

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection**

N600437978

FACILITY: City of Midland Utilities Division		SRN / ID: N6004
LOCATION: 4311 E. Ashman St., MIDLAND		DISTRICT: Saginaw Bay
CITY: MIDLAND		COUNTY: MIDLAND
CONTACT: Scott O'Laughlin, Landfill Supt		ACTIVITY DATE: 11/29/2016
STAFF: Gina McCann	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: FCE of Landfill and Gas-to-Energy facility.		
RESOLVED COMPLAINTS:		

I (glm) conducted a scheduled inspection at the City of Midland Utilities Division. The purpose of the inspection was to determine compliance with ROP #MI-ROP-N6004-2014, air quality regulations and to discuss recent deviations documented in the first semi-annual report in 2016.

The Midland Utilities Division is located in Midland, Michigan, and owned and operated by the City of Midland. Midland Utilities Division is a Type II, municipal solid waste (MSW) landfill, with a bioreactor, active landfill gas collection and treatment system, and a landfill gas to energy facility. Landfill gas (LFG) generated at the site is treated and burned off-site, at the Waste Water Treatment Plant (WWTP) in two spark ignition reciprocating internal combustion engines (RICE) or, the gas is burned in an 2,000 scfm open flare on-site.

The landfill has an on-site gas treatment system which filters, dewater, compresses, and cools the LFG prior to sending it via pipeline to two reciprocating internal combustion engines (RICE) located at the City of Midland wastewater treatment plant (WWTP). The landfill, LFG treatment system, and the RICE are part of the same stationary source. Any LFG not conditioned in the gas to energy system is burned in the open flare at Midland Utilities Division landfill. The RICEs use the conditioned gas as fuel for the generation of electricity for the power grid.

In addition to MSW, the landfill accepts inert wastes such as construction and demolition debris, low level contaminated soils, and asbestos containing waste. The solid waste is transported to the facility to an area (cell) where it is deposited on the working surface. Solid waste is handled by a variety of vehicles that potentially generate fugitive dust emissions. The deposited waste is covered daily with soil or other MDEQ approved alternate cover. When a cell reaches its design capacity, a liner is installed covering the waste.

Mr. Scott O'Laughlin, Landfill Superintendent, accompanied me during the inspection of the landfill portion. Mr. Peter Frazee, WWTP Superintendent and Mr. Steve Smith, Maintenance Supervisor, accompanied me during the gas to energy facility portion of the inspection. We reviewed the permit conditions in the ROP, monitoring devices, permit required records, GCCS components, the flare and gas treatment system, waste oil burner, and gas to energy facility.

MACT AAAA: Non-Compliant

The City sends timely and appropriate reports that satisfy the MACT requirements. The City had a total of 59 SSM events in 2016, 28 events were reported in the first semi-annual report and 31 were reported in the second semi-annual report. The SSM events were related to shutting down of the collection system to install or repair components, maintenance on the chiller compressor, and modification of flare temperature sensor, and gas to energy engine maintenance or troubleshooting. There are no other bypass lines and gas was not diverted at any time.

MACT AAAA requires the facility to maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During review of NSPS semi-annual and ROP deviation reports for 2015-2016, several wells were considered compromised in some manner. E.G. MW-20 had a cracked wellhead that went undiscovered for nearly four months; MLGW-19 and 19a had been compromised below subsurface in the general area the smoldering event occurred.

MAERS-Compliant

I reviewed 2015 MAERS submittal for emissions reported for landfill particulate, VOCs, and NMOC. The basis for SO₂ emissions factors will be reviewed for the 2016 submittal. During the inspection Mr. O'Laughlin measured SO₂ in the gas stream at approximately 600 ppm. The site currently used the MAERS emission factor. AP-42 recommends using site-specific information on the total reduced sulfur content of the LFG if available.

EU -LANDFILL: Compliant

No odors or visible emissions were observed as I approached the landfill. I entered through the main entrance and drove to the office building. The facility has installed an active gas collection system, flare and gas treatment system. The treated landfill gas is sent via pipeline to the FGICENGINES located at the City's WWTP. The staff from the WWTP tunes the LFG collection system. Surface methane readings for the first and second quarters of 2016 recorded no exceedances. To my knowledge, there has never been a reported exceedance. The landfill maintains the current amount of solid waste in place and the year-by-year waste acceptance rate. MAERS 2015 reported waste received was 167, 408 ton. During the inspection, Mr. O'Laughlin provided compacted waste in place records through October 2016 and annual waste accepted records for 2015. Annual accepted was 580,000 yd³ and compacted in place was 193,370 yd³.

