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

N600430238

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:** 06/16/2015
STAFF: Gina McCann	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Full Compliance Evaluation, including evaluation of ROP-N6004-2014.		
RESOLVED COMPLAINTS:		

I (glm) conducted a scheduled inspection at the City of Midland Utilities Division. Mr. Chris Hare, AQD Saginaw Bay District Supervisor was also present. The purpose of the inspection was to determine compliance with ROP #MI-ROP-N6004-2014, air quality regulations and to discuss Potential to Emit (PTE) for Hazardous Air Pollutants (HAPs). In 2011, the AQD obtained manufacturer emission factors for formaldehyde that were greater than AP-42 factors which were historically used for permit development. The City of Midland was asked to re-evaluate its PTE for VOC and formaldehyde values for each of the engines, in an email sent June 9, 2015 and asked to submit the results by July 18th, 2015.

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, and Ms. Beth Benoit, Senior Project Manager for the City's consultant CTI, accompanied us during the inspection. Mr. Kevin Babinski, WWTP Superintendent and Mr. Steve Smith, Maintenance Supervisor, accompanied us 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: Compliant

The City sends timely and appropriate reports that satisfy the MACT requirements. The City had a total of 33 SSM events in 2014, 13 events were reported in the first semi-annual report and 20 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. All actions taken during the SSM events were consistent with the SSM Plan.

MAERS-Compliant

No odors or visible emissions were observed as we approached the landfill. We 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. The City continues to adjust flow and operating conditions to improve gas collection efficiency. Surface methane readings for the first and fourth quarters of 2014 are attached. Surface scans for these quarters did not record an exceedance of 500 ppm or above. The landfill maintains the current amount of solid waste in place and the year-by-year waste acceptance rate. MAERS 2014 reported waste received was 151,949 ton.

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).

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 closer. The following wells had deviation reports sent in 2014 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 well it corresponds to.

Process Description	Rule/Permit Condition Violated	Comments
Gas Collection Control System, gas well MLGW-19	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.; 40 CFR 60.753(b) and 63.1955(a)	Wellhead did not operate with negative pressure. Exceedance of pressure operating parameter was from 10/20/2014-11/18/2014.
		Corrective action was not initiated within 5 calendar

Gas Collection Control System, gas well MLGW-19	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.a; 40 CFR 60.755(a)(3) and 40 CFR 63.1955(a)	days of exceedance (or 10/25/14) and pressure was not returned to compliance within 15 days of the first monitored exceedance (or 11/4/2014) and the collection system was not expanded within 120 days (or 2/17/2015)
Gas Collection Control System, gas well MLGW-22	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.3.; 40 CFR 60.753(c) and 63.1955(a)	Oxygen percent in wellhead exceeded 5 percent. Exceedance of oxygen operating parameter was from 9/22/2014-10/20/2014
Gas Collection Control System, gas well MLGW-22	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.3.a; 40 CFR 60.755(a)(5) and 40 CFR 63.1955(a)	Corrective action was not initiated within 5 calendar days of exceedance (or 9/27/14) and oxygen was not returned to compliance within 15 days of the first monitored exceedance (or 10/7/2014) and the collection system was not expanded within 120 days (or 1/20/2015)
Gas Collection Control System, gas well MLGW-22	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.; 40 CFR 60.753(b) and 63.1955(a)	Wellhead did not operate with negative pressure. Exceedance of pressure operating parameter was from 11/26/2014-12/22/2014.
Gas Collection Control System, gas well MLGW-22	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.a; 40 CFR 60.755(a)(3) and 40 CFR 63.1955(a)	Rechecks were performed with equipment that was not calibrated.
Gas Collection Control System, MLC16A06	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.; 40 CFR 60.753(b) and 63.1955(a)	Wellhead did not operate with negative pressure. Exceedance of pressure operating parameter was from 11/26/2014-12/22/2014.
Gas Collection Control System, MLC16A06	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.a; 40 CFR 60.755(a)(3) and 40 CFR 63.1955(a)	Rechecks were performed with equipment that was not calibrated.

MLGW-83	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.; 40 CFR 60.753(b) and 63.1955(a)	Wellhead did not operate with negative pressure. Exceedance of pressure operating parameter was from 10/20/2014-11/26/2014.
MLGW-83	MI-ROP-N6004-2014, EU-ACTIVECOLL, VI.1.a; 40 CFR 60.755(a)(3) and 40 CFR 63.1955(a)	Corrective action was not initiated within 5 calendar days of exceedance (or 10/25/14) and pressure was not returned to compliance within 15 days of the first monitored exceedance (or 11/4/2014) and the collection system was not expanded within 120 days (or 2/17/2015)

During the inspection we observed gas wells MLGW-3A, MLGW-4, MLGW-19A, MLGW-83 and measured methane concentration, oxygen percent, temperature, and collection system pressure. All had temperatures of 50F - 90F, oxygen percent between 0.1%-0.8% and all had negative pressure.

During the inspection the facility submitted multiple alternative timeline requests. Staff are currently reviewing the requests and preparing a response.

EUTREATMENTSYS: Compliant

As part of the records request I asked for a copy of the Preventative Maintenance Plan (PMP) for the treatment system. Subsequently, the PMP was found. The PMP was submitted previously with PTI application 45-10A and had been filed as such. The facility was able to provide maintenance documentation. See attached documentation for May 2015.

