYSDEC Part 363-7.1(e)(1) landfill gas collection requirements (effective November, 2017), 2) improve monitoring of emissions from the landfill, and 3) implement corrective action when monitoring shows an issue exists, 4) immediately divert MSW filling in the Perinton portion of High Acres landfill. until all mitigation measures are verified completed and effective, 5) greatly reduce the potential for flow-induced vibrations, 6) provide information regarding odor effects at nearby Fairport schools, 7) provide for an on-site electric power capacity to operate the gas collection and control system in the event of a power outage, and to 8) compel timely notification[1] of residents regarding exceedances, or other operational actions that may impact area residents. These recommendations apply to the entire facility – both Perinton and Macedon portions.

Specifically, with regard to air quality monitoring, the PCB recommends that the Town of Perinton petition the NYSDEC to change High Acre's air quality permit to compel (A) compliance with newly-effective Part 363-7.1(e)(1) landfill gas collection requirement; (B) regulatory monitoring of hydrogen sulfide (H_2S) gas at the facility; (C) lower threshold landfill surface monitoring levels of methane gas from 500 to 200ppmv as well as monitoring for H_2S if during landfill surface scans methane is detected at any location at a concentration of 200 ppmv or greater that location must be monitored for H_2S ; (D) compel increased frequency of surface monitoring for methane; (E) compel additional monitoring of all cover penetrations such as the gas collection wells; (F) compel timely reporting of monitoring exceedances to NYSDEC, Town of Perinton, and local residents as immediate mitigation measures.

[1] The PCB recommends that "timely notification" means at least 24 hours prior to initiating operational actions that could cause odors, or operational exceedances; or within one-hour of a time-critical event (such as unexpected gas plan shutdown), or within 12 hours of a known permit exceedance that could impact local residents.

PCB RECOMMENDATIONS:

(1) **Direct WM to retrofit Cell 11, and all existing and future solid waste disposal areas, to conform with 6 NYCRR 363-7.1(e)(1).**

Rationale:

High Acre's operating permit renewal is up for renewal in 2023. These new regulations should be implemented now. They reaffirm the use of horizontal gas collection systems. The PCB further recommends that the spacing of verticals wells be 200 feet (Cell 11 and ongoing).

(2) **High Acres should operate the collection and control system so that the hydrogen sulfide concentration is less than 10 ppbv above background at the surface of the landfill for odor control and compliance with the NYSDEC 1-hour average concentration of H_2S not to exceed 0.01ppmv (10 ppbv) under 6 NYCRR 257-10.3.**

Rationale:

Landfill gas is composed of approximately 50% methane (CH_4), 49% carbon dioxide (CO_2), 1% non-methane organic compounds (NMOC) and reduced sulfur compounds such a hydrogen sulfide (H_2S).

CH_4 and CO_2 are colorless and odorless gases but NMOCs can impart some odors. H_2S on the other hand is colorless but can impart the distinct odor of rotten eggs. The human olfactory sense (smell) can detect H_2S at very low concentrations but the olfactory sensitivity to H_2S concentration in the air can vary from person to person. According to the New York Department of Health's, Hydrogen Sulfide Chemical Information Sheet (revised October 2005) people can initially smell H_2S in the air at a concentration between 0.5 parts per billion by volume (ppbv) and about 100 ppbv. The New Jersey Department of Health Fact Sheet for Hydrogen Sulfide, revised May 2012, (see Appendix 3), indicates the odor threshold for H_2S ranges from 0.008 to 0.1 part per million by volume (ppmv) or 8 to 100 parts per billion by volume (ppbv). According information in both fact sheets (New York, New Jersey – See Appendix 4), odor thresholds vary greatly, and one should not rely on smell alone to determine potentially hazardous exposures. So, using the New York and New Jersey H_2S odor threshold information H_2S can be detected by most people at a concentration range between 0.5 ppbv and 100 ppbv (see Appendix 4).

On January 11, 2018, the PCB requested metadata of reduced sulfur (e.g., hydrogen sulfide) analysis of several samples of landfill gas from High Acres landfill. High Acres provided analytical data (see Appendix 5) for gas samples taken on 3/22/2010, 1/24/2012 and 8/15/2012. H_2S concentrations in the samples taken varied from 51 ppmv to 470 ppmv.

High Acres landfill is required to operate the landfill gas collection and control system (GCCS) in accordance with 6 NYCRR 208.4(d) so that CH_4 concentration is less than 500 ppmv above background at the surface of the landfill. This rule requires High Acres landfill to conduct surface testing (quarterly) of the landfill to demonstrate that CH_4 concentrations are less than 500 ppmv.

While detecting CH_4 concentrations of less than 500 ppmv at the surface of the landfill meets the operating criteria of 208.4(d), it doesn't provide control of odors from such gases as H_2S.

Assuming the landfill gas at High Acres landfill has 50% CH_4 with an H_2S concentration of 470 ppmv (the higher value of H_2S detected from High Acres landfill gas samples), there is the potential for off site migration of H_2S at concentrations high enough to be smelled beyond High Acres' property boundary.

For example, using the assumption above 50% CH_4 equates to 500,000 ppmv CH_4 with 470 ppmv H_2S. Using the operating criteria under 208.4(d) with CH_4 concentration at the landfill surface being less than 500 ppmv, the hydrogen sulfide concentration could be approximately 470 ppbv (dividing 500,000 ppmv CH_4 and the 470 ppmv H_2S by 1000). The 470 ppbv H_2S concentration is approximately 5 to 1000 times the odor threshold range for H_2S[2].

Using the lower concentration of H_2S of 51 ppmv in the High Acres landfill gas the H_2S concentration component in a landfill surface CH_4 concentration of 500 ppmv would be approximately 50 ppbv (about the middle of the detectable H_2S odor threshold range).

There are H_2S detection meters with a detection level of 3 ppbv, a resolution of 20 parts per trillion and an accuracy of +/-1ppbv at 5 ppbv. **High Acres should operate the collection and control system so that the H_2S concentration is 10 ppbv or less above background at the surface of the landfill for odor control and compliance with the NYSDEC 1-hour average concentration of H_2S not to exceed 0.01ppmv (10 ppbv) under 6 NYCRR 257-10.3.**

To determine if this level is exceeded, the owner or operator must conduct surface testing using a hydrogen sulfide analyzer. The owner or operator must conduct surface testing in a manner similar to 6 NYCRR 208.4(d) at least once every two weeks around the perimeter of the landfill and daily around the perimeter of the landfill working face, open areas of the landfill surface such as areas of excavation into the waste mass, drilling locations where vertical gas collection wells are being installed and monthly along a pattern that traverses the landfill at no more than 30-meter intervals at any surface scan location where methane is detected at 200 ppmv or greater and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover, and all cover penetrations.

(3) Compel monitoring for hydrogen sulfide at any surface scan location where methane readings are 200 parts per million by volume or greater.

Rationale:
The PCB suggests 200 ppmv CH_4 as an action level because based on analytical data for the High Acres' landfill gas described above the H_2S concentration might be 10 ppbv or greater.

(4) Request vertical and horizontal gas collection well monitoring (temperature, oxygen/nitrogen, and pressure) be performed weekly instead of monthly.

Rationale:
This will provide more data on the functionality of each gas well and provide more real time data that can be used to show changes in well performance and providing an indication that corrective action might be needed. Assure there are enough wells to cover the landfill to control gas emissions (surface monitoring). If methane or H_2S emissions have exceedances, that can't be corrected by adding additional cover or by adjusting the vacuum of gas collection wells in the areas of exceedance, then additional vertical wells might be needed to be installed.

(5) **Direct that WM be required to provide PCB with updates on mitigation progress and monitoring at each scheduled PCB meeting. (This information would be made public.)**

Rationale:

2 This does not take into account the fact that H_2S could react with oxygen and minerals in the cover soil to reduce the concentration of H_2S in the methane surface emissions.

Timely reporting will assure timely identification of operational issues before odors are detected outside the facility perimeter and impacting local residents.

(6) Ask Waste Management to immediately suspend all municipal solid waste (MSW) disposal in Perinton temporarily until WM can demonstrate to the satisfaction of the NSDEC that all mitigation and compliance measures have been met and demonstrated effective in odor emissions.

Rationale:
WM needs to focus all efforts on odor mitigation.

(7) Have WM support third-party monitoring of local Fairport schools, as directed by the Fairport Superintendent of Schools, for NMOCs and H_2S until such time as the technical data indicates that there is no health concern due to odors from the High Acres landfill.

Rationale:
Children are more susceptible to airborne environmental exposures because their lung function is not completely developed[3]

(8) Request that NYSDEC implement flow-induced vibration (FIV) requirements[4] **that minimize flare-induced vibration occurrences, and compel reporting and resident notification. Require residential / Town notification of gas plant shutdowns exceeding one-hour and the potential impacts for odors, vibration, or other potential issues that can immediately impact residences.**

Rationale: Many factors can influence a sustained (> one hour) gas plant shutdown. Some include: interruption of power generation, landfill collection system issues, landfill powerplant issues. Gas plant shut down can affect odor generation, as well as produce flare vibrations at flare startup and operation that can affect local residences.

(9) Request that NYSDEC compel on-site backup power (generator) to operate the gas collection and control system such that a power failure or gas plant shutdown will not affect system control (vacuum) requirements, gas/odor collection and control per Title 5 permit which covers the entire facility (both Perinton and Macedon).

Rationale: Per NYSDEC Title 5 permitting, gas collection / control systems cannot be inoperative for > one hour without taking action to control landfill gas emissions. The High Acres landfill expansion into Macedon will affect gas collection and transport because of increased piping distances (and may affect vacuum) as additional cells are added.

(10) The Town of Perinton establish a question and answer resource on the Town website that provides general information about landfills, odors, and odor control. The PCB recommends that the Town engage a third-party consultant who will work with the PCB's topic outline. Furthermore, the PCB recommends that the consultant compile answers to submitted questions by residents to the Town website. Additionally, a notification should be sent to the residents informing them that this resource is available.

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[3] T. F. Bateson and J. Schwartz, "Children's response to air pollutants," *Journal of Toxicology and Environmental Health—Part A*, vol. 71, no. 3, pp. 238–243, 2008.

[4] Although the perceptibility threshold for ground-borne vibration is about 65 vibration decibels (VdB), human response to vibration is not usually substantial unless the vibration exceeds 70 VdB.

The PCB is currently reviewing resident comments and plans to make further recommendations to this Board regarding the Host Community Agreement and Special Use Permit (SUP).

For the Perinton Conservation Board,

Ken Rainis

Kenneth G. Rainis
Chairman

TECHNICAL NOTES

Recommendation 1 Implementation of Hydrogen Sulfide (H_2S) Standard:

Operate the collection system so that the H_2S concentration is 10 parts per billion by volume (ppbv) or less above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator must conduct surface testing using a hydrogen sulfide analyzer with a detection level of no greater than 3 ppb, a resolution of 20 parts per trillion and an accuracy of +/-1ppb at 5 ppb. The owner or operator must conduct H_2S surface testing at least monthly around the perimeter of the collection area and along a pattern that traverses the landfill at no more than 30-meter intervals at any surface scan location where methane is detected at 200 ppmv or greater and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations. Thus, the owner or operator must monitor any openings that are within an area of the landfill where waste has been placed and a gas collection system is required. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan must be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30-meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

If monitoring demonstrates that the operational requirements in the paragraph above are not met, corrective action must be taken as specified in paragraph (4)(a), (b), (c), or (d). If corrective actions are taken as specified in paragraph (4), the monitored exceedance is not a violation of the operational requirements in this section.

The following procedures must be used for compliance with the surface hydrogen sulfide operational standard as provided above.

(1) After installation and startup of the gas collection system, the owner or operator must monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at no more than 30-meter intervals (or a site-specific established spacing) for each collection area on a monthly basis using an hydrogen sulfide detector specified above.

(2) The background concentration must be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring must be performed in accordance with section 8.3.1 of Method 21 of appendix A of 40CFR 60, except that the probe inlet must be placed within 5 to 10 centimeters of the ground. Monitoring must be performed during typical meteorological conditions.

(4) Any reading of 10 parts per billion or more above background at any location must be recorded as a monitored exceedance and the actions specified in paragraphs (4)(a) through (e) of this section must be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements above.

(a) The location of each monitored exceedance must be marked and the location and concentration recorded. For location, you must determine the latitude and longitude coordinates using an instrument with an accuracy of at least 4 meters. The coordinates must be in decimal degrees with at least five decimal places.

(b) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance must be made and the location must be re-monitored within 10 calendar days of detecting the exceedance.

(c) If the re-monitoring of the location shows a second exceedance, additional corrective action must be taken and the location must be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (4)(e) must be taken, and no further monitoring of that location is required until the action specified in paragraph (4)(e) has been taken.

