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

N334144274

FACILITY: DTE Gas Company - Kalkaska Compressor Station		**SRN / ID:** N3341
LOCATION: 1250 MichCon Lane, KALKASKA		**DISTRICT:** Cadillac
CITY: KALKASKA		**COUNTY:** KALKASKA
CONTACT: Karla Shawhan-Bonnee , Manager, Transmission Storage and Operations		**ACTIVITY DATE:** 04/17/2018
STAFF: Caryn Owens	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled Inspection and Records Review		
RESOLVED COMPLAINTS:		

On Tuesday, April 17, 2018, Caryn Owens and Tammie Puite of the Department of Environmental Quality (DEQ) – Air Quality Division (AQD) conducted a scheduled field inspection of DTE Gas Company (N3341) located at 250 MichCon Lane in Kalkaska Township, Kalkaska County, Michigan. More specifically, the site is located on the south side of MichCon Lane, approximately ¼ mile east of US-131. The purpose of this inspection was to determine the facility's compliance with Renewable Operating Permit (ROP) MI-ROP-N3341-2016a. This facility is considered a major source due to the potential to emit nitrogen oxides (NOx) exceeds 100 tons per year, and the potential to emit of any single hazardous air pollutant (HAP) (in this case formaldehyde) regulated by the federal Clean Air Act, Section 112, is more than 10 tons per year. DEQ was escorted by Mr. Darin Cummings of DTE Energy during the field inspection. The site is a major source for National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (40 CFR, Part 63, Subpart ZZZZ – RICE MACT), but there are no applicable Conditions associated with the RICE MACT. Additionally, the site is subject to NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR, Part 63, Subpart DDDDD – Boiler MACT).

Evaluation Summary
The activities covered during this full compliance evaluation (FCE) appear to be in compliance with ROP MI-ROP-N3341-2016a. Review of the records for the facility indicates the facility was in compliance with emission limits in accordance to the ROP. No further actions are necessary at this time. Specific permit conditions that were reviewed are discussed below.

Source Description
The compressor station pumps pipeline quality natural gas to other areas through the pipelines. The facility is not involved in the production of natural gas or oil, nor is it involved in the storage or processing of natural gas.

Three compressors are powered by three 2,700 horsepower reciprocating engines. The three engines are fueled with pipeline quality natural gas and use lean burn combustion systems that are intrinsically installed to each engine to control emissions. A natural gas engine and generator set are used as backup electrical power in the event power is lost from the primary grid to the site. The facility also contains a process heater for building heat, hot water heaters, and small storage tanks for hydrocarbon liquids, glycol, waste water, and lubricating oil. Additionally, the facility has a small use boiler used for service heating, which is rated 2.93 MMBTU per hour heat input and a fuel gas heater rated at 0.5 MMBTU per hour.

On-site Inspection:
During the field inspection it was overcast skies with wind speeds approximately 5 miles per hour out of the northwest, and approximately 30 degrees Fahrenheit. The facility was covered in snow, and consisted of: an office building and control room on the north-central portion of the Property; a compressor engine building that contained the three lean burn 2,700 horsepower engines and associated compressors; a tank battery area containing five above ground storage tanks ranging from 1,000-gallons to approximately 6,000 gallons containing either hydrocarbon liquids, fresh glycol, waste water, and lubricating oil, and an oil water separator tank. Three of the above ground storage tanks were horizontal. The remainder of the facility contained piping for transferring pipeline gas for sales. The southwestern portion of the site contains three condensers that cool the pipeline gas prior to sending the natural gas to consumers, and a blow-down stack for pipeline maintenace.

A main office building and service garages were located on the western portion of the site, but there was

no permitted equipment in this area. DEQ stopped at the main office building prior to the inspection to meet with Ms. Karla Shawhan-Bonnee, the Northern Transmission Operations Manager at DTE, however she wasn't available, so DEQ was escorted by Mr. Cummings, DTE Supervisor of Compression Operations. The area containing the permitted equipment was fenced in, and the gate was open during the field inspection.

DEQ observed no visible emissions from the lean burn engine stacks, or the cooling towers associated with the stacks. DEQ observed a heat shimmer off engine 3 (EUGMVH3) cooling tower. During the inspection, only EUGMVH3 was operating. The two remaining engines operate when EUGMVH3 needs to be shut down for service. Based on no heat shimmer from engines 1 and 2 (EUGMVH1 and EUGMVH2) cooling towers, it appears they were not operating the day of the inspection. No other visible emissions were observed during the field inspection.

At the time of the field inspection, compressor engine EUGMVH3 was the only engine operating. The engine was identified on the screens in the control room as engine 3, which was the southern-most engine in the building. The engine was operating at 304 revolutions per minute (RPMs), 34.3 pounds per square inch (psi) pressure, and 172 degrees Fahrenheit. The hour meter on the engine was at 125,591 hours. The engine data is continuously monitored on LCD screens, and the recorded in the control room.

The facility is claiming the following exemptions at the facility:

- **Approximately 9 natural gas forced air small furnaces that range between 50,000 BTU/hr to 165,000 BTU/hr meets exemption Rule 336.1282(2)(b)(i).**
- **Approximately 15 unit heaters, 2 water heaters, and a radiant heater that range between 2,500 BTU/hr to 110,000 BTU/hr, meets exemption Rule 336.1282(2)(b)(i).**
- **A backup generator in case of power failure 336.1285(2)(g)**
- **The above ground storage tanks in the tank battery area meet exemption Rules 336.1284(2)(e) and 336.1284(2)(i).**

Records Review:
FGGMVHS: Three Cooper 2,700 HP two-stroke lean burn natural gas-fired reciprocating engines using lean combustion systems that are intrinsically installed to each engine for emission control. Only the southern-most engine (EUGMVH3) was operating during the field inspection.

