

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
**ACTIVITY REPORT: On-site Inspection**

N593569999

<b>FACILITY:</b> DTE Gas Company - Alpena Compressor Station		<b>SRN / ID:</b> N5935
<b>LOCATION:</b> 8512 EAST ARNOLD LAKE ROAD, HARRISON		<b>DISTRICT:</b> Bay City
<b>CITY:</b> HARRISON		<b>COUNTY:</b> CLARE
<b>CONTACT:</b> Lance Kleino , Associate Environmental Engineer		<b>ACTIVITY DATE:</b> 11/29/2023
<b>STAFF:</b> Nathanael Gentle	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b> Scheduled Onsite Inspection FY24		
<b>RESOLVED COMPLAINTS:</b>		

On November 29, 2023, AQD staff conducted a scheduled onsite inspection at DTE Gas Company Alpena Compressor Station, N5935. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment Great Lakes and Energy, Air Quality Division (AQD) Administrative Rules; and to evaluate compliance with the facilities Renewable Operating Permit (ROP), MI-ROP-N5935-2019. EGLE staff were assisted by Mr. Lance Kleino, Associate Environmental Engineer and Mr. Darin Cummings, Supervisor, Compressor Operations. The onsite inspection was conducted in conjunction with stack testing of the onsite compressor engine, EUWHITESUPERIOR. At the time of inspection, the facility was found to be in compliance.

### Facility Description and History

The DTE Gas Company Alpena Compressor Station, N5935, is a natural gas compression and transmission station containing one natural gas fired reciprocating internal combustion engine, and its associated compressor. A natural gas-fired emergency generator is also located onsite. Historically, the facility was used to raise the pressure of gas in the pipeline and provide the force required to move gas through the pipeline. The name "Alpena" refers to the location of the largest destination for the natural gas in the pipeline, back when the compressor station was operating. When the Antrim gas fields came into production, the facility was no longer needed to push gas down the pipeline. The facility remains as an unmanned station on standby in the event it is needed to provide compression to the natural gas pipeline.

As part of onsite operations, the facility operates the following units listed as exempt from needing to obtain a Permit to Install. EUWATERHEATER is a sweet natural gas fired water heater with a rated capacity of 37,000 BTU/hr. EUWATERHEATER operates as exempt based on exemption rule 336.1282(b)(i). EUBOILER is an AJAX model WG1250 sweet natural gas fired boiler with a rated capacity of 1.25 million BTU/hr. EUBOILER operates as exempt based on exemption rule 336.1282(b)(i). EUHYDROCARBONTANK is a 1,000-gallon sweet crude oil hydrocarbon tank. EUHYDROCARBONTANK operates as exempt based on exemption rule 336.1284(e). During the inspection, time was not taken to look at all exempt units.

The DTE Gas Company Alpena Compressor Station is a major source for NO<sub>x</sub>. The facility is considered a minor source for HAPs, SO<sub>x</sub>, CO, PM, and VOCs. An inspection of the facility was last completed on October 7, 2021. At the time of the 2021 inspection, the facility was found to be in compliance. As a major source, the facility is required to submit annual and semiannual ROP Certification Reports, Special Condition (S.C.) VII. 2. and 3. These reports have historically been

received on time and complete from the facility. The most recent report was received on September 6, 2023, for the reporting period of 1/1/2023 to 6/30/2023. No deviations were reported to have occurred during the reporting period. Emission reporting has historically been completed on time and complete.

## **Compliance Evaluation**

### **EUWHITESUPERIOR**

EUWHITESUPERIOR is a reciprocating internal combustion engine used to compress and push natural gas along transportation lines. The unit is a 2000 hp, spark ignition, 4 stroke, lean burn, non-emergency, natural gas-fired reciprocating internal combustion engine (RICE). The engine is subject to 40 CFR Part 63 Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The engine and its associated compressor were installed in 1975 and reported not to be subject to NSR requirements.

Facility staff reported EUWHITESUPERIOR had not been operated since the last inspection, other than for maintenance and quality control purposes. The unit is fueled with pipeline quality, sweet natural gas, S.C. II. 1. Due to the minimal hours of operation, no malfunctions have occurred, and no maintenance has been necessary since the last inspection was completed on 10/7/2021, S.C. VI 5. Should a malfunction occur on the unit, facility staff report procedures are in place to correct and document the malfunction. Facility staff maintain a handwritten logbook in which malfunction and repairs are documented. Additionally, staff report a computer work order system captures malfunctions and the associated repairs completed.

EUWHITESUPERIOR is equipped with an oxidation catalyst to reduce CO emissions, S.C.III.3. The catalyst has not been changed since the last inspection due to the engine not being operated, S.C. V. 4. Staff report the catalyst was last changed in 2015. The catalyst is equipped with a differential pressure monitor. The differential pressure is monitored to determine when the catalyst needs to be changed. The differential pressure sensor is calibrated by DTE staff on an annual basis. A spare catalyst is kept onsite.