(d) Any location that initially showed an exceedance but has a H_2S concentration of 10 parts per billion or less of hydrogen sulfide above background at the 10-day re-monitoring specified in paragraph (4)(b) or (c) must be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration of 10 parts per billion or less above background, no further monitoring of that location is required until the next monthly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in paragraph (4)(c) or (e) must be taken.

(e) For any location where monitored methane concentration equals or exceeds 10 parts per billion above background three times within a two month period, a new well or other collection device must be installed within 90 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation shall be submitted to the NYSDEC for approval.

(5) The owner or operator must implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

APPENDICIES

(1) WM letter to Chair, Perinton Conservation Board, December 7, 2017; Odor Mitigation Plan

(2) PPT presentation, Waste Management, Conservation Board meeting, January 16, 2018.

(3) WM letter to Mr. Paul, D'Amato; Region 8, DEC, Director

(4a) Health Effects from Inhalation of Hydrogen Sulfide
https://www.health.ny.gov/environmental/chemicals/hydrogen_sulfide/

(4b) NJ Health Fact Sheet – hydrogen sulfide (H_2S).

(5) H_2S data, provided by WM to PCB, January 11, 2018

Attachment 4

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Regional Director, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5366 I F: (585) 226-9485
www.dec.ny.gov

February 12, 2018

Mr. Michael G Barker
Supervisor, Town of Perinton
1350 Turk Hill Road
Fairport, NY 14550

Dear Supervisor Barker,

This will constitute this Department's formal response to the ten recommendations made by the Perinton Conservation Board (" PCB") and sent to us after review by the Town Board. The document was dated January 24, 2018, and we received it the following day. It also responds to the revised recommendation the Town requested that we review relative to enhanced monitoring, which were numbers 2&3 in the January 24th document. Finally, I included some additional information regarding requirements for Landfill Operations and requests for information going forward which are in addition to the recommendations made by the Town.

I will address the Town recommendations in the same order as they appear in the January 24th document. This response should be read together with the Notice of Violation ("NOV") dated February 2, 2018 (previously provided to you) issued to Waste Management ("WM") as several of the measures recommended by the Town are also demands made upon the company by DEC as described in that Notice.

1. **6 NYCRR 363-7.1(e)(1)** – We concur. See NOV, bullet item 2. As you know, the transition regulations in the Part 360 series modified late last year would not require full compliance with the referenced gas collection requirements until such time as the High Acres permit is modified or renewed, which could be as late as 2023. In December, we sought and received WM's commitment to implementation of these requirements, but the Town's concurrence with the merit of early implementation is helpful and much appreciated.

2/3. **Enhanced Monitoring** – On February 9, 2018, DEC received a revised recommendation from the Town and PCB with a request to have it replace recommendations 2&3 from the January 24th document. The revised recommendation reads as follows:

> Waste Management shall, during its quarterly surface emission monitoring for methane required by its Title V Operating Permit (for the one week period required for each such quarterly monitoring event) use 200 ppm of methane as an Action Level. A reading of 200 ppm methane above background will cause the implementation of the corrective actions and follow-up monitoring as stated in High Acres Title V operating permit (currently required only when the level of 500 ppm is reached). Concurrent with the quarterly surface emission monitoring event,

continuous hydrogen sulfide monitoring will be performed at monitoring points around the boundary of the Waste Management (High Acres) property at locations to be determined by WM, the Town and the NYSDEC at a later date (for the same one week period per each quarterly monitoring event pursuant to which methane monitoring will be performed). Hydrogen sulfide monitoring at the facility boundary will be performed with an agreed upon sampling device with continuous data logging capabilities during the time the surface scan events are occurring. Hydrogen Sulfide monitoring events in the locations referenced above will be performed each quarter during calendar year 2018 to determine the effectiveness of the mitigation activities under seasonal and variable operating conditions. Monitoring shall continue beyond calendar year 2018 should NYSDEC determine that the mitigation measures to be performed by Waste Management are not achieving the remedial objectives outlined herein. Data will be reported to the NYSDEC and the Town of Perinton, who will make it available to the public.

DEC concurs with the recommendation which, along with the other measures being required of WM , shall be incorporated into the addendum to the Operation and Maintenance Manual which will be submitted per the terms of the NOV. We also note that since the first quarter surface scan is due to be conducted no later than March 31,2018, it is imperative that a determination of equipment to be used and monitoring locations, which need to cover all directions (East, West, North , and South) around the landfill, be made soon.

4. **Gas collection well monitoring** - We concur. However, as Cells 10 and 11 are the problem cells, we are satisfied with weekly monitoring of the wells in those cells, and twice monthly, rather than weekly, in the cells on the rest of the landfill. We believe that schedule will focus the effort where necessary, while still doubling the current requirement at the remainder of the well locations. This additional monitoring shall continue through the end of 2018, at a minimum.

5. **Updates to the PCB** - We fully support that recommendation, and understand that WM has agreed to the request. Implementation does not require DEC involvement, and we understand that other vehicles, such as the Town's Special Use Permit or renewed Host Community Agreement, are more appropriate for inclusion of this measure.

6. **Suspension of Waste Disposal in Cells 10 and 11**- This will occur as soon as practicable. See NOV, bullet item 3. In order for the gas collection improvements to be effective and draw gas as designed, the newly installed pipes must be surrounded by a lift of waste, after which soils are used to establish the desired slopes necessary for surface water management, slope integrity, etc. Completion of the entire set of remaining tasks will likely take into March. As you probably know, waste placement into Cell 12 has begun, and the "fluff' layer (the use of selective waste for the first lift in order to protect the liner) should be finished soon, which will allow the full waste stream to be deposited there. Finally, to clarify one point, as Cell 12 begins to fill and waste is placed against the slope of cell 11 several months from now, that slope is in Perinton, and the fill progression will take some waste placement back across the town line from Macedon. While we fully expect this odor event to be long resolved by then, we do not want to

mislead anyone into thinking that, based upon the wording of this recommendation by the Town, suspending work at the top of Cells 10 and 11 means no waste will be placed in Perinton in the future. Of course, this will be newly placed waste and subject to the new gas collection and odor control requirements as described in this letter, the NOV, and the permit. Also, the gas collection will be built as they fill, and thus will not require a retrofit or excavation into old waste. This process has been discussed with the PCB and it concurs that the remaining construction and limited placement of waste is a necessary part of the retrofit and improvement to the gas collection system.

7. **Monitoring Program for the nearby schools** - We concur. After discussions with the Superintendent, WM, and the Town representatives, all appear confident that a mutually agreeable program can be worked out for the school locations. DEC staff here and in Albany would be glad to assist if needed, but given the above at this point we are just seeking a status update in the near future. See NOV, bullet item 5.

8. **Vibration Control from Power Plant / Flares**– We concur. See NOV, bullet item 8 regarding vibration control, designed to prevent the type of event experienced on January 2, 2018. Regarding notifications, it is our understanding that WM is discussing with the Town the most efficient means to communicate any significant event to the appropriate Town personnel. WM will continue to provide Community Updates in the event of an issue with that system. We expect the details that are worked out with the Town to be included in the amendments to the Operations and Maintenance Manual which is due to be submitted no later than March 16, 2018 per the NOV.

9. **Back - up Power** - We concur. See NOV, bullet item 9.

10. **Town Q & A resource on its website** – DEC certainly supports anything that will allow the public to access information. As we discussed, development of this recommendation does not require any specific action by DEC.

In addition to the recommendations received from the Town, the NOV requires the completion of the construction activities required by DEC in December, the submission of a design for the placement of additional geo -membrane cover for remaining vulnerable slopes in Cells 10 and 11, the submission of a plan to conduct real time H2S monitoring in areas close to the most frequently affected neighborhoods, and the collection and analysis of a sample of landfill gas from the main header, the results of which shall be used in future modelling.

Further, we have requested, by no later than February 20, 2018, a report compiling and reflecting the information collected by Towpath Investigative Services relative to its odor investigation. This will include the data and graphics sufficient for an analysis of the odors detected by that company, areas and neighborhoods impacted and when, and any changes noted over time, either in terms of improvements or the impacts worsening. While that report will certainly not reflect the entire issue or impact, we understand that the company has been visiting the neighborhoods twice per day since just after Thanksgiving, so we felt that DEC, as well as the Town and residents, should have access to that

information. We have asked WM to continue that effort, and to supplement this report (which should cover from the date the investigation began through January 31st) in future weeks.

Finally, and as mentioned in the NOV, we are reserving all rights should further actions beyond those required to date become necessary.

I want to thank you, the Town Board, and the PCB for investing the time and effort to evaluate and recommend meaningful measures to be taken, and for your cooperation and support as we work to ensure a proper resolution to this situation for the residents.

Thank you for your attention to this matter.

Very truly yours,

Paul J. D'Amato
Regional Director

c: L. Mauro, ESQ. (by Electronic Mail)
G. McNeil (by Electronic Mail)
L. Shaw,ESQ. (by Electronic Mail)
J. Richardson (by Electronic Mail)
J. Picciotti, ESQ. (by Electronic Mail)
B. Provenzano (by Electronic Mail)
L. Schwartz
S. Foti
G.MacLean
T. Marriott

Attachment 5

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Office of Environmental Quality, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5454 I F: (585) 226-9485
www.dec.ny.gov

February 2, 2018

Waste Management of New York, LLC
425 Perinton Parkway
Fairport, NY 14450
Attention: Jeffrey Richardson

Dear Mr. Richardson:

Re: **NOTICE OF VIOLATION: High Acres Landfill**
Solid Waste Management Facility/Program Number 28S32 located in Perinton (T), Monroe (C), & Macedon (T), Wayne (C)

This Notice of Violation ("NOV") notifies you that Waste Management of New York, LLC ("Waste Management") has violated the State's solid waste management regulations at Part 360 of Title 6 of the New York State Official Compilation of Codes, Rules and Regulations ("Part 360"), as well as the State's air pollution control requirements related to odor, at the High Acres Western Expansion Landfill ("the Landfill") located in the Town of Perinton in Monroe County and the Town of Macedon in Wayne County. Since approximately September, 2017, on numerous occasions continuing to date, the Landfill has emitted odors in a manner that unreasonably interferes with the neighboring community's comfortable enjoyment of life and property. Pursuant to this NOV, Waste Management must:

- Complete all odor abatement measures directed or approved by the Department in December of 2017, including completion of all gas collection improvements, well replacement, and soil and geo-membrane placement.

- Any areas receiving the placement of new waste shall have horizontal gas collectors, gas collection wells, and piping constructed in accordance with 6 NYCRR Section 363-7.1(e)(1). Vertical well installation shall comply with an average density of 200 foot spacing in each cell going forward.

- As soon as the retrofit (installation of gas collection horizontal pipes, and the placement of sufficient waste to effectuate gas collection) of cells 10 and 11 is done, cover shall be placed to achieve the required slopes necessary for stormwater management, intermediate soil cover shall be placed, and Waste Management shall discontinue waste disposal in those cells until the odor event is considered resolved.

- No later than February 28, 2018, Waste Management shall submit to DEC a design for the addition of geo-membrane cover to Cells 10 and 11 as a further odor prevention measure.

- Continue the development of an air monitoring plan in concert with the Fairport Central School District. No later than February 16, 2018, Waste Management shall provide to DEC a status of the development of that program.

- Waste Management shall, during its quarterly surface scans for methane required by its Air Pollution Control Permit, use 200 ppm of methane as the new action level and take all measures currently required when the level of 500 ppm is reached. During the scan events, Waste Management will also monitor for H2S at monitoring points around the landfill, provide a Community Update, and notify the Town of Perinton as well as DEC, of all data and resulting actions taken or planned in the event the level of 200 ppm of methane is detected.

- No later than February 16, 2018, Waste Management shall propose real time H2S monitoring, conducted separately from the methane scans, in locations where Waste Management has access to property and nearest the most impacted neighborhoods. All H2S results shall be reported to DEC and the Town on a timely basis.

- Waste Management shall maintain and keep operational the vibration prevention measures installed since January 2, 2018, and no later than February 16, 2018 submit to DEC a copy of the Standard Operating Procedures currently under development for that system.

- No later than February 23, 2018, Waste Management shall submit plan for ensuring back-up power is available for its gas control systems in the event of a power outage.

- No later than February 16, 2018, Waste Management shall obtain a sample of landfill gas from the main header and have it analyzed for a full suite of analytical parameters. The sample results are to be used for all appropriate modeling.

These requirements shall be considered effective immediately. No later than March 16, 2018, Waste Management shall submit an addendum to its Operation and Maintenance Manual which shall include these measures. Upon approval by DEC, it shall become an enforceable part of the company's Solid Waste Management permit.

ECL Article 71 provides that any person who commits the above violations is liable for significant civil penalties which may accrue on a daily basis for so long as a violation continues, and further provides that such person may be enjoined from continuing these violations. The Department hereby reserves all its rights under law and regulation, including but not limited to the right to assess penalties and to seek injunctive relief related to any odor-related violations, past, present, or future, and particularly with respect to further appropriate action regarding offsite odor issues. Nothing set forth herein should be read as a waiver of the Department's right

to seek monetary or injunctive relief regardless of whether Waste Management addresses current odor issues.

