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

N600446526

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:** 10/03/2018
STAFF: Gina McCann	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Inspection of MI-ROP-N6004-2014		
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 and air quality regulations. At the time of the inspection the facility was in compliance with the ROP and applicable air quality regulations.

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, dewaters, 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. 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: Compliant

The City sends timely and appropriate reports that satisfy the MACT requirements. The City had a total of 21 SSM events for the second semi-annual reporting period, July 1, 2017 through December 31, 2017. The SSM events were related to shutting down of the collection system to install or repair components, maintenance of the compressor station, power outages, methane sensor (false error) and gas to energy engine maintenance or troubleshooting. There are no other bypass lines and gas was not diverted at any time.

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. Landfill staff tune the LFG collection system. The treated landfill gas is sent via pipeline to the FGICENGINES located at the City's WWTP.

On May 8th, 2018, staff from the Environmental Protection Agency (EPA), Region V, performed a site visit. The focus of their visit was to perform a surface emission scan with the City's contractor, CTI and Associates. During the monitoring event (4) four exceedances were identified. The location identified as EPA-2 had three consecutive monitoring events when methane concentrations exceeded the 500 ppm. The solution was to install a collection device. The manhole will be connected to the gas collection system using a remote wellhead. The new collection device will include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port in accordance with 40 CFR 60.759(b)(3). Expansion was completed by September 4, 2018, within the 120-day timeframe.

During the second quarter surface emissions monitoring on May 15, 2018, methane exceedances were greater than 500 ppm above background near leachate manholes that are part of a leachate collection toe drain around closed cells 9-13. The two leachate manholes failed subsequent 10-day re-monitoring events and must be repaired within 120 days. The toe drain had active gas collection connected already and the City proposed an alternate solution to installing additional collection, which is allowed in the NSPS WWW. During exploratory investigations, the City determined settling of manholes in the loop around cells 9-13, were the root cause for the restricted flow of gas to the collection system. The settling of manholes was corrected by September 11, 2018, within the 120 calendar days of the initial exceedance. Subsequent, surface emissions scan of this area were below the 500 ppm limit.

The landfill maintains the current amount of solid waste in place and the year-by-year waste acceptance rate. MAERS 2017 reported waste received was 147,811 tons. Annual accepted waste for the first three quarter of 2018 was 314,777 yd^3 and compacted in place was 3,153,426 yd^3, through July 10, 2018.

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 facility, bioreactor operations began on August 5, 2014. The gas wells located within the bioreactor are included in the NSPS WWW and ROP reports.

EU-ACTIVECOLL: Compliant

As part of the full compliance evaluation, all reports submitted to the Department were reviewed. MLC-16B02 and MLC-16C02 were not monitored during alternating monthly events. A violation notice was sent on May 11, 2018 and the response received June 4, 2018. The City has changed its data evaluation procedures, which should resolve missing monitoring of wells. The violation notice was resolved.

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 retains maintenance records on-site.

EUFURNACE: Compliant

The City collects used oil from city operated vehicles and other mechanical activities as well as during community household hazardous waste collections. The City was issued a new PTI (#179-17) for the used oil furnace. The previous furnace became in operable and needed replacing. I reviewed the most recent lab data from samples sent in November 2017. The results were below limits for all constituents listed in Appendix 3 of the ROP. See attached records.

EUOPENFLARE: Compliant

The flare was operating during the site visit and has been operating most days. 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. While onsite, I review records from July 10, 2018 through August 24, 2018. The flow to the flare ranged from 137 scfm, on August 24th to 408 scfm on August 4, 2018. Gas flow rate to the control device is recorded at least every 15 minutes. At the time of the inspection, flow to the flare was 209 scfm at a temperature of 1224 F.

EU-ASBESTOS: Compliant

While on site I reviewed the last 20 receipts for friable and non-friable asbestos loads received. Specifically copies of the transport manifest with the volume, the company and the source information. The facility maintains a site map with x, y, z coordinates that correlate to the manifest number for the waste load. The facility produced records that satisfy the monitoring and recordkeeping requirements under special conditions VI.1.

EU-LANDFILLOFFICEGENERATOR: 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.

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 for less than 25 hours between November 10, 2017 and August 24, 2018.

EU-COMPRESSORGENERATOR: 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.

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 14 hours between November 10, 2017 and August 24, 2018. Each year load bank testing of one hour is also performed. Individual power outage where the generator ran was not recorded.

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.

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 194 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 operating 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. The generator ran approximately 13 hours for 2018.

FGICENGINES: Compliant

At the time of the inspection Engine 1 (GW3520-9WZ00886) had 33,512 hours on it and Engine 2 (GW3520-9WZ00887) had 29,553 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 474.0 scfm. The air/fuel ratio was 8.7.

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 the last 12 months, total digester gas and landfill gas usage were reviewed. 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. Engine #1 was tested on June 27, 2017 and Engine #2 was tested on January 3, 2018 and met the limits in the standard. Generator 1 had an in-frame completed at 32, 590 hours and is due for NSPS JJJJ testing at 37,866 hours. Generator 2 is due for testing at 35, 092 hours.

At the time of the inspection the facility was in compliance with the ROP #MI-ROP-N6004 -2014 and air quality regulations.

NAME Nina R. McCann DATE 10/4/18 SUPERVISOR C. Have