EUBIOREACTOR: Compliant

Midland Utilities Division was granted approval to operate a bioreactor at the site on April 19, 2013. Non-dewatered wastewater treatment digested sludge will be added to cell 16 and a portion of cell 15 for the purpose of accelerating the decomposition process and increasing methane gas production within the cells. EU-BIOREACTOR is subject to the bioreactor regulations within the National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills, Subpart AAAA.

Specifically, the facility is required to comply with 63.1947(c) since the bioreactor will be located at an existing source and liquid addition did not occur until after January 17, 2006. The operation of the bioreactor must also comply with 63.1960 through 63.1985 of 40 CFR Part 63, Subpart AAAA. A gas collection and control system must be expanded into the bioreactor cells prior to the addition of liquid waste per 63.1955(d).

The facility calculates the moisture content to remain below 40% moisture. According to the 2014 ROP Annual Report Certification dated March 13, 2015, the facility began bioreactor operations on August 5, 2014. The gas wells located within the bioreactor were included in the annual NSPS WWW and ROP reports.

EU-ACTIVECOLL: Non-Compliant

As part of the full compliance evaluation, all reports submitted to the Department were reviewed. The following wells had deviation reports sent in 2016 Annual and Semi-Annual NSPS Reports. According to special condition VI.3.a, if monitoring demonstrates that the operational requirements in §60.753(b),(c),or (d) are not met, corrective action shall be taken as specified in §60.755(a)(3) through (5). If corrective actions are taken as specified in Condition §60.755, the monitored exceedance is not a violation of the operational requirements in this sections. There were multiple occasions when the corrective action specified in §60.755(a)(3) through (5) were not taken, therefore considered a violation. The following table describes the permit condition that was violated and which part of the process it corresponds to.

Process Description	Rule/Permit Condition Violated	Comments
<p>EU-ACTIVECOLL MLVDW-05, MLVDW-06 MLVDW-07, MLVDW-10, MLVDW-11</p>	<p>60.753(b) 60.755(a)(3) MI-ROP-N6004-2014,EU- ACTIVECOLL,VI.1</p>	<p>1/04/16-3/14/16 Positive pressure for 70 days. Not returned to compliance within 15 days and the collection system was not expanded within 120 days. No alternative timeline was requested.</p>
<p>EU-ACTIVECOLL MLVDW-11</p>	<p>60.753(b) 60.755(a)(3) MI-ROP-N6004-2014,EU- ACTIVECOLL,VI.1</p>	<p>1/12/16-3/14/16 Positive pressure for 62 days. Not returned to compliance within 15 days and the</p>

		collection system was not expanded within 120 days. No alternative timeline was requested.
EU-ACTIVECOLL MLVW-11	60.753(b) 60.755(a)(3) MI-ROP-N6004-2014,EU-ACTIVECOLL,VI.1	1/4/16-2/25/16 Positive pressure for 52 days. Not returned to compliance within 15 days and the collection system was not expanded within 120 days. No alternative timeline was requested.
EU-ACTIVECOLL MLVW-14	60.753(b) 60.755(a)(3) and (5) MI-ROP-N6004-2014,EU-ACTIVECOLL,VI.1. and VI.1.a. MI-ROP-N6004-2014,EU-ACTIVECOLL,VI.3 and VI.3.a	1/4/16-3/10/16 Positive pressure for 66 days. Not returned to compliance within 15 days and the collection system was not expanded within 120 days. No alternative timeline was requested. 1/4/2016-2/22/2016 Oxygen exceedance for 49 days. Not returned to compliance within 15 days and the collection system was not expanded within 120 days. No alternative timeline was requested.
EU-ACTIVECOLL	60.756(3) MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.3.	Several instances when landfill gas (LFG) temperatures were in uncommon range for landfill gas temperatures, E.g.1-4-2016, MLGW-19 temp=18°F.

