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

N624128050

FACILITY: SEMCO ENERGY Gas Company - Harris Station		**SRN / ID:** N6241
LOCATION: 23 1/ 2 MILE RD, PARTELLO		**DISTRICT:** Kalamazoo
CITY: PARTELLO		**COUNTY:** CALHOUN
CONTACT: Elisabeth Barr , Engineer III		**ACTIVITY DATE:** 12/02/2014
STAFF: Rex Lane	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On December 2, 2014, Air Quality Division (AQD) staff (Rex Lane) arrived at SEMCO Energy Gas Co. – Harris Compressor Station (hereafter "Harris Station") located on 23 ½ Mile Road (North of V Drive North), Partello, Michigan at 10 am to conduct an announced inspection. This was a scheduled inspection since facility personnel have other area job responsibilities and may not be at the facility during normal business hours. Staff introduced themselves to Ms. Elisabeth Barr, Engineer III; Mr. John Darlington, PT & S Supervisor and Mr. Bill Feasel, Operator. Staff provided SEMCO staff with their inspector credentials and a copy of MDEQ's Environmental Inspections brochure. The last AQD inspection was 3/2/11 and the facility was determined to be compliant at that time. The facility is permitted under Permit to Install (PTI) No. 182-08 and is considered to be a synthetic minor source for nitrogen oxides (NOx) and carbon monoxide (CO). Although PTI No. 182-08 does not establish legally enforceable facility wide restrictions on hazardous air pollutant (HAP) emissions, the facility is presumed to be an area source of HAPs based on an hours of operation restriction on the compressor engines and the use of oxidation catalyst controls on both engines (legally required only on EUENGINE1). Required PPE is a hard hat, steel-toed boots, safety vest, FR coveralls (provided by facility), safety glasses and hearing protection (i.e. when engines are in operation). Staff asked several questions prior to the site inspection related to facility operations.

According to plant personnel, the facility was constructed in 1975 and is an existing natural gas compressor station and storage facility. Odorized natural gas is received at the facility through a 6-inch pipeline and then is compressed further by one of two four stroke rich-burn natural gas fired engines prior to injection into one of two on-site producing wells. The producing wells are depleted oil and natural gas wells that have a total storage capacity of approximately 3 billion cubic feet (includes 1 billion cubic feet of storage from their nearby Lacey Station in Barry County) based on allowed pressure range of 1050 – 1200 psig. There is one observation well on-site that is used to monitor reservoir pressure. Typical natural gas injection season is March to October and the typical withdrawal season is November to March. Natural gas withdrawn from the reservoir is heated by a natural gas fired line heater (7.5 MMBtu/hour rated capacity) prior to being re-injected back into the pipeline.

Mr. Feasel then gave staff a tour of the facility. Information provided below is based on observations and discussions during the inspection and records requested and provided prior to and following the inspection:

PTI Exempt Equipment:

The facility has a temporary 750-gallon above ground storage tank (AST) for storing natural gas condensate and is planning to install a permanent 1,000 gallon AST in the near future. The product stored in the tank is periodically hauled away as a waste material. The natural gas condensate tank is exempt from PTI requirements pursuant to Rule 284(e). The facility removed a used-oil AST this fall and plans to install a new 1,000 gallon used-oil AST. Storage of lubricating oils is exempt from PTI requirements pursuant to Rule 284(c). Currently, the facility does not have any solvent parts washers or natural gas fired space heaters in any of the on-site structures. The facility does not have any glycol dehydration equipment on-site. The facility has a Kohler natural gas fired emergency generator that has a February 2005 manufacture date and is rated at 10.4 Kw/hour. The engine and generator are maintained by an outside vendor (Superior) and it is equipped with a non-resettable hour meter (current reading – 514.2 hours). The emergency generator is exempt from PTI requirements per Rule 285(g). The emergency generator is subject to 40 CFR Part 63, Subpart ZZZZ (i.e. RICE MACT) based on its manufacture date. The AQD has not taken delegation authority from USEPA for this federal regulation at

area source of HAPs, therefore staff did not evaluate the emergency generator's compliance with the RICE MACT.