EUFURNACE: Pending

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 Fibertec Environmental for analysis of constituents in Table 1, Appendix 3, of Mi-ROP-N6004-2014. Analysis reported total halogens at 5700 mg/Kg for sample identification 68463-001A and 3600 mg/Kg for sample identification 68463-002A. See attached records. An allowable level of total halogens is 4,000 ppmw (maximum). A second sample was obtained on July 10, 2015 at 13:00 and sent for analysis on July 16, 2015. Analysis is pending.

I reviewed the visual inspections reports for all of 2014 through current, amount of fuels combusted in November 2013, December 2014 and January 2015 and sulfur content, flash point, and higher heating value (Btu/lb) of used oil combusted for February and November 2013, January, October, and November 2014. Values were within the allowable levels. The facility does record the amount, date, generator name, and generator location of any used oil collected from off-site locations and coposites a sample from the 1,000 gallon tank for monthly analysis.

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: 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.

I searched the asbestos notification data base back to mid-2012 for any notification sent from CML. No notifications were found. While it appears that newly installed wells would miss contact with asbestos the conservative approach by similar facilities has been to send notification to account for possible shifts in waste.

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. CML provided certificates of analysis for February and May 2015 diesel deliveries. The sulfur content was below the permit limit of 15 ppm. And the centane index was above 40.

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 has 214.5 hours total run time since new in early 2008. The unit automatically runs each Monday for 15 minutes, and is also run for 15 minutes monthly manually for observation. This amounts to 16 hours per year. Each year load bank testing of one hour is also performed, adding another 7 hours of run time. Individual power outage where the generator ran was not recorded. The emergency outages average less than 12 hours per calendar year. The facility recognized that they were not recording the emergency outages run time and was able to correct during the inspection. Attached are the implemented recordkeeping logs.

While this is a violation of the ROP no formal violation notice will be sent, instead this inspection report will serve as a means of documenting the compliance issues and the recordkeeping will be checked for the necessary updates during the next inspection.

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. CML provided certificates of analysis for February and May 2015 diesel deliveries. The sulfur content was below the permit limit of 15 ppm. And the centane index was above 40.

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 has 60 hours total run time since new in the summer of 2010. 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. The emergency outages average less than 9 hours per calendar year. The facility recognized that they were not recording the emergency outages run time and was able to correct during the inspection. Attached are the implemented recordkeeping logs.

While this is a violation of the ROP no formal violation notice will be sent, instead this inspection report will serve as a means of documenting the compliance issues and the recordkeeping will be checked for the necessary updates during the next inspection.

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 February and May 2015 diesel deliveries. The sulfur content was below the permit limit of 15 ppm. And the centane index was above 40.

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 146 total run time since new. The unit is run for 15-30 minutes monthly manually for observation. This amounts to 4.5 hours per year, or 63 hours of the total 146 hours run time. Each year load bank testing is also performed. Initial load bank testing when new was 8 hours. Load bank testing for the past 14 years accounts for an estimated 27 additional hours of run time since new. There were zero power outage emergencies using the generator in 2014 through current. Historical power outages where the generator ran were not recorded, nor were detailed records of hours run for load bank testing. The last power outage was roughly five years ago.

The City maintains all maintenance logs on a program called City Works. Attached are copies of compressor 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. The facility recognized that they were not recording the emergency outages run time and was able to correct during the inspection. Attached are the implemented recordkeeping logs.

While this is a violation of the ROP no formal violation notice will be sent, instead this inspection report will serve as a means of documenting the compliance issues and the recordkeeping will be checked for the necessary updates during the next inspection.

FGICENGINES: Compliant

At the time of the inspection Engine 1 (GW3520-9WZ00886) had 18,629 hours on it and Engine 2 (GW3520-9WZ00887) had 16,824 hours and Mr. Tom Have was operating the control room. Engine #1 was operating. Engine # 2 was not. The total fuel flow into the plant was 420 scfm at 51.59% methane. The air/fuel ratio was 8.4%.

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. Records were requested and provided for June 16, 2015, June 2014, September 2014, January and May of 2015. A copy of June 16, 2015 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 December 4, 2103 and met the limits in the standard. The facility anticipated testing again later this year.

Potential to Emit/RICE MACT Applicability

Using the June 2013 CAT emission factor for formaldehyde, the facility submitted a

revised PTE for the two engines on July 15, 2015. The calculations show that the PTE for HAPs is above major source threshold, 10 ton per year, for a single HAP. The PTE for the two engines located at the facility is 18.6 tons per year. Based on this information the facility was asked to submit an initial notification within 120 days of determining that the site is subject to the MACT ZZZZ. Compliance with the RICE MACT is three years after an area source becomes a major source, 40 CFR Part 63.6595(b)(2). The ROP has a mistake of stating that the compliance date is upon start-up.

Fugitive Dust/Odor Control

The facility controls road dust with the application of brine applied by Liquid Calcium Chloride Sales of Kawkawlin, MI. The roads were brined in June, August and September of 2014. The facility also waters the roads daily as needed and has City street sweepers come out when appropriate.

The Department did not receive any odor complaints in 2014. The facility maintains these records and receives very little complaints. See attached.

Overall minor compliance issues were noted during the inspection. A violation notice will be sent for the not taking the appropriate corrective action as specified in §60.755(a)(3) through (5) for EU-ACTIVECOLL. The Department will follow up on recordkeeping for the two generators and compressor, the initial notification pending for the RICE MACT and the alternative timelines submitted during the inspection.

NAME Lisa L. Wilcox DATE 7/29/15 SUPERVISOR C. Hare