		Monitoring ambient air temp, not LFG
EU-ACTIVECOLL MLGW-20A and MLGW-13	60.753(b)&(c) 60.755(a)(3)&(5) MI-ROP-N6004-2014,EU-ACTIVECOLL,VI.3 and VI.3.a MI-ROP-N6004-2014,EU-ACTIVECOLL,VI.1. and VI.1.a.	Operate each interior wellhead in the GCCS with negative pressure and O2<5%. Did not return to compliance within 15 days and the collection system was not expanded within 120 days. No alternative timeline was requested.
EU-ACTIVECOLL MLGW-19A	60.759(b)(1) ROP-MI-N6004-2014, E-ACTIVECOLL, IV.6.a.	Well 19, 10 and 12 collapsed below grade. Subsurface fire in the area of MLGW-19/19A. LFG extraction shall be constructed to withstand installation, static, and settlement forces and withstand planned overburden or traffic loads.
EU-ACTIVECOLL MLVW-14 MLGW-19A MLGW-20A and MLGW-13 MLVW-11 MLVDW-05, MLVDW-06 MLVDW-07, MLVDW-10, MLVDW-11	63.6(e) 60.11(d) R910 Maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.	1/4/2016 to 5/9/2016 MLGW-20A positive pressure and oxygen >5%, due to wellhead crack. Well 19, 10 and 12 collapsed below grade. Subsurface fire.

MLGW-19A was out of compliance for 39 days due to a subsurface fire. Attached is an email of how the facility responded. During the inspection I did not observe gas wells. Instead, I plan to accompany the site technician while he tunes wells.

The facility submitted alternative timelines in October for events that had taken place in early 2016; some 9 months after the event had taken place. The Division cannot approve alternative timelines that are submitted so tardy.

The City was cited the following violations in 2015 and 2016.

2015	2016
MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.	MI-ROP-N6004-2014,EU-ACTIVECOLL,VI.1
MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.a	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.a
60.753(b)&(c)	60.753(b)&(c)
40 CFR 60.755(a)(3)&(5)	60.755(a)(3)&5
MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.3.	MI-ROP-N6004-2014, EU-ACTIVECOLL,VI.3 & VI.3.a
63.1955(a)	60.756(3) 60.759(b)(1)
	ROP-MI-N6004-2014, EU-ACTIVECOLL, IV.6.a.
	63.6(e)
	60.11(d)
	R910

EUTREATMENTSYS: Compliant

A Preventative Maintenance Plan (PMP) for the treatment system is required. The PMP was submitted previously with PTI application 45-10A. The facility provided maintenance documentation. See attached documentation from December 1, 2016.

EUFURNACE: Compliant

The City collects used oil from city operated vehicles and other mechanical activities as well as during community household hazardous waste collections. As part of the audit two used oil samples were sent to Merit Laboratories, Inc. for analysis of constituents in Table 1, Appendix 3, of MI-ROP-N6004-2014. Analysis reported all constituents under the allowable level. See attached records.

I reviewed the visual inspections reports for all of 2016 through current, amount of fuels combusted in December 2015 through current. Values were within the allowable levels. The facility records the amount, date, generator name, and generator location of any used oil collected from off-site locations and composites a sample from the 1,000 gallon tank for monthly analysis. The facility does collect household used oil at the curb and tracks it by date, source and gallons received.

EUOPENFLARE: Compliant

The flare was not operating during the site visit. The most recent stack test on the flare was performed on February 21, 2011. The flow rate to the flare during the testing was 526 scfm. The methane concentration was 56.5 %. Net heating value provided as 513 BTU/SCf. Records from September 23 and December 3, 2014 and June 16, 2015. Actual exit velocities of flare for the records viewed were under the Vmax of 22.6 meters/seconds. Gas flow rate to the control device is recorded at least every 15 minutes.

EU-ASBESTOS: Non-Compliant

Records request included copies of the last 10 friable or non-friable asbestos loads received. Specifically copies of the transport manifest with the volume, the company and the source information. The request also asked to include the coordinating map or diagram of the disposal area with associated location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material. See attached.

The facility produced records that satisfy the monitoring and recordkeeping requirements under special conditions VI.1.

In January 2016, the facility excavated a large area in Cell 15 due to a smoldering event. When the facility was excavating, MLGW-19 was hit by the excavator. According to well logs, MLGW-19 was located at coordinates 10,669.48E, 13,788.84N. Asbestos records from 2013 logged several asbestos loads (IDs 542-544 and 550-553) were placed in the excavated area. According to special condition VII.6, the facility is supposed to notify the appropriate AQD District Office in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material. I searched the asbestos notification data base back to mid-2014 for any notification sent from CML. No notifications were found.