If you have any questions concerning this NOV, please contact the undersigned at 585-226-5454, or at scott.foti@dec.ny.gov.

Sincerely,

Scott J. Foti
Regional Engineer

Attachment 6

HIGH ACRES LANDFILL
ODOR ABATEMENT UPDATE

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

March 6, 2018

DEC is committed to addressing the problem of odors originating from the Waste Management (WM) High Acres Landfill and issued a Notice of Violation (NOV) to WM on February 2, 2018 requiring them to take several actions to address odors at the facility. This fact sheet provides a summary of activities to date, including actions taken under the NOV and we will continue to keep the community updated on our actions.

ACTIVITIES TO DATE

November, 2017

- Residents first contacted DEC management to express concern that odor issues from the High Acres Landfill had not been rectified and seek additional DEC intervention with the situation.
- DEC immediately contacted WM requesting a plan to address the issues and increased inspections.

December, 2017

- NYSDEC Commissioner Basil Seggos wrote WM demanding an expeditious resolution and requiring a response within five days.
- WM responded to the Commissioner, acknowledging the issue, committed to address it, and provided a list of actions to be taken, the last of which would be implemented by 3/31/18.
- DEC met with WM representatives on December 13 to review the situation.
- DEC requested a report from WM be submitted expeditiously and urged WM to directly advise residents and Town Officials about issues and planned actions.
- WM submits first of monthly reports to DEC and commences regular updates to the community.

January 2018

- DEC held discussions with the Town of Perinton and Perinton Conservation Board (PCB).
- A significant vibration event impacts the neighborhood;
- WM continues monthly reports and community updates describing measures undertaken and/or completed
- DEC received PCB recommendations
- Anti -Vibration system is installed to address the prior incident that caused the vibration event.

February 2018

- On February 2, DEC issued a Notice of Violation (NOV) with a series of expectations and requirements, including:
    - Ambient air monitoring at the Dudley/Northside Elementary School campus and in areas surrounding the landfill,
    - Several steps to improve landfill gas collection at the facility, including expediting measures that previously would not have been implemented until as late as 2023.
    - Additional measures outlined in the NOV are available by going to www.dec.ny.gov and typing “High Acres Landfill” in the search box.
- DEC met with WM, the Town of Perinton Supervisor and the PCB regarding further details on implementation of new requirements;
- DEC sent a response to PCB Recommendations.
- DEC further enhanced its presence by deploying Law Enforcement details, including weekend patrols and immediate response to residents’ complaints.

STATUS OF ODOR / VIBRATION ABATEMENT MEASURES

Under DEC supervision, since Mid-November of 2017 the following measures have been implemented by WM to improve the gas collection and control system at High Acres to reduce odors and eliminate reverberations:

1. Removed a restriction in the 24-inch gas header which impacted efficiency of the collection system;
2. Designed and installed approximately 10,000 lineal feet of horizontal gas collection piping, and replaced, or installed other gas collection equipment in Cells 10 and 11 to improve the efficiency;
3. Installed synthetic liner in the roadside drainage swale in Cell 11 to prevent escape of fugitive gas;
4. Installed approximately 9-acres of geo-membrane cover on the North Slopes of Cells 10 and 11;
5. Installed a "jumper header" (new gas line) 1,600' (length) by 18/24" (diameter) to improve collection;
6. Installed an automated control system to monitor and control the landfill gas blowers if low levels of reverberations begin on either flare;
7. Revised the Gas Collection Phasing plan for Cell 12 to include additional horizontal/well spacing.

STATUS OF COMPLIANCE WITH NOTICE OF VIOLATION

To date, WM has made on-time delivery of the submissions required by the NOV, which are briefly described below, and implementation of additional requirements remains ongoing.

- Complete odor abatement measures from December Plan: On schedule
- Requirement for horizontal gas collectors: Being implemented for all new cells, and the retrofit of existing cells is in progress, with completion due in March;
- Discontinuing the use of Cell 11 until the odor issue is resolved will be implemented when the retrofit is complete;
- The geo-membrane design has been approved, materials delivered and implementation is underway for the installation of an additional 9 acres;
- Air monitoring at the Dudley / Northside school: the 2-16-18 report was received; and the 90-day monitoring program is expected to commence on or before 3/8/18.
- Quarterly surface scans with H2S monitoring will be implemented at the next required scan due in March;
- Real time H2S monitoring at the perimeter of the facility is expected to begin no later than 3/8/18 Vibration prevention measures have been installed and delivery of the Standard Operating procedures has been done.
- Back-up power Plan: Received
- Sample of landfill gas: taken on schedule and results are pending

NEXT STEPS

- **WM will install additional geo-membrane cover** on the South and East slopes of Cell 11 (see above). Materials are on site, trenching and pipe installation for the gas collection which will be under the geo-membrane has begun. Depending on weather, the target completion date is 3/31/18.
- **WM will continue to identify, replace and repair landfill gas collection wells, laterals, and headers** as needed, and the wells are now being monitored more frequently per the newly imposed requirements;
- **Monthly updates** on mitigation progress to NYSDEC and the Town of Perinton Conservation Board will continue as the remaining measures are completed;
- **Email notifications** for neighbors, state and local officials regarding completed and upcoming site activities (Community Updates) will continue;
- **All gas collection mitigation efforts in cells 10 and 11 such as trenching, laying pipe, or vertical well drilling which require intrusion into "old" waste, an activity which has caused significant odors will be complete by the end of March 2018.** The remainder of the retrofit, which includes the placement of sufficient waste to allow the new gas collectors to function, then the installation of soil to get a proper slope and the placement of cover, may take into April 2018.
- **No later than March 16th, 2018**, an addendum to the facility's Operation and Maintenance Manual incorporating the new requirements will be submitted and once approved will be incorporated into the facility's permit to ensure enforceability and applicability of these new requirements going forward.
- **Enhanced DEC presence** will continue as necessary, including weekends;
- **Ambient Monitoring in all four directions at the facility and school will begin no later than March 8, 2018.** Results will be available, and the monitoring plan is available on the Town's website.

For more Information regarding DEC's ongoing actions, please contact DEC at region8@dec.ny.gov

Attachment 7

HIGH ACRES LANDFILL
ODOR ABATEMENT UPDATE

March 28,2018

DEC remains committed to addressing the problem of odors originating from the Waste Management (WM) High Acres Landfill and issued a Notice of Violation (NOV) to WM on February 2, 2018 requiring them to take several actions to address odors at the facility. This fact sheet provides an update to the one issued by DEC and dated March 6,2018, so will not repeat all the information contained therein. We will continue to keep the community updated on our actions, and this and other relevant information is posted on the Town of Perinton Website.

STATUS OF COMPLIANCE WITH NOTICE OF VIOLATION

To date, WM has made on-time delivery of the submissions required by the NOV. Some measures are complete (see March 6th Update) and the following updates the status of those measures still underway which are contained in the NOV:

- Requirement for horizontal gas collectors: Being implemented for all new cells, and the retrofit of existing cells is now complete;
- The installation of an additional 9 acres of geo-membrane continues, with an expected completion date no later than March 31; (see below);
- Air monitoring for H2S at the Dudley / Northside school and around the perimeter of the Landfill property has commenced, with the results now being made available to the Town, DEC, and public on a weekly basis;
- The First Quarter surface scan with H2S monitoring has been completed, with results pending.

NEXT STEPS

- **WM will complete installation of additional geo-membrane cover** on the South and East slopes of Cell 11 Gas collection infrastructure beneath the geo-membrane is constructed and under vacuum, and all the geo-membrane has been placed. Detail work including the sealing around penetrations such as wells, is continuing with a target completion date of March 31;
- **All gas collection mitigation efforts in cells 10 and 11 such as trenching, laying pipe, or vertical well drilling which require intrusion into "old" waste, an activity which has contributed to odors, is complete.** The remainder of the work, which includes the placement of sufficient waste to allow the new gas collectors to function followed by the installation and grading of cover soil, continues;
- **Enhanced DEC presence** will continue as necessary to assist residents and to establish current conditions through direct observation, complaint response, and citizen interviews.

For more Information regarding DEC's ongoing actions, please contact DEC at Region8@dec.ny.gov

Attachment 8

HIGH ACRES LANDFILL
FACT SHEET

ODOR ABATEMENT UPDATE – APRIL 2018

Introduction. The New York State Department of Environmental Conservation (DEC) remains committed to addressing the problem of odors originating from the Waste Management (WM) High Acres Landfill and keeping area residents informed of ongoing actions. On February 2, 2018, DEC issued a Notice of Violation (NOV) to WM requiring them to undertake several actions to address odors at the facility.

This fact sheet provides an update to the DEC fact sheets of March 6 and March 28, 2018. It will be posted along with all other relevant information regarding DEC's efforts, including sampling reports, on the Town of Perinton website **http://www.perinton.org/highacres-landfill**.

STATUS OF COMPLIANCE WITH NOTICE OF VIOLATION

To date, WM has made on-time delivery of the actions required by the NOV and has completed several of the requirements (see March 6 and March 28 updates). The following is a status of measures still underway by WM:

- The installation of an additional 9 acres of geo-membrane cover was nearly complete until damaged by high winds on April 4, 2018. Immediate steps to repair this damage are being taken. (see below);
- Air monitoring for hydrogen sulfide (H_2S) gases at the Dudley / Northside school and around the perimeter of the landfill property continues. Results are provided to DEC and local officials and are now posted weekly on the Town of Perinton website;
- The first-quarter surface scan with H_2S monitoring has been completed, and a final report is being prepared. Preliminary results, subject to review and confirmation, indicate that exceedances of both the 200 ppm and 500 ppm action levels for methane occurred, and have since been addressed by WM as required by their air pollution control permit and applicable regulations.

NEXT STEPS

- WM is repairing the damage from the wind event and will complete installation of additional geo-membrane cover on the south and east slopes of Cell 11 of the landfill. Replacement material installation is beginning the week of April 16, 2018 and is expected to be complete, weather permitting, by May 8, 2018;
- All gas collection mitigation efforts in Cells 10 and 11, which included trenching, laying pipe, or vertical well drilling that had previously caused odor issues, are complete. Additional waste continues to be placed to ensure proper function of the new gas collectors, followed by the installation and grading of cover soil for slope stability and surface water / gas control;
- Enhanced DEC presence will continue to assist residents and establish current conditions through direct observation, complaint response, and citizen interviews (see below).

DEC'S NEW REPORTING HOTLINE - (585) 453-2416

DEC has established a more formal and comprehensive complaint response process to address issues and concerns of residents living near the High Acres Landfill. The new complaint system will allow DEC to respond directly to complaints, evaluate the situation, and talk directly to residents.

This new system provides a more effective method for DEC to address community concerns. The agency will use the information generated to evaluate the effectiveness of required mitigation steps taken by WM, and to determine if further steps are necessary. The data DEC has received from concerned residents to date has been valuable in helping to understand the extent of the concerns. We appreciate residents' efforts to alert us when problems arise.

To report a complaint, call 585-453-2416

- An independent call center will answer the call and gather basic information such as name, address, phone number, location, type and duration of the observed complaint.
- That information will immediately be emailed to a DEC responder.
- DEC will have complaint response personnel in the neighborhoods from early morning until late evening, including weekends as needed, to respond and meet with the complainant as soon as possible. Calls placed after 10:00 PM and prior to 6:00 AM will be followed up on as soon as possible.
- DEC responders will ask for as many specifics about the event as possible, such as the time the odor was noticed, when it ended (if it is not ongoing when the responder arrives), how strong it was, and other relevant information. These visits will be short to avoid imposing on resident's time.
- Response personnel will document residents' information and note their personal observations of the conditions in the neighborhood at the time of response.

This system will improve DEC's ability to assess any continuing significant issue, including:

- Collection of more comprehensive, real time, and useful information from the people impacted.
- Simultaneous assessment of conditions at specific locations, leading to a better accounting of reports.
- Address concerns that the existing WM complaint hotline is unresponsive.
- Complaint logs will be made available to the Towns of Perinton and Macedon and to residents upon request. WM will have real-time notification of complaints, and call logs and related records will be a part of the DEC file with respect to this facility.

DEC remains committed to fully addressing concerns regarding the landfill. Now that the work required by DEC to mitigate the problems with gas collection at the landfill is nearly complete, it is critical to be able to comprehensively assess the effectiveness of those measures and the current situation and conditions in the neighborhood. We encourage all residents to use the new hotline and assist with our efforts to effectively evaluate conditions and future actions.

For more Information regarding DEC's ongoing actions, please contact DEC.

