

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File

FROM: Lawrence E. Bean, Jackson District Supervisor
Waste Management and Radiological Protection Division

DATE: September 6, 2017

SUBJECT: Status Update, September 2017
Advanced Disposal Services, Arbor Hills Landfill Inc., WDS 475946

Site Background

- Since 1970, the Arbor Hills Landfill has been operating as a municipal, Type II solid waste landfill in Salem Township, Washtenaw County. It presently consists of East (closed) and West (operating) portions. The landfill property is 337-acres in size. The area of waste disposal is 242 acres.
- The landfill is under the general ownership and operation of Advance Disposal Services, Inc. (ADI). ADI also operates a yard waste composting area directly north of the landfill across Six Mile Road.
- ADI controls the landfill and waste acceptance at the site, and on February 2, 2017, took ownership of the landfill gas collection and control system (GCCS) from BFI Waste Systems of North America, LLC (BFI). BFI was responsible for the GCCS and for maintenance of the closed east part of the Arbor Hills Landfill prior to February 2, 2017.
- After collection, landfill gas is processed into energy through a turbine plant operated by Fortistar Methane Group (Fortistar), and/or sent to flares to burn off the gas. The plant and flares control emissions and eliminate the odor.
- The landfill currently operates under Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended MCL 324.11501 et seq. (NREPA), license # 9371, issued on March 13, 2014, which expires on March 13, 2019. The current construction permit # 4108 was issued on December 11, 2009, and provided for construction of the cells at the north end of the landfill.
- As required by the federal Clean Air Act, New Source Performance Standard, 40 Code of Federal Regulations (CFR) Part 60, Subpart WWW for Municipal Solid Waste Landfills, the Michigan Department of Environmental Quality (MDEQ), Air

Quality Division (AQD), issued a Title V Renewable Operating Permit (ROP) to Arbor Hills Landfill on January 24, 2011. The ROP contains three sections, one for each of the responsible companies indicated above. The substantive requirements of Subpart WWW pertain to landfill gas collection and control.

Odor Issue, Enforcement, Response Actions

- Prior to 2016 the gas collection and control system was not properly maintained and/or updated.
- The MDEQ began receiving odor complaints from residents living near the landfill in January 2016.
- Since January 2016, the MDEQ has received over 500 complaints.
- Since January 2017, the MDEQ has received over 100 complaints and conducted 19 on-site inspections/odor evaluations.
- The complainants primarily reside to the east in Northville Township, Wayne County. There are two high density subdivisions within ½ mile of the facility and additional subdivisions and an elementary school within 1 mile.
- Local residents developed a website, www.stoparborhills.com, and communicate through Facebook and blog posts. Northville Township publishes an online Newsletter with periodic articles on the situation. Some residents have filed a Class Action Lawsuit against the landfill.
- In 2016, staff of the MDEQ, AQD and Waste Management and Radiological Protection Division (WMRPD) conducted approximately 70 inspections/observations at the landfill and the surrounding area and documented off-site odors.
- The WMRPD cited Advanced Disposal and BFI in violation of Rule 433(1) of Part 115 for producing offsite nuisance landfill gas odors on February 2, 2016, March 15, 2016, and April 29, 2016. The WMRPD cited Advanced Disposal in violation of R433(1) of Part 115 for producing offsite nuisance odors on November 8, 2016.
- Inspectors of the AQD detected odors rising to the level of a Rule 901 violation on December 5, and December 10, 2016. Rule 901 is under Part 55, Air Pollution Control of the NREPA. A Violation Notice was issued December 14, 2016.

