

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

P002328386

FACILITY: CHEVRON MICHIGAN, LLC - ECHO 10 CPF		SRN / ID: P0023
LOCATION: Echo Twp SE NW SW Sec 14, CENTRAL LAKE		DISTRICT: Cadillac
CITY: CENTRAL LAKE		COUNTY: ANTRIM
CONTACT: Natalie Schrader,		ACTIVITY DATE: 12/18/2014
STAFF: Caryn Owens	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Site Inspection & Records Review		
RESOLVED COMPLAINTS:		

On Wednesday, December 18, 2014, Caryn Owens of the DEQ-AQD conducted a scheduled on-site inspection of the Chevron Michigan, LLC – ECHO 10 CPF (P0023) located in the southeast quarter of the northwest quarter of the southwest quarter of Section 14, Township 31 North, Range 7 West in Echo Township, Antrim County, Michigan. More specifically, the site is located on the west side of Kidder Road, approximately ¼ mile off the road, and approximately 1/3 mile north of the Kidder and Finkton Road intersection. There is a small farm at the southwest corner of Kidder Road and the drive to access the site. An access gate was at the entrance to the facility, but was not locked at the time of the inspection. The purpose of this inspection was to determine the facility's compliance with permit to install (PTI) 289-09. The site has opted out of major source applicability by limiting the operational and/or production limits potential to emit (PTE) to be below major source thresholds. DEQ was unaccompanied during the field inspection, an inspection brochure was not given to anyone at this facility, but a brochure will be emailed to the company with this inspection report. The site is an area source for National Emission Standards for Hazardous Air Pollutants (NESHAP) Part 63 Subpart HH, and NESHAP Part 63 Subpart ZZZZ. The State of Michigan does not have delegated authority of the area source NESHAPs, and thus these areas were not reviewed by the MDEQ at this time. The site was covered in snow, and the weather conditions were sunny, with calm winds from the northeast, and approximately 23°F. A windsock on the above ground storage tank was in the southwest direction.

The equipment at the site consisted of two main buildings each containing a compressor engine and vertical separators. The site contained an iron sponge located on the south side of the eastern building at the site, and an approximately 400 barrel (bbl) storage tank was located on the southwestern portion of the site. A glycol dehydrator system was in the southern portion of the eastern compressor building, and was used to dry the field gas prior to transporting it to the sales line. DEQ observed a heat shimmer from the glycol dehydrator process heater, and a slight steam plume was observed from the glycol dehydrator stack outside of the building. The glycol dehydrator process heater stack was approximately 35 feet above ground surface, and the glycol dehydrator stack was approximately 15 feet above ground surface.

The two compressor engines at the site are 1265 horsepower (hp) Caterpillar G3516LE, lean burn engines and both contain oxidation catalysts. The eastern engine, which is EUENGINE1 and identified on the maintenance logs as Unit #1005, was operating at 56 psi, 1102 RPM, and 189°F. DEQ observed the inlet temperature of the catalyst as 765°F and the outlet temperature as 739°F. The AFRC reading was 2.99 v 1031 and 12 percent. The western engine, identified as EUENGINE2 and Unit #1009 on the maintenance logs, was operating at 54 psi, 893 RPM, and 186°F. The logs were filled out appropriately. DEQ observed the inlet temperature of the catalyst as 771°F and the outlet temperature as 738°F. The AFRC reading was 2.79 v 1472 and 11 percent. The stacks on the compressor engines contained mufflers and were approximately 40 feet above ground surface, no other visible emissions were observed from the northern compressor engine stack.

Records Reviewed

EUDEHY: Glycol dehydration system processes gas from the Antrim zone. The applicable requirements of this emission unit are regulated by the NESHAP 40 CFR Part 63 Subpart HH, and the DEQ does not have delegation for the NESHAP, so these areas were not addressed during this facility inspection and records review. Chevron is claiming the Chief Creek facility glycol dehydrator meets exemption R336.1288(b)(ii).

FGENGINES: Two Caterpillar 3516LE natural gas fired reciprocating internal combustion engines at 1265 hp. FGENGINES are permitted without control.

Emission Limits: Each engine (EUENGINE 1 and EUENGINE2) are limited 49.39 tons per 12-month rolling time period of NOx and 30 tons per 12-month rolling time period of CO. Based on the records reviewed, the facility included records using 12-month rolling time period calculations for emissions after control, but also included monthly emissions uncontrolled. The DEQ was able to calculate the uncontrolled 12-month rolling time period emissions for NOx and CO. The highest uncontrolled emissions for

EUENGINE1, from November 2013 through November 2014, were 11.38 tons per 12-month rolling time period for NOx and 10.81 tons per 12-month rolling time period for CO. With control, the highest NOx emissions were the same as uncontrolled emissions, and 2.73 tons per 12-month rolling time period for CO. According to Chevron, the oxidation catalyst was installed February 26, 2013, and there was a comment that it decreased CO emissions by 97 percent. The records for EUENGINE2 indicated the highest uncontrolled emissions for NOx were 10.02 tons per 12-month rolling time period, and CO were 9.52 tons per 12-month rolling time period. The highest controlled emissions for NOx were the same as the uncontrolled emissions, and CO were 2.80 tons per 12-month rolling time period.