CONTACT INFORMATION

New York State Department of Environmental Conservation
Region 8
6274 E. Avon-Lima Road
Avon, NY 14414

P: (585) 226-5366 | F: (585 226-2830 |
Region8@dec.ny.gov

Attachment 9

High Acres Landfill | Odor Management Enhancements

Infrastructure Improvements and Modifications

Gas Collection System

Vertical Collection Wells

- Installation of 26 vertical gas wells since June 2017

Horizontal Collection

- Approximately 20,000 additional lineal feet of horizontal collection piping installed in Cells 10 and 11
- Approximately 2600 lf of horizontal gas collection pipes installed in Cell 12A to date

Future Commitment

- Gas Collection Phasing Plans revised to incorporate new regulatory guidance for horizontal well spacing

Gas Conveyance and Control

Header Replacement

- Replaced 12 & 8-inch sub headers in Cell 10
- Installation of approx. 800-ft of sub header in Cell 5
- Installation of approx. 2,600 lineal feet of 18- and 24-inch gas collection header from the enclosed flare and WMRE plant to Cell 11
- Installation of approx. 4,000 lineal feet of lateral piping to new collection

Gas Well Dewatering

- Expansion of Gas Well Dewatering system to include over 100 wells

Improved Control

- Installation of 3,000 scfm utility flare to increase available vacuum in Cells 10, 11 and 12

Backup Power

- Commitment to install backup power generator for LFG control system

Cover Enhancements

Exposed Geomembrane Cap

- Installation of approximately 18 acres of exposed geomembrane cap along the northern and eastern slopes of Cells 10 and 11

Enhanced Interim Cover

- Two foot thick interim soil cover being placed on top of intermediate cover soils along plateau on Cells 10 and 11

Cell 11 Road Side Swale

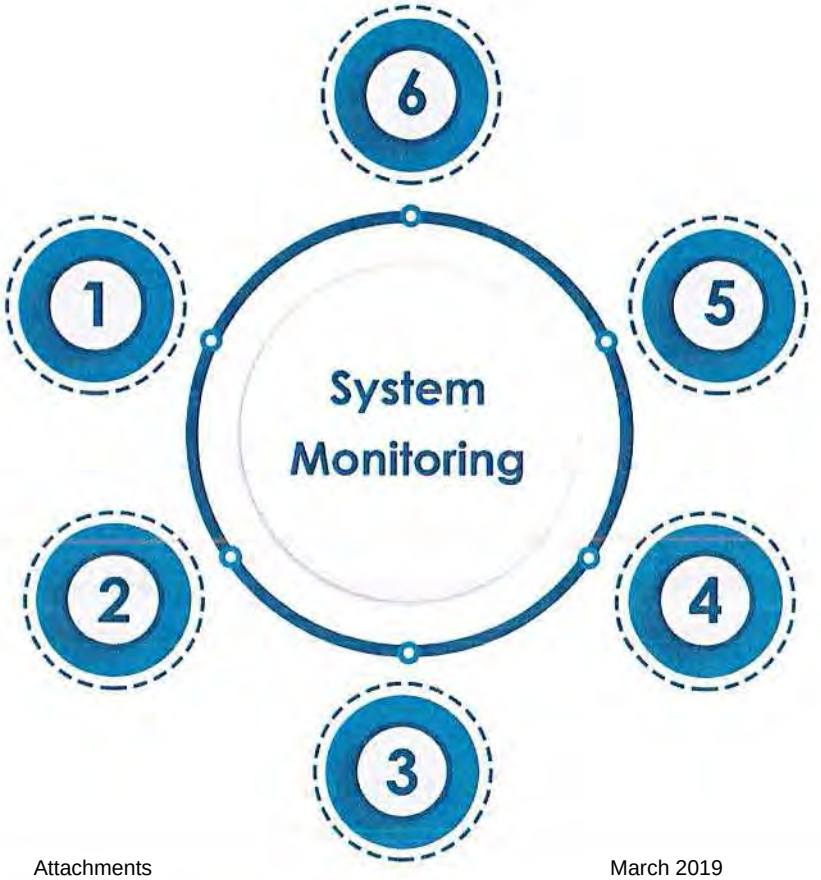
- Installation of 60mil HDPE Liner in the drainage swale

Future Commitment

- Revision of O&M Manual to reaffirm commitment to evaluate cover conditions and install additional geomembrane cover if conditions warrant.

System Monitoring

1. Hired two additional fulltime staff members to support infrastructure construction and increase maintenance of landfill gas collection and conveyance system
2. Weekly well balancing being conducted in Cells 10/11 area
3. Quarterly surface scans being conducted at 200ppm action level
4. Continuous H2S monitoring being conducted around the perimeter of the site and at Northside Dudley Elementary Schools
5. Loci® Sentry H Automated Valves and Well Monitor Units installed to enhance monitoring and control of the gas collection system in various portions of the landfill
6. Automated Flare Reverberation Control installed to monitor and control the landfill gas blowers if low levels of reverberations begin on either flare to prevent vibrations.



Operational Improvements

Cover Placement

- Limited Alternate Operational Cover and supplement with soil cover
- Incorporated fine grained soils as daily cover
- Placement of enhanced daily and intermediate cover
- Stockpiling and placement of cover throughout working day to minimize working face size
- Pad foot roller utilized to "seal" working face cover at end of day

Waste Acceptance/Screening

- Relocated waste operations from Cell 10/11 into Cell 12
- Reconfigured site development
  - Larger cells to provide more operational flexibility
  - Delay filling on plateau area of cells 10/11
  - Allow for high/low filling flexibility to account for weather conditions
  - Site development reconfigured from west-east to north-south to move operations further away from residents
- Extensive waste stream evaluation performed to identify and limit receipt of potentially odorous special waste materials
- Limited weekend waste acceptance/hours of operation

Odor Neutralizers/Misters

- Use of granular odor control neutralizer at working face
- Application of neutralizer to waste at intermodal rail transfer station prior to container shipment
- Evaluate multiple odor neutralizer products and delivery mechanisms
- Use of water based neutralizer product in site water trucks and application to haul roads
- Install additional perimeter misting systems
- Implement portable misting units at working face
- Continued evaluation and field testing of odor neutralizer systems

Odor Monitoring

- Certified odor training conducted for in house and third party personnel
- Third party routine off-site odor monitoring being conducted twice per day
- Real time odor investigations conducted in response to hotline calls
- Investigation results relayed to site operations personnel and Town real time

Communications

- Onsite tours and individual meetings with residents
- Neighborhood updates tab was created on www.highacreslandfill.wm.com
- Email notification system implemented for neighbors, state and local officials regarding completed and upcoming site activities
- Regular updates are provided to the NYSDEC and Towns of Perinton and Macedon
- Community connection group formed to allow more regular feedback and communication with residents
- Bi-monthly meetings with the Town of Perinton to discuss operational improvements and current construction.
- Community information meeting held at High Acres on Dec. 11, 2017
- Mitigation plan presented to Perinton Conservation Board Jan. 16, 2018
- Community information meeting held at High Acres on March 20, 2018

High Acres Landfill | Odor Mitigation Status Update

ACTIVITIES TO DATE	STATUS
June 2017	
• **Landfill Gas Collection Wells** - Installation of 8 vertical gas wells	COMPLETE
October 2017	
• **Cell 5 Sub Header Replacement** – Installation of approx. 800-ft of sub header	COMPLETE
• **Cell 10 Sub Header Replacement** – Replace 12- and 8-inch sub headers in Cell 10	COMPLETE
November 2017	
• **Horizontal Collectors in Cells 10 and 11** – Installation of 4 additional collectors	COMPLETE
• **Cell 11 Road Side Swale** – Installation of 60mil HDPE Liner in the drainage swale	COMPLETE
• **Gas Header Restriction** – Locate and remove restriction in 24-inch gas header	COMPLETE
December 2017	
• **Cell 11 Horizontal Gas Collection** – Design, approval and installation of approx. 10,000 lineal feet of horizontal gas collection piping in Cell 11	COMPLETE
• **High Acres Landfill Information Fair** – Community information meeting held on Dec. 11, 2017	COMPLETE
• **Gas Collection Phasing Plans** – Revision of the Gas Collection Phasing plan toinclude additional horizontal/well spacing	COMPLETE
January 2018	
• **Waste Placement in Cell 12A** – Waste placement activities initiated on Jan. 9, 2018	COMPLETE
• **Town of Perinton Conservation Board Presentation** – Mitigation Plan presented to Board Jan.16, 2018	COMPLETE
• **Cell 11 Exposed Membrane Cap** – Installation of approx. 9 acres of Exposed Membrane Cap on the North Slope of Cell 11	COMPLETE
• **Gas Header Installation** – Approx. 2,600 lineal feet of 18- and 24-inch jumper Gas collectionheader from the enclosed flare and WMRE plant to Cell 11	COMPLETE
• **Flare Reverberation Control System** – To eliminate any reverberations caused by the landfill gas flares, an automated control system was installed to monitor and control the landfill gas blowers if low levels of reverberations begin on either flare	COMPLETE
February 2018	
• **Additional Fulltime Staff Members** – Hired two additional fulltime staff members to support infrastructure construction, increase maintenance of landfill gas collection and conveyance system	COMPLETE
• **Landfill Gas Collection Wells** – Installation of 18 gas collection wells in Cells 10/11	COMPLETE
March 2018	
• **Loci® Sentry H Automated Valves and 6 Well Monitor Units** – Installed to enhance monitoring and control of the gas collection system in various portions of the landfill	COMPLETE
• **Collection Installation** – Installation of an additional 6 horizontal collectors across Cells 10 and 11 (4,900 lf total)	COMPLETE
• **Lateral Piping Installation** – Installation of approx. 4,000 lineal feet of lateral piping to new collection	COMPLETE
• **Cell 12A Horizontal Gas Collection** – Installation of the second layer of horizontal gas collection pipes in Cell 12A (approx. 2,600 lf total)	COMPLETE
• **East Slope Cell 11 Horizontal Collectors –** Installation of 8 horizontal gas collection pipes on the East slope	COMPLETE
• **High Acres Information Fair –** Community informational meeting held on March 20th	COMPLETE
May 2018	
• **Exposed Membrane Cap** – Completion of exposed membrane cap and wind defender	COMPLETE
• **Utility Flare** – Installation of 3,000 scfm utility flare to increase available vacuum in Cells 10, 11 and 12	COMPLETE
On-Going Communications	
• Onsite tours and individual meetings with residents	ON-GOING
• Neighborhood Updates tab on www.highacreslandfill.wm.com	
• Email notification system for neighbors, state and local officials regarding completed and upcoming site activities	
• Monthly updates to NYSDEC and Towns of Perinton and Macedon	

PROPOSED/ON-GOING IMPROVEMENTS	ANTICIPATED DATE
Horizontal Collector Cell 12 A	**June 2018**
• Installation of third row of horizontal collectors in Cell 12 A	
Backup Power Generator for LFG Flares	**September 2018**
Gas Well Dewatering System	**September 2018**
Evaluation and Field Testing of Odor Neutralizer Systems	**Ongoing**

Attachment 10

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Regional Director, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5366 | F: (585) 226-9485
www.dec.ny.gov

September 24, 2018

Mr. Jeffrey G. Richardson
Sr. District Manager
Waste Management of New York, LLC
425 Perinton Parkway
Fairport NY 14450

Dear Mr. Richardson:

As you are aware, this Department is in the process of preparing a formal response to the Petition submitted by Linda Shaw, Esq. on behalf of her clients dated July 25, 2018.

On September 20 2018, we were able to access through the Town of Perinton website the letter from Waste Management ("WM") to the Town dated September 14, 2018 containing certain commitments and other information relative to further efforts to be taken to minimize odors from the High Acres facility. While the Town and WM are not in the position to dictate to DEC what aspects of your agreement we will enforce or how and when my staff will meet or otherwise conduct our business, we remain committed to work with both parties as we have throughout the pendency of this problem, as well as on behalf of the residents of Perinton and Macedon towards achieving an improved situation in the neighborhoods. We look forward to that continued cooperation, and are in the process of reviewing your agreement with the Town to assess how its terms may fit within the context of WM's Part 360 permit and O&M Manual.

In addition, on September 20, 2018, we received WM's response to the residents' petition. The response was voluminous, and staff has begun its review of the information contained in it.

While a more complete response to the Petition will be forthcoming soon, our review of the relevant information from residents, my staff, and the company, including your recent set of commitments to the Town, has resulted in a determination that an interim operational measure, as described below, is appropriate.

Commencing October 1,2018, WM is not to dump rail waste on any operating day prior to 10:15 a.m. In addition, no rail cars containing waste are to be left on site overnight (exclusive of the night of delivery). In short, WM is directed to process all the rail cars on the business day following delivery. In recognition of the shorter operating hours on Saturday, cars delivered on Friday which could not be processed on Saturday, may be stored until Monday, so long as that does not prevent any cars delivered through the weekend from being processed on Monday as well. To the extent this directive impacts delivery schedules or the number of cars received, we trust you will make appropriate arrangements with CSX.