- In the early part of 2016, when landfill gas odors were most prevalent, the AQD collected ambient air samples where the highest intensity odors were detected. No levels of air contaminants were found that raise any public health concerns.
- To assist with communication, AQD staff developed a website where information related to this case, including the above-mentioned monitoring results are posted: www.michigan.gov/deqarborhills
- Since the beginning of 2016, the AQD has been coordinating with the United States Environmental Protection Agency (EPA) on investigations and enforcement. The EPA mobile monitoring unit conducted air monitoring in February 2016. The data showed that hydrogen sulfide (a component of landfill gas) levels were high enough to be odorous, but did not pose a public health concern in residential areas. This data is also posted to the MDEQ Arbor Hills website.
- On September 29, 2016, the EPA issued Clean Air Act violations to all three companies operating at the landfill for failures in the gas collection and control system, citing the NSPS, Subpart WWW. EPA's initial enforcement discussions occurred on November 14, 2016. EPA requested the companies work together and submit joint short-term corrective actions by November 23, 2016, and joint long-term actions by December 23, 2016. These were received and monthly and quarter progress reports continue to be received.
- ADI and BFI took many corrective actions and improvements in 2016, including placement of a temporary geo-membrane cap on a section of the landfill, construction and replacement of over 90 landfill gas wells and 42 well pumps, placement of additional daily and intermediate cover in several identified areas, conducting daily odor patrols and air quality monitoring, and ceased accepting potentially odorous waste streams. These efforts led to a significant reduction in odor complaints.
- Staff of the AQD and WMRPD continue to respond to complaints and have been conducting regular on-site inspections and odor observations. Contract consultants, and facility personnel are conducting regular/daily inspections and odor observations in response to complaints. In addition, staff from Wayne County Solid Waste Program conducted weekly odor observations from February to October 2016.
- In November 2016, ADI hired RK & Associates (RK) to conduct comprehensive, daily odor surveys around the landfill and throughout the surrounding community. As part of this project RK developed an Odor Control Plan, evaluated the source of odors at the landfill and conducted landfill surface monitoring several times.

- This odor survey effort continues into 2017 and assists with characterizing odors, identifying sources, and recommends corrective actions and controls as well as verifying odor complaints.
- The intensity of odors has decreased as work progresses to improve the gas collection and control system at the landfill.

Advanced Disposal Construction Update

The following work is in progress to upgrade the Gas Collection and Control System:

- June 2017 to September 2017 Phase 1: As of mid-July, twenty wells have been re-drilled or newly installed and upgrades to approximately 5,000 feet of lateral and header piping had been completed to improve gas collection efficiency. A new 24-inch gas header pipe is being installed along the landfill's north side, extending from the eastern limit of Cell 4C, heading west to the utility flare where it will be temporarily tied into the 18-inch header that extends along the west to the south and ultimately to the gas plant.
- September 2017 to January 2018, Phase 2: Work will continue to upgrade the gas collection piping system. This will increase the gas system efficiency for transmitting the gas from the north and west parts of the landfill to the gas plant and flares. The 24-inch header will be constructed to extend the full length of the west side and partially along the south side of the landfill. This header will be temporarily capped on the south side of the landfill and north of the railway, until it can be connected to a 36-inch header. The 36-inch header will be constructed under the CSX Transportation-owned railway in the next phase, pending CSX approval. Advanced Disposal is coordinating with CSX to acquire the necessary approval. This work needs to be approved and monitored by CSX to ensure the structural integrity of the rail road is maintained.
- August 2017 – November 2017: South Slope Final Cover. The facility will construct 20 acres of final cover on the southern portion of the landfill. This will help to contain and control gas on the south side of the landfill.
- October 2017 – November 2017: North Slope Synthetic Cap. Approximately 7 acres of additional synthetic temporary cap will be installed on the north slope to help contain and control gas in that area.
- First Quarter 2018: Advanced Disposal plans to install a 5,000 standard cubic feet per minute (scfm) landfill gas flare that will be part of the existing gas collection and

control system. The 5,000 scfm flare will be installed to better handle the gas control and odor destruction when the turbine gas plant is down.