- **Emission Limits:**

The highest reported emissions from each engine are in the right hand column in the table below.

Pollutant	Limit	Time Period	Highest Reported Emissions 4/1/17 through 3/31/18 Or Test Results
1. NOx	52.12 tpy	12-month rolling time period as determined at the end of each calendar month	3.47 tpy – EUGMVH1 2.34 tpy – EUGMVH2 0.79 tpy – EUGMVH3
2. NOx	64.2 pph	Hourly	6.0 pph – EUGMVH1 7.7 pph – EUGMVH2 5.3 pph – EUGMVH3
3. CO	28.68 tpy	12-month rolling time period as determined at the end of each calendar month	19.28 tpy – EUGMVH1 12.55 tpy – EUGMVH2 4.20 tpy – EUGMVH3
4. CO	7.7 pph	Hourly	6.1 pph – EUGMVH1 5.0 pph – EUGMVH2 6.4 pph – EUGMVH3
5. VOC	26.1 tpy	12-month rolling time period as determined at the end of each calendar month	4.75 tpy – EUGMVH1 3.13 tpy – EUGMVH2 1.05 tpy – EUGMVH3
6. VOC	6.0 pph	Hourly	0.7 pph – EUGMVH1 0.4 pph – EUGMVH2 0.7 pph – EUGMVH3

- **Material Limits:**
  There are no material limits applicable to FGGMVHS.

- **Process/Operational Parameters:**
  According to DTE Energy, only sweet natural gas is burned at the facility. Additionally, the engines have not been modified since the previous inspection, and the lean burn combustion system appears to be operating properly.

- **Design/Equipment Parameters:**
  As previously stated, EUGMVH3 was the only engine operating during the inspection. DEQ observed that the hours are tracked, and EUGMVH3 was at 125,591 hours. DEQ could not observe the number of hours for the other two engines, since the engines were not in operation, the LCD screens were not on, but the hours operated are included on the facility MAERS report for the year 2017.

- **Testing:**
  Performance testing shall be completed at least once every five years to verify the emission rates of NOx, CO, and VOCs from each engine. The latest stack test was completed May 21 and 22, 2013. Based on the results of the most recent performance test, the facility was in compliance with the emission limits, and the AQD performance test protocols were followed. A performance test should be scheduled in the near future to stay in compliance with the ROP.

- **Monitoring/Recordkeeping:**
  The facility completes the required calculations for each engine, and records the amount of hours each engine operated on a daily basis. The NOx, CO, and VOC emissions are calculated on a monthly basis and are discussed above under emission limits. The monthly and 12-month rolling time period emissions records are attached.

- **Reporting:**
  During the reporting period the permittee reported all monitoring and associated recordkeeping requirements of the ROP were met and there were no deviations. The semi-annual and annual reports were submitted to the DEQ on a timely basis.

  A stack test protocol has not been submitted to the AQD, since the previous testing. However, AQD is expecting a stack test protocol for testing in the near future.

- **Stack/Vent Restrictions:**
  Based on visible observations during the field inspection, the stacks EUGMVH1 EUGMVH2, and EUGMVH3 appeared to be in compliance with permitted limits.

- **Other Requirements:**
  There are no "Other Requirements" applicable with FGGMVHS.

FGBOILERS: New and existing industrial boilers and process heaters fired by natural gas at a major source of HAPs and subject to 40 CFR Part 63, Subpart A and Subpart DDDDD. The current equipment includes a 2.93 MMBtu per hour boiler for engine jacket and space heating (EUBOILER1) and a 0.5 MMBtu per hour fuel gas heater (EUHEX). There is no pollution control equipment associated with the boilers at the facility covered under FGBOILERS.

- **Emission Limits:**
  There are no emission limits applicable to FGBOILERS.

- **Material Limits:**
  There are no material limits applicable to FGBOILERS.

- **Process/Operational Parameters:**
  According to DTE Energy, only sweet natural gas is burned at the facility. The boilers associated with FGBOILERS appear to be operated safely and with good air pollution control practices. A tune-up of the Cleaver Brooks Boiler (2.93 mmBTU) had its initial tune-up on October 21, 2015, and the heat exchanger (0.5 mmBTU) had its initial tune-up December 15, 2015 and the tune-ups will be completed every five years.

- **Design/Equipment Parameters:**
  There are no design/equipment parameters applicable to FGBOILERS.

- **Testing:**
  There are no testing requirements applicable to FGBOILERS.

- **Monitoring/Recordkeeping:**
  The facility keeps the records of the notifications and reports on file in the main office.

- **Reporting:**
  During the reporting period the permittee reported all monitoring and associated recordkeeping requirements of the ROP were met. No deviations were reported. The semi-annual and annual reports were submitted to the DEQ on a timely basis. Additionally, a Notification of Compliance Report was submitted to AQD on a timely basis and with the correct information. As previously stated, a tune-up of the boilers in FGBOILERS and a one-time energy assessment were completed by the January 31, 2016 compliance date.

- **Stack/Vent Restrictions:**
  There are no stack/vent restrictions associated with FGBOILERS.

- **Other Requirements:**
  The facility is subject to NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR, Part 63, Subpart DDDDD – Boiler MACT), and the requirements of this subpart have been addressed in the Conditions above.

NAME Cayn Owens DATE 4/23/18 SUPERVISOR SN