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

The rationale for this directive follows.

We support the plan to study the rail traffic contained in your commitment to the Town of Perinton. As we have discussed on several occasions, there is a need to establish delivery times, any delays in the downstate transfer process, and related logistical issues that your study will address. We also support the 12-month period of study as it will aid the evaluation of whether, in fact, rail cars are more "ripe" in summer months, even if the delivery times are the same, due to outdoor temperature. The directive to delay daily rail waste disposal will inform the analysis of whether the widely held view that NYC waste presents a different and significant contribution to a problem has merit, and this measure can be implemented while the study is underway.

In addition, attached you will find a chart my staff prepared breaking down, by time of day, the contacts received by this office following completion by WM of the fugitive gas mitigation measures in mid-May. We used the period between May 25th and the end of the summer to evaluate the current situation in order to avoid the analysis being impacted by conditions existing while the mitigation measures were being implemented, since during that time there is no debate about the existence of odors at an unacceptable level. While it is not universally the case (see, e.g. July 23rd and 24th) it is clear that a majority of notifications received on many of the "bad" days, i.e. when the wind is from the SSE, are received prior to 10:00 a.m. The second attachment removes the pre-9:30 a.m. column, and the difference in the totals is apparent and significant.

This pattern of the early morning notifications has been consistent over time. Different suggestions as to why this occurs have been made, including meteorology in the early morning, the creation of an early issue as the prior day's cover is removed, and the simple fact that in the early morning residents are out to begin their school/work day. Whether it is one factor or some combination, given the information available to us and your agreement to focus on rail as a potential factor, this directive is appropriate as an aide to the analysis.

The delay in dumping this waste stream also means that it will commence during our monitor's normal work hours, which will assist in our continuing assessment and oversight of the situation.

Finally, we recognize the inherent problems with the extent of the information contained in the FAFE app. notification system, and have discussed that issue on several occasions with the residents' counsel, encouraging them to provide more complete and useful information through the Hotline and/or odor complaint log we made available. However, despite the obvious shortcomings in their system, it remains the case that on the "bad" days, there has been a general corroboration, by our staff, Towpath, or both, of the existence of some level of detectable odor, even if of limited duration, and again often most noticeable in the early morning. As a result, we are not, as WM has suggested, prepared to ignore the information received from that system.

Again, while we will provide a more complete response to the petition in the coming days, there is no reason to delay the implementation of this interim measure. Absent a determination by DEC to the contrary, this directive is to remain in place through the completion of the company's 12-month rail study. This is without prejudice to our directing further appropriate measures in the future.

Thank you for your continued cooperation in the effort to address these issues.

Very truly yours,

Paul J. D'Amato
Regional Director

Attachments
cc: G. MacLean
S. Foti
L. Schwartz, Esq.

Attachment 11

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Regional Director, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5366 I F: (585) 226-9485
www.dec.ny.gov

October 5, 2018

Mr. Jeffrey G. Richardson
Sr. District Manager
Waste Management of New York, LLC
425 Perinton Parkway
Fairport NY 14450

Dear Mr. Richardson:

This is in response to the two letters received from Waste Management ("WM") dated September 26th and 28th, and is also in furtherance of the discussion we had on October 2, 2018 relative to the need to move forward with meaningful efforts to minimize to the extent possible any remaining negative off - site impacts caused by odors from the High Acres facility.

As you know, the directive to delay on an interim basis the deposition of solid waste delivered by rail contained in my letter dated September 24, 2018 was an attempt to separate that waste stream for a limited period each day to assess any impact such a delay would have on the detection of odors in the neighborhoods surrounding the facility. As you are aware, there has been a focus on whether rail waste has a significant incremental impact on off - site odors, and we recognized in our letter the commitment made by WM to the Town of Perinton to undertake a study designed to evaluate many aspects of the rail waste issue. The additional directive to process all rail cars the day they are received, was likewise an effort to minimize the time, particularly during what may remain of warm weather this year, that rail containers with waste are stored on site.

The two WM letters expressed concerns regarding both directives, in terms of impacts on operations and an ability to fully comply, given your assertions that CSX has significant control over delivery schedules. It remains somewhat curious as to the reasons why WM has, according to your counsel, such limited control over the delivery of a commodity that you pay to ship. However, we recognize that shipping logistics will be evaluated as part of your study. It was not my intention to create an unachievable requirement, but rather to inform the analysis by adjusting one significant variable associated with the operation. And despite the protestations, we remain of the belief that adjusting the deposition of rail waste, even if for a more limited duration, has the potential to provide useful information.

After further consideration and discussion, and for the reasons described below, we are willing to adjust the directives contained in my September 24th letter. Most significantly among those reasons is the set of commitments made by WM to this agency to move forward on further odor control measures, and to expedite the study of incoming waste.

As a result, the following measures will be taken by the dates indicated:

- WM will, within 90 days of the date of this letter, submit for the Department's review a Comprehensive Odor Control Study, along with a design for implementation. This is intended to result in the implementation of a permanent, year-round set of physical and /or other measures to decrease the frequency, severity, and geographic extent of offsite odors;

- WM will build and have ready for use at least 18 months of constructed, surplus cell capacity. This includes the acreage recently approved for use as part of Cell 12B. This requirement is designed to provide operational flexibility in terms of location of working faces, elevations of areas used, etc. in order to adjust operations based on weather conditions;

- WM will, on or before November 1, 2018, submit a revised, comprehensive, and updated Gas Collection and Control System ("GCCS") Plan to the Department. The plan will, among other measures described therein, provide detail and memorialize the commitment to place horizontal gas collection in accordance with the recently modified Part 363 regulations, as well as demonstrate plans to meet or exceed the requirements of the applicable NSPS standard(s);

- WM will expedite completion of the study of materials delivered by both truck and rail referenced in its September 14, 2018 letter to the Town of Perinton. We appreciate the goal of studying the entire system through all four seasons, and are also interested in any information that can only be collected in warm weather, such as temperature in containers, impact of temperature on level of odor, etc. However, we see no reason why the analysis of logistics, such as the origin, location, collection and transport time for the waste streams whether transported by rail or truck, and addressing issues with CSX such as scheduling /delivery issues, should take 10 -12 months. That being the case, we expect delivery of the study, with the exception of those aspects which must be evaluated in summer months (which can serve as a supplement to the study) on or before February 15, 2019;

- WM will continue to delay the deposition of rail waste on a daily basis through the month of October. Taken together with what we have already observed, this should provide enough days of various wind direction to assist the analysis as intended by my original letter. In addition, a return to normal operation in November will help inform the analysis with respect to the impact of cooler temperatures on waste/odor conditions, and avoid a lengthy delay in our attempt

to reach any conclusions about volumes or origin of waste impacting odors as well as any further necessary measures to be taken;

- With respect to the remaining days in October, in order to be consistent going forward with the way we previously compiled notifications received from the FAFE app. and the hotline and provided them to you, WM may begin rail waste deposition at 9:30 a.m. rather than 10:15. This slight adjustment will still provide the desired gap between truck and rail waste being deposited. And while we expect that every possible effort will be made to empty cars on the day of delivery as directed, given the limited weekend hours of operation and WM's assertion that its ability to comply depends in large part on the need to work on the CSX scheduling issues over the coming weeks, we will not impose the 24-hour requirement, but rather expect that any car delivered will be emptied within 48 hours of delivery.

  Of course, we reserve all rights to adjust a position or demand as additional information is collected.

Thank you for your attention to and anticipated cooperation in this matter.

Very truly yours,

Paul J. D'Amato

Paul J. D'Amato
Regional Director

Attachments
cc: G. MacLean
S. Foti
L. Schwartz, Esq.

Attachment 12

WASTE MANAGEMENT

HIGH ACRES LANDFILL & RECYCLING CENTER
A WASTE MANAGEMENT COMPANY
425 Perinton Parkway
Fairport, New York 14450
585 223-6132
585 223-6898 (Fax)

September 14, 2018

Honorable Michael G. Barker
Perinton Town Supervisor
1350 Turk Hill Road
Fairport, New York 14450

Dear Supervisor Barker:

We write to provide an update to you and to the Town Board concerning the extensive efforts undertaken by Waste Management of New York, LLC ("Waste Management" or "WMNY") to address community concerns and improve operations at the High Acres Landfill and Recycling Center ("High Acres" or "Facility"). We also want to reiterate Waste Management's commitment to continue to work with the Town of Perinton, and the New York State Department of Environmental Conservation ("DEC") on implementing and documenting meaningful and actionable improvements and enhancements at the Facility, including providing additional information on those which have already been implemented.

Waste Management is committed to addressing the Town's concern with off-site migration of undue odors through the modification of the O&M manual or if appropriate, instituted as part of other agreements that concern facility operations. Both the Town and Waste Management acknowledge that some off-site odors will be generated as part of any landfill operation; however, Waste Management remains fully committed to the community and the Town's leadership to operate as a good neighbor as it has been for nearly 50 years.

To that end, WMNY is committed to undertaking and implementing the following measures to minimize to the extent feasible off-site odor concerns. Waste Management and the Town are actively engaged in defining reasonable timeframes to complete these measures, and an approximate timeline for the implementation of these measures is provided in ***italics***. The implementation of some of these measures may be reliant on third parties outside the control of Waste Management or the Town, therefore further discussions to refine certain scopes of work and completion dates will continue through to the end of the month.

These measures include the following:

- Reviewing and adopting an appropriate procedure using the more objective ASTM standard based on the N-butanol scale to gauge odor intensity/duration and determine the need for further actions (***on-going & 2-months***);

- Implement real time responses to odor complaints and verification thereof by trained third-party consultant using the N-butanol scale (***on-going***);

- The installation of an enhanced permanent mist barrier system and an enhanced perimeter mist barrier system (***3-months***);

- Reviewing, identifying and implementing additional operational and/or technical measures that would effectively address any undue off-site gas and garbage odors (***on-going***);

- Continue monitoring currently in place for H2S and methane (***on-going***);

- WMNY will provide the Town of Perinton on an annual basis with a 5 year fill progression plan (or update) that demonstrates sufficient constructed capacity to allow for high/low fill scenarios for operational flexibility, as appropriate;

- Implementing bi-weekly progress meetings with the Town and DEC to discuss operations at the landfill (***1-month***);

- DEC Inspection Staff and Waste Management operations staff to appropriately address any deficiencies that DEC and WMNY conclude contributed or likely contributed to undue off-site odors within specific timeframes to be established by the Town, WMNY and DEC (***3-months***);

- Provide copies of specific engineering details for tying into the membrane covered upper side-slopes of Cells 10 and 11, with those plans being reviewed and approved by DEC after consultation with the Town (6-***months prior to tie-in***);

- Undertaking a study of materials delivered by both truck and rail to the Facility to determine the nature and extent of undue odors, if any, contributed by the same; identify additional mitigative measures to reduce as feasible undue odors and implement those measures, to the extent practical and effective, to control odors (***Initiate the study within 1-month. The overall duration of the study will be 10-12 months in order to evaluate potential seasonal affects. However, Waste Management and the Town will develop interim milestone deadlines for various phases of the study and implement recommended measures from each phase as/if it is determined they will effectively reduce odors, prior to completing the entirety of the study)***.

In addition to the commitment of future resources to address undue off-site odors, this letter summarizes the status of the various improvements already undertaken in a collaborative effort by the Town and Waste Management at High Acres to minimize such off-site odors. The

extensive infrastructure measures implemented cost more than $4 million to design and construct, and were constructed by Waste Management on an expedited basis, including during extended hours on holidays and weekends. Indeed, the work Waste Management undertook as detailed herein would have normally taken approximately a year and a half to complete, but was finished in less than five months.

We note that off-site gas odors which were a concern and resulted in Waste Management constructing numerous enhancements to the Facility (as well as extensive operations and other modifications), are not currently prevalent to the point of presenting a significant concern. However, WMNY will continue to monitor and address any future off-site odor concerns as appropriate, as well as fully maintain those enhancements at the Facility. Please also note that while Waste Management has been and remains ready and willing to work with the community to address legitimate issues, it does not concede the validity of any claims asserted or the relief sought by a non-governmental organization and its supporters in a Petition concerning the Facility recently filed with DEC, nor does Waste Management concede the validity of any claims filed or relief sought by such NGO and by others regarding proceedings filed in federal or state court concerning the Facility, as Waste Management is vigorously defending each of those proceedings. As such, neither this letter, nor the commitments made in it constitute admissions of any kind.

Further, in addition to the infrastructure associated with gas collection and control system and other measures that were constructed, the following cover enhancements and operational improvements were implemented, as well as instituting a monitoring program not seen at any other operating facility.