EUWHITESUPERIOR is equipped with a continuous parameter monitoring system (CPMS), S.C. IV. 2. Staff report the monitoring system is calibrated annually by DTE staff, S.C.VI.1. Facility personnel report data from the CPMS can be viewed live while the compressor is operated. Staff did not know if the parameter monitoring system could record the measured parameters. Special condition IV. 2. states the permittee shall either install a continuous parameter monitoring system (CPMS) to continuously monitor and record the catalyst inlet temperature according to SC III.5., or install equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350°F. EUWHITESUPERIOR is equipped with a thermocouple that monitors the inlet and outlet temperatures of the catalyst. The engine will automatically shut down before the catalyst temperature exceeds 1350°F. The system is set to alarm when the pre-catalyst temperature reaches 970°F and automatically shut down if the post catalyst temperature reaches 1010°F. An accuracy audit of the thermocouple is completed annually, S.C. III.5. Records demonstrating the accuracy audit was completed were provided, S.C.VI.6. The most recent thermocouple accuracy audit was conducted on September 9, 2023.

Testing to verify catalyst system efficiency is required annually, S.C. V. 1. Stack testing was being conducted on the day of inspection by DTE's internal testing crew. Results demonstrated a CO emissions rate of 6.4 ppmvd at 15% O<sub>2</sub> dry. Test results were below the permitted limit of 47 ppmvd at 15% O<sub>2</sub>, S.C.I.1.

## **EUEMERGEN**

EUEMERGEN is an emergency generator used to provide energy for the facility in times when energy is not available from the grid. The unit is a Kohler, emergency stationary, natural gas-fired, rich burn RICE rated at 259 HP (150 KW). The generator was installed in the fall of 2015 and is subject to 40 CFR Part 60, Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. EUEMERGEN is equipped with a non-resettable hour meter, S.C. IV. 1. At the time of inspection, the hour meter was observed to read 272 hours. During the previous inspection conducted at the facility in October 2021, the hour meter read 188.6 hours. Records for hours of operation for calendar year 2023 were requested and provided, S.C. VI. 2. Hours on the engine are hand recorded monthly. Hours on the generator were recorded to be 254.7 hours on the week of January 18, 2023. From the beginning of calendar year 2023 to November 29, 2023, the emergency generator ran for a total of 17.3 hours.

There is no time limit on the operation of EUEMERGEN in emergency situations, S.C. III. The unit is limited to operating 100 hours per year for maintenance checks and readiness testing, S.C. III. 3. As described in S.C. III. 4., the unit may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours specified in S.C. III. 3. Based on the records provided, the unit was currently operated below 50 hours in 2023. The present log used to document operating hours of EUEMERGEN does not document the purpose for which the engine was operated. AQD staff recommended a column be added to the log to allow onsite staff to document emergency, non-emergency, and maintenance and readiness testing operation. Documentation of the basis for which EUEMERGEN was operated would be needed if the yearly operating hours were to exceed 50 hours.

Staff report routine maintenance is conducted on the unit. Maintenance records for the most recent 12-month period were requested and provided, S.C.VI.1. An oil change was conducted on the unit on 9/18/2023 at 265.7 hours. Staff report the engine runs every Monday for approximately 40 minutes for readiness testing purposes. Additionally, a 2-hour run is completed every 150 days. Staff report EUEMERGEN has not undergone major repair or maintenance since the last AQD inspection. If such an activity were to occur, staff report it would be documented in an onsite logbook as well the company's work order system. If EUEMERGEN is rebuilt or undergoes major repair or maintenance, subsequent performance testing to demonstrate compliance with the permitted emission limits would be required, S.C.V.1.

## **Summary**

DTE Gas Company - Alpena Compressor Station, SRN N5935, is a natural gas compression and transmission station located in Harrison, MI. Permitted emission units at the facility consist of one natural gas fired reciprocating internal combustion engine, and its associated compressor, and an emergency generator. The name "Alpena" refers to the location of the largest destination

for the natural gas in the pipeline. The facility remains as an unmanned station on standby in the event it is needed to provide compression to the natural gas pipeline. The facility is a major source for NO<sub>x</sub> and a minor source for HAPs, SO<sub>x</sub>, CO, PM, and VOCs. Based on the records reviewed and the observed activities onsite, the facility appears to be operating in accordance with the requirements of MI-ROP-N5935-2019. At the time of inspection, the facility was found to be in compliance.

NAME *Mathewes Shanta*DATE 1/9/2024SUPERVISOR *Chris Kane*