EU-LANDFILL OFFICE GENERATOR: Compliant

The generator is less than 10 MMBTU/hr, (65 hp, 3 liter displacement), diesel fired emergency generator installed in January 2008 for use to provide power to the landfill office during total power failure. CML provided certificates of analysis for November 2016 diesel delivery. The sulfur content was below the permit limit of 15 ppm.

Special Condition VI. 1., requires the facility to maintain records of the hours of operation of the engine that is recorded through the non-resettable hour meter and specify how many hours were spent for emergency operation, what the emergency was, hours spent for non-emergency, and for demand response operation. The generator cannot feed the grid, is used strictly for emergency backup and is never used for supplemental or demand power. The generator operated less than 20 hours in 2016. Attached are the maintenance and recordkeeping logs.

EU-COMPRESSOR GENERATOR: Compliant

The compressor generator is less than 10 MMBTU/hr., (755 hp, 400kW, 14.9 liter displacement), diesel fired emergency generator was installed in May 2010 to provide power to the landfill compressor during total power failure. CML provided certificates of analysis for November 2016 diesel delivery. The sulfur content was below the permit limit of 15 ppm

Special Condition VI. 1., requires the facility to maintain records of the hours of operation of the engine that is recorded through the non-resettable hour meter and specify how many hours were spent for emergency operation, what the emergency was, hours spent for non-emergency, and for demand response operation. The generator ran approximately 26 hours in 2016. It is run manually every month for 15 minutes for observation accounting for 15 of the total 16 hours. Each year load bank testing of one hour is also performed. Individual

power outage where the generator ran was not recorded. Attached are the maintenance and recordkeeping logs.

EU-WWTPGENERATOR: Compliant

The compressor generator is less than 10 MMBTU/hr., (1522 hp, 1,135kW, 34.5 liter displacement), diesel fired emergency generator was installed in November 2002 to provide power to the WWTP during total power failure. CML provided certificates of analysis for November 2016 diesel delivery. The sulfur content was below the permit limit of 15 ppm.

The WWTP generator was new in 2001. The generator is strictly emergency backup unit and is never used for supplemental or demand power as it is not able to feed the grid. The unit has 168 total hours on it since new. The unit is run for 15-30 minutes monthly manually for observation.

The City maintains all maintenance logs on a program called City Works. Attached are copies of maintenance logs.

The facility is required to maintain records of the hours of operation of the engine that is recorded through the non-resettable hour meter and specify how many hours were spent for emergency operation, what the emergency was, hours spent for non-emergency, and for demand response operation. Attached are the maintenance and recordkeeping logs.

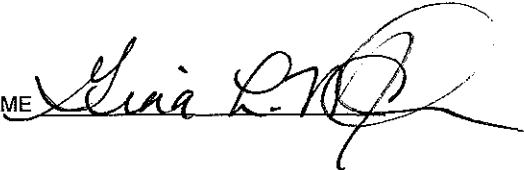
FGICENGINES: Compliant

At the time of the inspection Engine 1 (GW3520-9WZ00886) had 25,149 hours on it and Engine 2 (GW3520-9WZ00887) had 22,902 hours on it. Mr. Tom Have was operating the control room. Engine #1 was operating. Engine # 2 was not. The total fuel flow into the plant was 445.0 scfm at 59.77% methane. The air/fuel ratio was 9.8%.

The facility records the hours of operation for FGICENGINES and the digester gas flow. Maintenance logs were appropriately maintained and available during the inspection. Monthly records of total digester gas, landfill gas usage, and hours of operation were also available. Hours of operation for all of 2016, total digester gas and landfill gas usage were reviewed for July 2015, January 2016, October 2016 and November 2016. A copy of the email response with the data is attached.

The engines are subject to 40 CFR Part 60 Subpart JJJJ, which requires verification of NOx, VOC and CO emission rates from FCICENGINES every 8760 hours of operation or three years, whichever occurs first. The engines were last tested on October 14, 2015 and met the limits in the standard.

Compliance issues noted during the inspection were a repeat from the previous inspection. A violation notice was sent December 6, 2016.

NAME  DATE 1/10/17 SUPERVISOR C. Have