INFRASTRUCTURE ENHANCEMENTS FOR GAS COLLECTION, COVER ENHANCEMENTS, MONITORING PROGRAM AND OTHER OPERATIONAL IMPROVEMENTS

- Replaced underperforming gas extraction wells and impaired gas conveyance pipes;
- Installed a new 18"-24" diameter vacuum header pipe from the gas plant and flare location to Cell 11;
- Installed approximately 20,000 lineal feet of additional horizontal gas collection line as recommended by the Perinton Conservation Board and concurred with by the Perinton Town Board;
- Implemented free draining slip form wells and additional horizontal collection in Cell 12;
- Installed 60 mil HDPE liner in the drainage swale for Cell 11;

- Weekly gas well balancing conducted in Cells 10 and 11, and bi-weekly for the remainder of the Facility site, to maximize gas collection and odor reduction as recommended by the Perinton Conservation Board and concurred with by the Perinton Town Board;

- Installed a new utility flare in the area of Cells 10, 11 and 12 to enhance odor reduction (in addition to the extensive infrastructure improvements referenced herein);

- Installed approximately 2,600 lineal feet of horizontal gas collection pipes in Cell 12A;

- Replaced 8" and 12" sub-headers in Cell 11 and installation of approximately 800 feet of sub-header in Cell 5;

- Upgraded of the gas dewatering system to include over 100 wells focusing on the Cell 10/11 Area;

- Committed to install a backup power generator to operate the LFG collection and control system when power is not available as recommended by the Perinton Conservation Board and concurred with by the Perinton Town Board;

- Installed over 18 acres of geo-synthetic cover;

- Committed to the placement of two-foot-thick interim soil cover on top of the plateau of Cells 10 and 11;

- Quarterly surface scans conducted at a 200 ppm action level and taking concomitant measures when such scans show results above such action level when the regulations and requirements at issue provide for action levels at a much higher level (500 ppm) as recommended by the Perinton Conservation Board and concurred with by the Perinton Town Board;

- Continuous H2S monitoring conducted around the perimeter of the Facility and at the Northside/Dudley Elementary School as recommended by the Perinton Conservation Board and concurred with by the Perinton Town Board;

- Installed automated valves and well monitor units to enhance monitoring and control of the gas collection system in various portions of the Facility;

- Installed automated flare reverberation control measures to monitor and control the Facility gas blowers if low levels of reverberations begin on either flare to prevent undue vibrations as recommended by the Perinton Conservation Board and concurred with by the Perinton Town Board; and

- Utilized alternative equipment on cover soils to better seal intermediate cover materials.

In addition to the extensive infrastructure enhancements and cover improvements, Waste Management also instituted (and is instituting) numerous operational enhancements that include:

- The hiring of additional staff to monitor and maintain the Facility's gas infrastructure with 24/7 availability;

- Increased the frequency and content of community outreach and communication both by direct correspondence and other methods;

- The placement of enhanced daily and intermediate cover;

- Stockpiling and placement of cover throughout the working day to minimize working face size;

- Utilized alternative equipment on cover soils to better seal intermediate cover materials;

- Relocated waste operations from Cell 10 and 11 to Cell 12 as recommended by the Perinton Conservation Board and concurred with by the Perinton Town Board;

- Reconfigured site development to delay filling on the plateau of Cells 10 and 11 as recommended by the Perinton Conservation Board and concurred with by the Perinton Town Board and utilize larger cells to provide more operational flexibility;

- Reconfigured site development to proceed from North to South instead of West to East, to move the next area of cell construction further away from Perinton Parkway;

- Performed expanded waste stream evaluations to identify and limit potentially odorous special waste material;

- Implemented of additional odor neutralizers and misters and continued evaluation of multiple odor neutralizer and delivery mechanisms;

- Applied odor agents to waste containers during the summer season at the intermodal rail transfer stations;

- Installed additional perimeter misting systems as well as the use of portable misting units; and

- Provided Odor monitoring, including certified training conducted for in-house and third-party personnel, as well as provided third-party routine offsite monitoring and follow up, along with providing results of same to site operations personnel and to the Town.

Furthermore, while the DEC issued a Notice of Violation dated February 2, 2018 ("NOV"), Waste Management had already proposed most of the measures identified in the NOV. In fact, it had already begun substantial construction of these measures with some actually completed at the time the NOV was issued. Moreover, Waste Management complied with each of the NOV's requirements and as indicated, would have done so even in the absence of an NOV being issued because of Waste Management's commitment to the community, and the Town's leadership. Please find enclosed summaries that set out each of the enhancements completed, as well as the dates they were constructed or implemented.

Last, Waste Management is also committed to adopt additional measures not currently being implemented or identified herein to improve operations and as feasible, to address undue off-site odors. Waste Management will also provide the Town with information concerning soil cover to ensure it is appropriate. We will continue to work with the Town and DEC to respond in real time (as we have already begun to do as referenced above) regarding concerns when significant events warrant such a response.

Waste Management is proud of its nearly 50 year positive and collaborative working relationship with the Town of Perinton. We remain ready, willing and able to work with the Town to implement and document meaningful and actionable enhancements at the Facility as discussed herein. Waste Management will make staff available at the Town's convenience to work out the details of the measures it has committed to undertake with Town representatives (in addition to that already in process and being implemented).

Very truly yours,

Jeffrey G. Richardson
Sr. District Manager
Waste Management of New York, LLC

High Acres Landfill | Odor Management Enhancements

Infrastructure Improvements and Modifications

Gas Collection System

Vertical Collection Wells

- Installation of 26 vertical gas wells since June 2017

Horizontal Collection

- Approximately 20,000 additional lineal feet of horizontal collection piping installed in Cells 10 and 11
- Approximately 2600 lf of horizontal gas collection pipes installed in Cell 12A to date

Future Commitment

- Gas Collection Phasing Plans revised to incorporate new regulatory guidance for horizontal well spacing

Gas Conveyance and Control

Header Replacement

- Replaced 12 & 8-inch sub headers in Cell 10
- Installation of approx. 800-ft of sub header in Cell 5
- Installation of approx. 2,600 lineal feet of 18- and 24-inch gas collection header from the enclosed flare and WMRE plant to Cell 11
- Installation of approx. 4,000 lineal feet of lateral piping to new collection

Gas Well Dewatering

- Expansion of Gas Well Dewatering system to include over 100 wells

Improved Control

- Installation of 3,000 scfm utility flare to increase available vacuum in Cells 10, 11 and 12

Backup Power

- Commitment to install backup power generator for LFG control system

Cover Enhancements

Exposed Geomembrane Cap

- Installation of approximately 18 acres of exposed geomembrane cap along the northern and eastern slopes of Cells 10 and 11

Enhanced Interim Cover

- Two foot thick interim soil cover being placed on top of intermediate cover soils along plateau on Cells 10 and 11

Cell 11 Road Side Swale

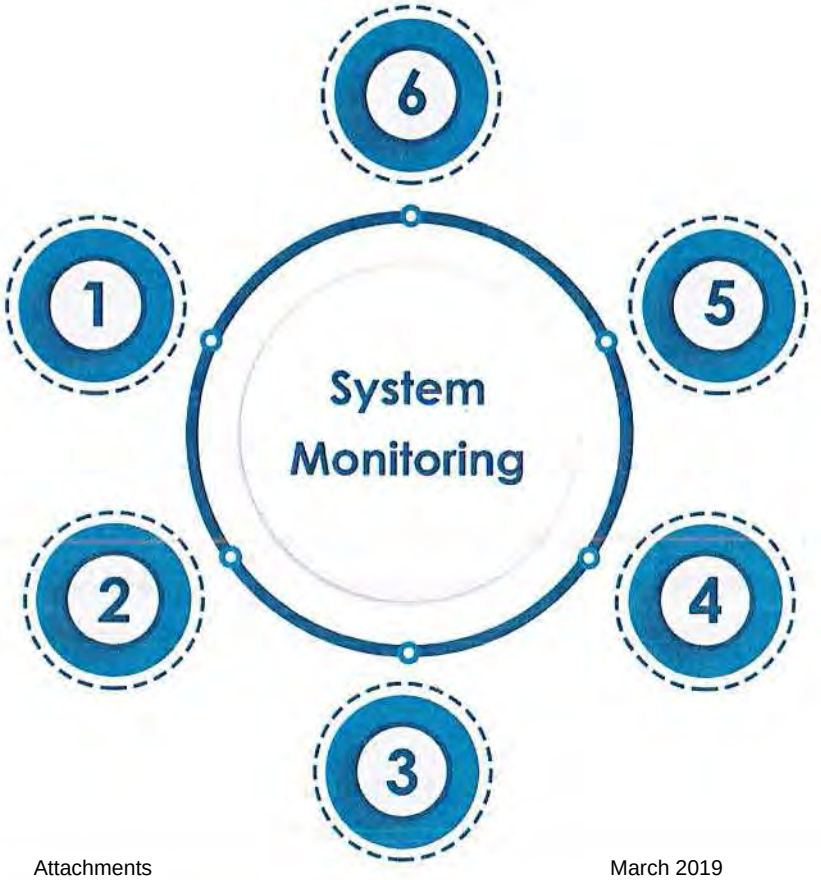
- Installation of 60mil HDPE Liner in the drainage swale

Future Commitment

- Revision of O&M Manual to reaffirm commitment to evaluate cover conditions and install additional geomembrane cover if conditions warrant.

System Monitoring

1. Hired two additional fulltime staff members to support infrastructure construction and increase maintenance of landfill gas collection and conveyance system
2. Weekly well balancing being conducted in Cells 10/11 area
3. Quarterly surface scans being conducted at 200ppm action level
4. Continuous H2S monitoring being conducted around the perimeter of the site and at Northside Dudley Elementary Schools
5. Loci® Sentry H Automated Valves and Well Monitor Units installed to enhance monitoring and control of the gas collection system in various portions of the landfill
6. Automated Flare Reverberation Control installed to monitor and control the landfill gas blowers if low levels of reverberations begin on either flare to prevent vibrations.



Operational Improvements

Cover Placement

- Limited Alternate Operational Cover and supplement with soil cover
- Incorporated fine grained soils as daily cover
- Placement of enhanced daily and intermediate cover
- Stockpiling and placement of cover throughout working day to minimize working face size
- Pad foot roller utilized to "seal" working face cover at end of day

Waste Acceptance/Screening

- Relocated waste operations from Cell 10/11 into Cell 12
- Reconfigured site development
  - Larger cells to provide more operational flexibility
  - Delay filling on plateau area of cells 10/11
  - Allow for high/low filling flexibility to account for weather conditions
  - Site development reconfigured from west-east to north-south to move operations further away from residents
- Extensive waste stream evaluation performed to identify and limit receipt of potentially odorous special waste materials
- Limited weekend waste acceptance/hours of operation

Odor Neutralizers/Misters

- Use of granular odor control neutralizer at working face
- Application of neutralizer to waste at intermodal rail transfer station prior to container shipment
- Evaluate multiple odor neutralizer products and delivery mechanisms
- Use of water based neutralizer product in site water trucks and application to haul roads
- Install additional perimeter misting systems
- Implement portable misting units at working face
- Continued evaluation and field testing of odor neutralizer systems

Odor Monitoring

- Certified odor training conducted for in house and third party personnel
- Third party routine off-site odor monitoring being conducted twice per day
- Real time odor investigations conducted in response to hotline calls
- Investigation results relayed to site operations personnel and Town real time

Communications

- Onsite tours and individual meetings with residents
- Neighborhood updates tab was created on www.highacreslandfill.wm.com
- Email notification system implemented for neighbors, state and local officials regarding completed and upcoming site activities
- Regular updates are provided to the NYSDEC and Towns of Perinton and Macedon
- Community connection group formed to allow more regular feedback and communication with residents
- Bi-monthly meetings with the Town of Perinton to discuss operational improvements and current construction.
- Community information meeting held at High Acres on Dec. 11, 2017
- Mitigation plan presented to Perinton Conservation Board Jan. 16, 2018
- Community information meeting held at High Acres on March 20, 2018