Additional Information

The following additional information is relevant to residents near the landfill:

- In mid-June 2017, Arbor Hills submitted a construction permit application to the MDEQ. This permit application is for a proposed minor permit modification to the west portion of Cell 6. The modification includes changing the west portion of Cell 6 to flow into Cell 4, with the changed area to be referred to as Cell 4E. The proposed modification will minimize waste removed from Arbor Hills East to approximately 40,000 cubic yards (cy) from 500,000 cy, a 92 percent reduction. The modification will reduce the potential for offsite odors during the construction of that area. This permit is currently under review by the MDEQ.
- An approximately 14-acre portion of Cell 6 will be excavated and deposited in the active portion of the landfill from October 2017 to November 2017. The excavation will take approximately 11 days, but Advanced Disposal has allotted additional time to actively excavate during favorable wind and weather conditions that would minimize the possibility of offsite odor migration. The Cell 6 excavation and north slope temporary synthetic cap will be constructed simultaneously.
- Arbor Hills operates an air filtration and odor neutralizing system around the perimeter of the active area of the landfill. Manufactured by GOC Technologies, the system utilizes a reservoir containing QuickAir V on a trailer-mounted generator to create counter-odor vapor. The generator forces the QuickAir V material through a filtration system that is circulated through a piping system elevated at key areas of the landfill where odor control is desired. The vapor is designed to pull odor causing molecules out of the air.

Contact Information:

Advanced Disposal Services, Inc.

Kelly Rooney, District Manager
Advanced Disposal Services Inc.
248-504-2524, Kelly.rooney@advanceddisposal.com

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David Rettell, East Region Landfill Operation Manager
Advanced Disposal Services, Inc.
248-412-0692, Dave.Rettell@advanceddisposal.com

Robert D Walls, General Manager, Arbor Hills
Advanced Disposal Services, Inc.
248-412-0704, Bob.Walls@advanceddisposal.com

Anthony Testa, Environmental Engineering Compliance
Advanced Disposal Services, Inc.
734-718-4262, Anthony.Testa@advanceddisposal.com

Joe Kohn, Community Relations
Advanced Disposal Services, Inc.
313-702-9190, joe.kohn@advanceddisposal.com

Deb Muchmore, Public Relations
Kandler Reed Khoury & Muchmore
517-485-4044, muchmored@krkm.com

Brad Wurfel, Public Relations
Kandler Reed Khoury & Muchmore
517-599-6159, wurfelb@krkm.com

Fortistar Methane Group:

Suparna Chakladar, Vice President
5087 Junction Road
Lockport, New York 14094
951-833-4153, schakladar@fortistar.com

Anthony J. Falbo, Senior Vice President- Operations
Arbor Hills Energy, LLC
5087 Junction Road
Lockport, New York 14094

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EPA Contacts

Nathan Frank, Chief
U.S. EPA Region 5
Air Enforcement and Compliance Assurance Branch, IL/IN Section
77 West Jackson Boulevard
Chicago, Illinois 60604-3590
312-886-3850, frank.nathan@epa.gov

Kenneth Ruffatto, Environmental Engineer
U.S. EPA Region 5
Air Enforcement and Compliance Assurance, IL/IN Section
77 West Jackson Boulevard
Chicago, Illinois 60604-3590
312-886-7886, Ruffatto.Kenneth@epa.gov

Sara Loiacono, Environmental Scientist
U.S. EPA Region 5
Air Enforcement and Compliance Assurance, IL/IN Section
77 West Jackson Boulevard
Chicago, Illinois 60604-3590
312-353-9199, loiacono.sara@epa.gov

MDEQ Contacts

Diane Kavanaugh Vetort, Senior Environmental Quality Analyst, AQD
517-780-7864, kavanaughd@michigan.gov

Scott Miller, Jackson District Supervisor, AQD
517-780-7481, millers@michigan.gov

Lawrence Bean, Jackson District Supervisor, WMRPD
517-416-4375, beanl@michigan.gov

Alex Whitlow, Environmental Engineer, WMRPD
517-614-9712, whitlowa@michigan.gov