Based on the records provided, both controlled and uncontrolled emissions are compliant with the permitted limits. DEQ requires the permittee to keep records of uncontrolled emissions for NOx and CO per 12-month rolling time period, along with controlled emission records to demonstrate that NOx and CO emissions do not exceed permitted limits.

Materials/Fuels: No material limits were applicable for FGENGINES.

Process/Operational Parameters: The facility submitted a Malfunction Abatement Plan (MAP) on February 10, 2010, and was approved by the DEQ on July 15, 2010. Based on the maintenance records, the engine was inspected daily. EUENGINE1 (Unit #1005) was shut down for a total of 167.50 hours from November 1, 2013 through November 31, 2014 for replacing filters, valves, spark plugs, and/or repair leaks, or because another plant caused the facility to be shut down.

DEQ did not observe maintenance activities associated with the catalysts on the Compressor downtime reports. EUENGINE2 (Unit #1009) compressor engine was shut down for a total of 143.35 hours from November 1, 2013 through November 31, 2014 for replacing filters, valves, spark plugs, and/or repair leaks, or because another plant caused the facility to be shut down. DEQ checked the catalyst temperatures, and the catalysts appeared to be operating properly during the reported time period, and the facility did not operate the engines without the catalysts. There was one instance where the inlet catalyst temperature (EUENGINE1, August 1, 2014) was less than the outlet temperature, but it appears to be a mis-print on the maintenance logs because no work was reported for this day, and the day before and the day after temperatures appeared similar to how the remaining temperatures were reported. The records did not show maintenance concerns with the engines. The DEQ requires an updated MAP for the facility to include the catalysts.

Testing Sampling Equipment: The facility used engine specific emission factors to calculate the emissions for NOx and CO. Performance testing has not been completed at this facility.

Monitoring/Recordkeeping: The facility monitors the natural gas usage for FGENGINES on a continuous basis and records the monthly fuel use for each engine at the facility. The facility records monthly and 12-month rolling time period records for NOx and CO. The 12-month rolling time period emissions are discussed above under emission limits. The highest monthly uncontrolled emissions from November 2013 through November 2014 for EUENGINE1 were 1.03 tons per month for NOx and 0.98 tons per month for CO. The highest monthly uncontrolled emissions for EUENGINE2 from the aforementioned time period were 0.93 tons per month for NOx and 0.88 tons per month for CO.

Reporting: The facility has not swapped out an engine at the facility since the PTI was issued.

Stack/Vent Restrictions: Based on visible observations during the field inspections, the stacks of the engines appeared approximately 40 feet above ground surface.

FGFACILITY: Conditions that include all source-wide activities at the facility.

Emission Limits: FGFACILITY is limited 89.9 tons per 12-month rolling time period of NOx and 60 tons per 12-month rolling time period for CO. Based on the records reviewed, the facility included records using 12-month rolling time period calculations for emissions after control, but also included monthly emissions uncontrolled. The DEQ was able to calculate the uncontrolled 12-month rolling time period emissions for NOx and CO, and the highest emissions for FGFACILITY, from November 2013 through November 2014, was 27.21 tons per 12-month rolling time period for uncontrolled NOx and 21.55 tons per 12-month rolling time period for CO. The highest controlled emissions for FGFACILITY were the same as uncontrolled for NOx, and controlled CO emissions were 6.79 tons per 12-month rolling time period. The emissions reported for FGFACILITY were in compliance with the permit emission limits.

Materials/Fuels: According to Chevron, no sour gas is burned at the facility.

Process/Operational Parameters: No process/operational parameters were applicable for FGFACILITY.

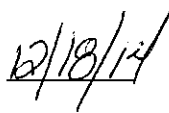
- **Testing Sampling Equipment:** DEQ did not require the facility to verify the H2S or sulfur content of the natural gas at this time.
- **Monitoring/Recordkeeping:** The facility records monthly and 12-month rolling time period records for NOx and CO, and were supplied to the DEQ for review. The 12-month rolling time period emissions are discussed above under emission limits. The recordkeeping was acceptable to the DEQ.
- **Reporting, Stack/Vent Restrictions, Other Requirements:** No Reporting, Stack/Vent Restrictions, Other Requirements were applicable for FGFACILITY.

Evaluation Summary: Based on the field inspection and records review, the facility is in compliance with PTI 289-09. However, an updated MAP is required for the facility that includes the operation and maintenance requirements for the catalysts. DEQ has requested an updated MAP from the company.

NAME



DATE



SUPERVISOR