High Acres Landfill | Odor Mitigation Status Update

ACTIVITIES TO DATE	STATUS
June 2017	
• **Landfill Gas Collection Wells** - Installation of 8 vertical gas wells	COMPLETE
October 2017	
• **Cell 5 Sub Header Replacement** – Installation of approx. 800-ft of sub header	COMPLETE
• **Cell 10 Sub Header Replacement** – Replace 12- and 8-inch sub headers in Cell 10	COMPLETE
November 2017	
• **Horizontal Collectors in Cells 10 and 11** – Installation of 4 additional collectors	COMPLETE
• **Cell 11 Road Side Swale** – Installation of 60mil HDPE Liner in the drainage swale	COMPLETE
• **Gas Header Restriction** – Locate and remove restriction in 24-inch gas header	COMPLETE
December 2017	
• **Cell 11 Horizontal Gas Collection** – Design, approval and installation of approx. 10,000 lineal feet of horizontal gas collection piping in Cell 11	COMPLETE
• **High Acres Landfill Information Fair** – Community information meeting held on Dec. 11, 2017	COMPLETE
• **Gas Collection Phasing Plans** – Revision of the Gas Collection Phasing plan toinclude additional horizontal/well spacing	COMPLETE
January 2018	
• **Waste Placement in Cell 12A** – Waste placement activities initiated on Jan. 9, 2018	COMPLETE
• **Town of Perinton Conservation Board Presentation** – Mitigation Plan presented to Board Jan.16, 2018	COMPLETE
• **Cell 11 Exposed Membrane Cap** – Installation of approx. 9 acres of Exposed Membrane Cap on the North Slope of Cell 11	COMPLETE
• **Gas Header Installation** – Approx. 2,600 lineal feet of 18- and 24-inch jumper Gas collectionheader from the enclosed flare and WMRE plant to Cell 11	COMPLETE
• **Flare Reverberation Control System** – To eliminate any reverberations caused by the landfill gas flares, an automated control system was installed to monitor and control the landfill gas blowers if low levels of reverberations begin on either flare	COMPLETE
February 2018	
• **Additional Fulltime Staff Members** – Hired two additional fulltime staff members to support infrastructure construction, increase maintenance of landfill gas collection and conveyance system	COMPLETE
• **Landfill Gas Collection Wells** – Installation of 18 gas collection wells in Cells 10/11	COMPLETE
March 2018	
• **Loci® Sentry H Automated Valves and 6 Well Monitor Units** – Installed to enhance monitoring and control of the gas collection system in various portions of the landfill	COMPLETE
• **Collection Installation** – Installation of an additional 6 horizontal collectors across Cells 10 and 11 (4,900 lf total)	COMPLETE
• **Lateral Piping Installation** – Installation of approx. 4,000 lineal feet of lateral piping to new collection	COMPLETE
• **Cell 12A Horizontal Gas Collection** – Installation of the second layer of horizontal gas collection pipes in Cell 12A (approx. 2,600 lf total)	COMPLETE
• **East Slope Cell 11 Horizontal Collectors –** Installation of 8 horizontal gas collection pipes on the East slope	COMPLETE
• **High Acres Information Fair –** Community informational meeting held on March 20th	COMPLETE
May 2018	
• **Exposed Membrane Cap** – Completion of exposed membrane cap and wind defender	COMPLETE
• **Utility Flare** – Installation of 3,000 scfm utility flare to increase available vacuum in Cells 10, 11 and 12	COMPLETE
On-Going Communications	
• Onsite tours and individual meetings with residents	ON-GOING
• Neighborhood Updates tab on www.highacreslandfill.wm.com	
• Email notification system for neighbors, state and local officials regarding completed and upcoming site activities	
• Monthly updates to NYSDEC and Towns of Perinton and Macedon	

PROPOSED/ON-GOING IMPROVEMENTS	ANTICIPATED DATE
Horizontal Collector Cell 12 A	**June 2018**
• Installation of third row of horizontal collectors in Cell 12 A	
Backup Power Generator for LFG Flares	**September 2018**
Gas Well Dewatering System	**September 2018**
Evaluation and Field Testing of Odor Neutralizer Systems	**Ongoing**

Attachment 13

TOWN OF PERINTON

MEMO

TO: Michael G. Barker, Town Supervisor & the Perinton Town Board

FROM: Perinton Conservation Board

CC: E. Williams, R. Kozarits, R. Place, L. Stid

DATE: 5/8/18

Re: MEH Consulting: High Acres Landfill – Air Monitoring Summary

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Pursuant to recommendations #2 & #7 made by the Perinton Conservation Board on 1/24/18, the Perinton Town Board has requested that the NYSDEC compel Waste Management (WM) to conduct hydrogen sulfide (H_2S) monitoring and to use this monitoring as a "surrogate" to predicting the presence of other hazardous conditions (e.g. the presence of volatile organic compounds or VOC's) that could impact area residents that surround the High Acres Landfill facility. Additionally, the Conservation Board suggested that specific H_2S monitoring be conducted at the Northside Dudley Elementary school.

The Town has since retained MEH Consulting, LLC to review the first 5-weeks of monitoring data and render a health-risk assessment. The H_2S monitoring data summary and analysis is attached.

14-216

May 8, 2018

Mr. Michael Barker
Town Supervisor
Town of Perinton
1350 Turk Hill Road
Fairport, New York 14450
Email: *mbarker@perinton.org*

Re: High Acres Landfill – Air Monitoring Summary
Waste Management Monitoring Stations – Hydrogen Sulfide Data Evaluation
Fairport, New York

Dear Mr. Barker:

ME Holvey Consulting, LLC ("MEHC") was retained by the Town of Perinton to review and provide support regarding the air monitoring being conducted for ambient hydrogen sulfide levels by Waste Management ("WM").

The objective of the summary is to evaluate the hydrogen sulfide levels at the five (5) monitoring locations around the perimeter of the High Acres Landfill.

Background

The High Acres Landfill operated by WM has been the source of foul-smelling odors since the Summer of 2017. The odors had been frequent and lasting extended periods of time. The odors have been identified as a "rotten egg" smell and "garbage".

WM has identified the issues with the landfill gas collection systems and have engineered and installed controls to mitigate the odors. This information can be found on the WM High Acres Landfill website.

As part of the assessment of the on-going mitigation implementation, WM has installed ambient air monitoring devices to assess the hydrogen sulfide concentration around the community surrounding the landfill, including the Dudley Elementary School.

P.O. Box 1252, Fairport, New York 14534
Email: meholvey@gmail.com Phone: 585-690-3361

Data provided by WM for the High Acres landfill show the gas generated at this site is composed of approximately:

- 47% methane;
- 33% carbon dioxide;
- 13% nitrogen;
- 1.4% oxygen; and,
- 6% a combination of other gases, including non-methane organic compounds ("NMOCs") and reduced sulfur compounds such a hydrogen sulfide ("H2S").

NMOCs include compounds such as trichloroethylene, benzene, and vinyl chloride. A large fraction of the NMOCs found in landfill gas are volatile organic compounds ("VOCs). When VOCs combine with nitrogen oxide in the atmosphere they will form ozone. A much smaller fraction of the NMOCs are hazardous air pollutants (HAPs).

NMOCs and hydrogen sulfide typically represent 0.01% – 0.6% and 0% - 1%, respectively, of the total volume of landfill gas.

Hydrogen sulfide levels may also be considered as an indicator of the potential level of individual VOCs. In most cases, landfills do not emit enough VOCs to increase their concentrations above the background levels found in the community.

MEHC evaluated the 2010 WM High Acres Landfill Gas sampling data. The samples were collected from the gas wells for the purpose of the emissions modeling. The samples were measured for VOCs and Sulfur Compounds, including hydrogen sulfide. The data was reviewed and noted the following correlation:

Sample ID	*Individual VOC Concentration*	*H2S Concentration*
LFG-001/005	160 ppb - 22,000 ppb	120,000 ppb
LFG-002/006	150 ppb - 20,000 ppb	150,000 ppb
LFG-003/007	160 ppb - 19,000 ppb	51,000 ppb
LFG-004/008	160 ppb - 19,000 ppb	73,000 ppb

The above data was used for emissions modeling by WM. The concentration of hydrogen sulfide is significantly higher than the individual VOC levels. This supports the concept that low or non-detected hydrogen sulfide levels would also signify much lower VOC concentrations.

Acrulog PPB – Ambient Hydrogen Sulfide Monitor

The Acrulog PPB Hydrogen Sulfide monitors measures low levels of hydrogen sulfide in real time. The Acrulog PPB monitor uses a customized H2S Electrochemical sensor. The monitor auto zeros before each sample (this adjusts for any temperature change or sensor shift) and the sample stream is humidity conditioned to a constant Relative Humidity. The monitor was factory calibrated prior to installation. Re-calibration is required every six (6) months. A monitor "bump" check is scheduled to be performed monthly.

The resolution of the H2S PPB monitor is 1 ppb to 2000 ppb. A measurement is taken every 10 minutes with the following cycle:

1. One (1) minute purge
2. Six (6) minute thermal equilibration
3. Three (3) minute sample collection

The air is monitored every 10 minutes in a 24-hour day. To calculate the one-hour average – six (6) data points collected in an hour are averaged. The Acrulog PPB is currently scheduled to continuously monitor the air for 90 days.

Monitoring Station Locations

Five (5) Acrulog air monitors were installed around the North, South, West, and East perimeters of the High Acres Landfill. The monitors are located at the far edges of the landfill in near proximity to communities of concern. One (1) air monitor was also installed on the Dudley Elementary School rooftop.

Hydrogen Sulfide Results – Week 1 through Week 5

Week 1 Monitoring Results (March 6 – March 13, 2018):

The first week of the Air Sampling did not find detectable levels of hydrogen sulfide at the East, West, or Dudley Monitoring Stations.

The North Monitoring Station had one (1) detectable hydrogen sulfide reading of:

- March 8, 2018 at 3:23 pm – 3 ppb.

The South Monitoring Station had three (3) detectable hydrogen sulfide readings of:

- March 7, 2018 at 11:28 am – 5 ppb
- March 7, 2018 at 12:28 pm – 3 ppb
- March 11, 2018 at 6:28 pm – 3 ppb

The levels were below the NYSDEC 10 ppb 1-hour threshold.

Week 2 Monitoring Results (March 13 – March 20, 2018):

The second week of the Air Sampling did not find detectable levels of hydrogen sulfide at any of the air monitoring stations.

Week 3 Monitoring Results (March 21 – March 27, 2018):

The third week of the Air Sampling did not find detectable levels of hydrogen sulfide at the East, West, or Dudley Monitoring Stations.

The North Monitoring Station had one (1) detectable hydrogen sulfide reading of:

- March 21, 2018 at 12:31 pm – 5 ppb.

The South Monitoring Station had three (3) detectable hydrogen sulfide readings of:

- March 21, 2018 at 2:33 pm – 4 ppb
- March 23, 2018 at 8:53 pm – 3 ppb
- March 23, 2018 at 9:03 pm – 6 ppb

The levels were below the NYSDEC 10 ppb 1-hour threshold.

Week 4 Monitoring Results (March 28 – April 3, 2018):

The fourth week of the Air Sampling did not find detectable levels of hydrogen sulfide at any of the air monitoring stations.

Week 5 Monitoring Results (April 4 – April 10, 2018):

The fifth week of the Air Sampling did not find detectable levels of hydrogen sulfide at any of the air monitoring stations.

Action Thresholds

The NYSDEC (6 NYCRR-NY 257-10.3) has a one-hour standard of 10 parts per billion (ppb) or 14.0 $\mu g/m^3$. The standard is based on the fact that odors can unreasonably interfere with the comfortable enjoyment of life and property. Results below the 10-ppb averaged over one (1) hour are not considered to meet this threshold.

The current air sampling data shows that the hydrogen sulfide readings are not at a level of concern.

Hydrogen Sulfide Information

Hydrogen Sulfide level information provided by the Agency for Toxic Substances & Disease Registry (ATSDR) include the following Minimal Risk Levels (MRLs). MRLs are derived when reliable and sufficient data exist to identify the target organ(s) of effect or the most sensitive health effect(s) for a specific duration for a given route of exposure. An MRL is an estimate of the daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse non-cancer health effects over a specified duration of exposure.

MRLs include ample safety factors to ensure protection of sensitive human populations., including children.

The following are the ATSDR MRLs for hydrogen sulfide:

- ATSDR MRL Acute Duration (1 to 14 days) Inhalation - 70 PPB
- ATSDR MRL Intermediate Duration (>14 to 364 days) Inhalation – 20 PPB

Again, the air testing results at each of the air monitoring stations are below these established thresholds. At this time, odors have become sporadic and transient. The ATSDR thresholds are based on an extended duration and daily exposure.

There have been community concerns regarding the Lyndon Road Baseball fields and the landfill odors. The West Air Monitoring Station has shown no detectable levels of hydrogen sulfide since the installation on March 6, 2018. The Lyndon Road Baseball Fields are beyond this monitoring station which identifies the hydrogen sulfide is not at a level of concern.

The identified hydrogen sulfide levels and therefore, the associated individual VOCs show the concentrations below the potential for health risks.

Please call me at (585) 690-3361 if you have any questions or comments.