PTI No. 182-08:

EUENGINE1 is a 625 horsepower Caterpillar rich-burn natural gas fired reciprocating engine that was installed in 1990. The air use permit required that catalytic controls be installed on EUENGINE1 on or before 12/31/08. EUENGINE2 is a 650 horsepower Superior rich-burn natural gas fired reciprocating engine that was installed in 1981. Catalytic controls were installed on EUENGINE2 prior to 10/19/13 under the pre-2013 amendments to the RICE MACT. In January 2013, the RICE MACT was amended to allow owners and operators of existing stationary 4-stroke spark ignition engines above 500 HP that are area sources of HAP emissions and where the engines are "remote" from human activity to use established management practices for these sources rather than having to meet numeric emission limits and conduct associated testing and monitoring. Under the RICE MACT, a remote area is defined as either a DOT Class 1 pipeline location, or, if the engine is not on a pipeline, if within a 0.25 mile radius of the facility there are 5 or fewer buildings intended for human occupancy. The facility updates their "remote area" determination on an annual basis and the most recent evaluation is attached to this inspection report. The AQD has not taken delegation authority from USEPA for this federal regulation at area sources of HAPs, therefore, staff did not evaluate the compressor engine's compliance with 40 CFR Part 63, Subpart ZZZZ.

The engine electronic control panel monitor can display the pre- and post-catalyst exhaust temperature and this is recorded on an operator's log when personnel are on-site during engine operation. The engines are equipped with electronic non-resettable hour meters and the engines are maintained by an outside vendor (Exterran). The current hour meter readings for EUENGINE1 and EUENGINE2 are 18,357.8 hours and 5,116.8 hours, respectively. The compressor engines were not in operation at the time of the inspection.

EUENGINE1:

Special Condition (SC) 1.1 – A review of attached operational records for 2012 – 2014 show compliance with the 7033 hours limit for EUENGINE1. The highest 12-month rolling time period for 2014 occurred in June 2014 (3,961 hours) which is about 56% of the allowable limit.

SC 1.2 – The permittee installed catalyst controls prior to the 12/31/08 deadline. The outside vendor for engine maintenance also performs an annual catalyst activity test and the results for April 2014 are attached. Annual engine and catalyst maintenance checks, annual catalyst activity tests and operator monitoring of pre- and post-catalyst exhaust temperature demonstrate that the permittee has installed, maintained and operated the catalytic converter in a satisfactory manner.

SC 1.3 – The permittee is maintaining monthly and 12-month rolling time period records of hours of operation for EUENGINE1.

EUENGINE2:

SC 2.1 - A review of attached operational records for 2012 – 2014 show compliance with the 7033 hours limit for EUENGINE2. The highest 12-month rolling time period for 2014 occurred in June 2014 (3,815 hours) which is about 54% of the allowable limit.

SC 2.2 - The permittee is maintaining monthly and 12-month rolling time period records of hours of operation for EUENGINE2.

FGFACILITY:

SC 3.1a – A review of attached emission records for 2014 demonstrates compliance with the < 90 tons/year NOx emission limitation on a 12-month rolling time period. The highest reported NOx emission rate occurred in January 2014 (29.6 tons/year) or approximately 32% of the allowable limit.

SC 3.1b - A review of attached emission records for 2014 demonstrates compliance with the 14.1 tons/year CO emission limitation on a 12-month rolling time period. The highest reported CO emission rate occurred in January 2014 (7.3 tons/year) or approximately 52% of the allowable limit.

SC 3.2 – The permittee is required to keep in a satisfactory manner, monthly and 12-month rolling time period CO and NOx emission calculations for FGFACILITY, as required by SC 3.1a and 3.1b, and Appendix A.

Note: The facility is not using the equipment specific emission factors listed in Appendix A for either EUENGINE1 or EUENGINE2 however, Appendix A is obsolete for EUENGINE2 because it does not account for installation of catalytic controls and its reduction on CO and NOx emission rates for this engine. The permittee appears to be using an emission factor that is based on fuel Btu and consumption rates which can only be used upon approval by the AQD Kalamazoo District Supervisor and this approval has not been granted to date. The permittee is allowed under Appendix A to use emission factors from engine vendor data or from source specific testing. Staff recommends that the permittee use the results from the annual catalyst activity test to calculate the monthly and 12-month rolling time period emission rates for CO and NOx from EUENGINE1 and EUENGINE2 for compliance demonstration purposes under FGFACILITY. On 12/15/14, staff left a voice mail message with Ms. Barr for a return call to discuss this matter in further detail.

SC 3.3 – The permittee has not changed out or replaced either EUENGINE1 or EUENGINE2 with an equivalent-emitting or lower-emitting engine.

At the time of the inspection, it appears that SEMCO Harris Station is in compliance with PTI No. 182-08 (see notation under SC 3.2) and all applicable state air quality rules and regulations. -RIL

NAME RIL DATE 12/17/14 SUPERVISOR MD 12/17/2014