Respectfully Submitted,

ME Holvey Consulting, LLC by Mary Ellen Holvey, CIH
Senior Industrial Hygienist

References:

Toxicological Profile for Hydrogen Sulfide and Carbonyl Sulfide
(https://www.atsdr.cdc.gov/toxprofiles/tp114.pdf)

Health Consultation - Evaluation of Community Exposures and Concerns Related to Fenimore Landfill
(https://www.atsdr.cdc.gov/hac/fenimorelandfill_hc_final_may112016_508.pdf)

https://www.atsdr.cdc.gov/HAC/landfill/html/appe/ctmwlg.pdf

Attachment 14

ANTHONY J. VILLANI, P.C.
ATTORNEYS AT LAW

66 WILLIAM STREET ▪ LYONS, NEW YORK 14489 ▪ 315-946-9707 ▪ FAX 315-946-0373 ▪ E-mail: ajvlaw@rochester.rr.com

November 6, 2018

Via Email and First Class Mail

Paul J. D'Amato, Regional Director
Region 8 - NYS Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, New York 14414

Re: Response of the Town of Macedon, Wayne County, New York to the Petition of Fresh Air for the Eastside, et al, dated July 25, 2018 for Modification of the Part 360 Solid Waste Management Facility Permit issued by DEC to Waste Management of New York, LLC to operate the High Acres Landfill located in the Towns of Macedon and Perinton, New York.

Dear Mr. D'Amato:

Please be advised that we represent the Town of Macedon, Wayne County, New York. In furtherance of your e-mail letter of October 17, 2018 to Town Supervisor Sandy Pagano and Deputy Supervisor, Paul Kenyon, we have been directed by the Town Board to make the following comments on the above referenced Petition.

As we read the Petition, the complaints seem to center around odor generated by (1) landfill gas and (2) odor associated with the landfilling of municipal solid waste delivered to the landfill by rail. We will address these concerns *seriatim.*

LANDFILL GAS

Most of the allegations of the Petition as to this issue are directed to what is called "fugitive emissions" of landfill gas allegedly caused or exacerbated by the absence of horizontal gas collectors. The Town of Macedon is reluctant to comment as both the landfill gas produced and the methods of mitigation are all located in the Town of Perinton . Accordingly, the Town of Macedon had no authority to oversee the operations subject to the Petition. As we understand it, the landfill has been in operation since 1972. Landfilling has only begun this year in the Town of Macedon and post dates the complaints herein. Therefore, it is doubtful that the minor landfilling to date in Macedon has produced landfill gas in sufficient quantity to cause or significantly exacerbate the conditions alleged in the petition. Town records show relatively few complaints from Macedon residents. In addition, the Town Board understands that gas odors that were noted last year and earlier this year have been addressed by Waste Management as is further set forth in exhibits F, G and H below.

Going forward however, the Town of Macedon wishes to assure the Department that it will work with Waste Management to reduce landfill gas emissions. To that end, the Town of Macedon and Waste Management have been engaged in discussions for some time as to technologies directed to the reduction of landfill gas emissions. This is acknowledged by the Petitioners who refer to the option given to Macedon to take 1200 CFM of landfill gas. While Macedon, at the time, was considering conversion to electricity, it is now exploring more environmentally friendly ways to reduce these emissions. The Town of Macedon will continue to work with DEC and Waste Management in the future to mitigate landfill gas emissions.

MSW ODOR

Petitioners further allege that rail access to the landfill has created additional odor problems as a result of the failure of Waste Management to properly manage rail car waste. The petition offers no empirical data or evidence as to the source of the odors, i.e. rail, truck or simply an increase in the amount of MSW landfilled. Petitioners allegedly trace the complaint to the approval, by the Macedon Town Board, of Waste Management's application for rail access to the landfill. In addition, Petitioners allege that in paragraphs 78 *et seq.* of the Petition, increased methane levels resulting from an increase in the amount of landfilled materials and that MSW from New York City "cooks" in sealed rail cars so that, rather than be dissipated during transportation, the sealed odors are all released at the landfill.

As to any increase in volume, the Town of Macedon defers to the limits imposed by DEC. It is the understanding of the Town that Waste Management is not exceeding its permitted capacity.

As to the odors allegedly sourced in the "cooked" rail cars, Petitioners allege in paragraphs 85 and 86 of the Petition that the Town of Macedon conducted an inadequate environmental review of Waste Management's application for railroad access because the Town of Macedon did not fully consider the impact of increased waste product and the impact of odors resulting from MSW sitting in rail cars for longer periods than in trucks.

In fact, the Town of Macedon looked very closely at these two aspects. The work the Town has done with Waste Management and the Town of Macedon's commitment to reducing landfill gas emission is set forth above. Further, it is acknowledged at paragraph 80 of the Petition that Macedon considered an increase in the deposit rate or increased volume.

As to odors allegedly exacerbated by rail rather than truck transport, the Petition sets forth no data showing the relative sourcing of any odors among the various possible causes: truck, rail, method of disposal, rain, wind direction, etc.

In any event, the application for approval and the approval (with SEQRA review) conducted by the Town of Macedon was proper and has never been challenged in any Article 78 proceeding. Copies of the application, engineering studies, SEQRA review, DEC consent and approval are attached and submitted herewith. As is evident therein, the Town of Macedon adequately considered the fact that the railroad cars were sealed which is the basis of Petitioners'

complaint. As a result, we believe the written record disputes the allegations of the Petition.

Macedon decided, and we believe correctly, that there would be no significant odor impact from rail delivery of waste. Moreover, the Town determined that rail delivery would be a significant improvement and reduce environmental impacts by reducing truck traffic to the landfill. The Town of Macedon believes this finding is consistent with the "STRATEGIES TO REDUCE LARGE TRUCK TRAFFIC IN LOCAL COMMUNITIES" attached hereto as Exhibit D. This study showed a significant amount of large truck traffic hauling MSW from downstate to the Finger Lakes. As is represented by Waste Management in its letter of June 30, 2016, attached hereto as Exhibit E:

> Materials now managed by rail have the equivalent of removing more than 70 trucks per day or nearly 18,000 long haul truck trips per year.

Since these appear to be round trip numbers, the total is really closer to 36,000 one way trips per year. The Town of Macedon defers to DEC to convert the diesel fuel to pounds of carbon dioxide not released into the atmosphere by removing these trucks from the road, but it is clearly a significant reduction. Since most of these trucks arrived from the east, Perinton residents, who make up the vast majority of the petitioners, may not have been aware of the burdensome truck traffic prior to the construction and operation of the rail access but residents of Wayne County are relieved by the reduction. Removing possible parochialism, the Town of Macedon believes its decision resulted in several overall environmental and traffic safety benefits. In addition, as with the landfill gas emissions, the Town records show relatively few complaints from Macedon residents on this issue.

Attached hereto are the following exhibits demonstrating the intense review of the Town of Macedon to this application.

EXHIBIT A

Copy of the FEAF filed by Waste Management, SEQRA findings of the Macedon Town Board and Negative Declaration. Of significance is page 14 which shows a potential impact of 50% increase in land fill deposit rate. The Macedon Town Board became the lead agency with the consent of DEC as shown in Exhibit C.

EXHIBIT B

Engineering study prepared by Civil & Environmental Engineers dated April, 2013 submitted in support of the application. The study deals with odors throughout and was considered by the Town Board.

EXHIBIT C

Consent of DEC to Macedon as lead agency.

EXHIBIT D

NYDOT publication "STRATEGIES TO REDUCE LARGE TRUCK TRAFFIC IN LOCAL COMMUNITIES" dated September 8, 2008.

EXHIBIT E

Letter of Waste Management to the Town of Macedon dated June 30, 2016 demonstrating the reduction in truck traffic to the landfill.

EXHIBIT F

Letter from Harris Beach, attorneys for Waste Management, dated September 28, 2018 to DEC reiterating its commitment to resolve any outstanding issues with DEC.

EXHIBIT G

Letter from Harris Beach, attorneys for Waste Management, dated March 1, 2018 giving a history of the complaints underlying the petition and the response by Waste Management.

EXHIBIT H

Letter dated September 14, 2018 from Waste Management to the Supervisor of the Town of Perinton setting forth the actions Waste Management was willing to undertake to "address community concerns and improve operations at the High Acres Landfill."

The Town of Macedon believes it adequately reviewed and approved this project and sees no purpose in reopening it SEQRA review. As a result, the Town finds no basis to voluntarily open this matter for further review based on the data provided to date.

Very truly yours,

Anthony J. Villani

cc: Macedon Town Board

Attachment 15

WM's Use of Horizontal Collectors in Cells 10 and 11

WM's use of horizontal gas extraction wells ("horizontal collectors") in cells 10 and 11 did not permanently impair gas collection and control in these cells. Horizontal collectors are not a cure-all means of landfill gas collection. Historically, vertical gas extraction wells have been the primary means of collecting landfill gas, particularly over the long term. Generally, horizontal collectors are designed to assist in the short term, extracting low quality gas from recently buried waste where operation of vertical extraction wells is not yet feasible. They are usually expected to have a limited life span because the waste mass settles over time, typically crushing them, and because liquids that can accumulate in the collectors also may impair them. The earlier in time and lower in the waste mass that a horizontal collector is located, the more likely it operates at a reduced level, or no longer functions. For these reasons, DEC expects that, other than the topmost layer, many of the horizontal collectors previously installed in cells 10 and 11 by now operate at a reduced level or have completely stopped functioning; they were not intended to do otherwise. Therefore, any concern that a lack of horizontal collectors throughout the waste mass could permanently impact planned gas collection in cells 10 and 11 is misplaced.

Moreover, WM's use of horizontal collectors in these cells complied with the Part 360 permit. As is further explained below, by the time cells 10 and 11 were placed in operation, the Parkway Expansion Phase III Permit Drawing 26 governed the use of horizontal collectors in these cells. Drawing 26 does not specify any absolute maximum spacing. Rather, Drawing 26 denotes "typical" location and spacing of horizontal collectors, allowing cell operation to remain more flexible, based on actual conditions in the field and the professional judgement of engineers retained by WM.

WM's September 20, 2018 response to the Petition includes drawings from Golder Associates, WM's engineering consultant, depicting gas management infrastructure installed in and adjacent to cells 10 and 11 from 2009 to 2018. The Golder drawings show that horizontal collectors routinely were installed in and adjacent to cell 10 during 2009, 2011, 2012, 2013, 2014, 2015, 2017, and 2018, and in and adjacent to cell 11 during 2013, 2014, 2015, 2017, and 2018. Also, the construction certification reports for cell 11 reflect routine installation of horizontal collectors. In fact, the cell 11 construction certification reports (dated November 2013, October 2014, and October 2015) indicate that the horizontal collectors were installed from an elevation of approximately 470 feet amsl at the north end of the cell southward to 488 feet, extended upward along the intermediate bench to approximately 540 feet amsl, and continued upward to approximately 620 feet amsl.

While cells 10 and 11 have been constructed as part of the Phase II expansion, the operational requirements for the entire site were updated in 2008, as part of the DEC's approval of the Phase III expansion. Consistent with the regulation in effect at that time (see, 6 NYCRR 360-2.9, stating, "The operation and maintenance manual for a landfill must contain a comprehensive description that reflects the day-to-day operations throughout the active life of the facility"), the Parkway Expansion Phase III application

documents provide that the newer operational requirements contained in the application were intended to apply site-wide, including, among other things, the placement of horizontal gas collectors in the Phase II landfill. (See, for example, the January 2006 O&M Manual §6.4, "Landfill Gas Collection," which addresses the placement of horizontal gas collectors, among other things.) Also, the January 2006 Parkway Expansion Phase III Engineering Report states that the Parkway Expansion Phase III permit modification application was intended to encompass not only the future Phase III landfill area, but also the existing Western Expansion (WEX) and Parkway Expansion Phase I landfills, and the Parkway Expansion Phase II landfill (including cells 10 and 11). As a result, WM was required to install the horizontal collectors in accordance with the later Phase III Drawing 26 rather than the superseded Phase II Drawing 29.

To describe what operational requirements pertained to the installation of horizontal collectors in cells 10 and 11, the Petition mistakenly references the High Acres Parkway Expansion Phase II permit drawings, specifically Note 3 on Drawing 29, which states that "[t]he vertical spacing of the gas extraction and collection system shall not exceed 75 feet" (Petition paragraph 52). As a result, the Petition incorrectly concludes that, at a minimum, two additional layers of horizontal gas collection trenches were required to have been installed in cell 11 but were not.

In any case, horizontal gas collectors generally had been installed in accordance with vertical spacing not exceeding 75 feet in those cells. More specifically, based on DEC's review of the Golder drawings, the following table (presenting vertical cross sections of two locations, one in cell 10 and the other in cell 11, using information from the Golder drawings) demonstrates that WM generally installed horizontal collectors within vertical spacing not exceeding 75 feet:

Cell	**Location**	***Top of Primary Leachate Collection System**	**Approximate Elevations of Horizontal Gas Collectors**	**†Top of Landfill**
10	N 1126500 E 822500	485 ft.	527 ft., 570 ft., 600 ft., and 640 ft.	644 ft.
11	N 1126500 E 823000	477 ft.	477 ft., 520 ft.	586 ft.

*Top of Primary Leachate Collection System elevations (in feet amsl) are from the cell 10 and 11 construction certification reports dated January 2008 and November 2013 respectively and are approximate.
†Top of Landfill elevations (in feet amsl) are from the Interim Grading Plan for Cells 10/11 dated January 29, 2018 and are approximate.