

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

P026033048

FACILITY: SAVOY ENERGY LP - Goetz 8 CPF		SRN / ID: P0260
LOCATION: SECT 8 T6S-R3E (ADRIAN TOWNSHIP), ADRIAN		DISTRICT: Jackson
CITY: ADRIAN		COUNTY: LENAWEE
CONTACT: Dylan Foglesong ,		ACTIVITY DATE: 12/09/2015
STAFF: Zachary Durham	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled, announced inspection of PTI 121-11A.		
RESOLVED COMPLAINTS:		

Contact

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Purpose

This was a scheduled, announced inspection of the unmanned oil and gas processing facilities at the Savoy Energy – Goetz 8 Trust CPF location in Adrian, MI. Brian Carley and I arrived on site at around 12:00pm and were met by Jack Rokos, Operations Manager. The visit was to determine compliance with Federal and State applicable requirements, including Act 451, Part 55, Air Pollution Control regulations and conditions in their Permit to Install (PTI) 121-11A.

Background

The processes being run here are dependent on the production from the wells currently being pumped. The pumps deliver, via underground pipelines, a mixture of water (brine), oil and gas to the processing facility. The main facility has a heat treatment unit for each pump where the mixture is separated into each component to be further processed, stored or disposed of.

Gas is initially compressed and treated with a glycol dehydrator. Glycol dehydration units are subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63, Subpart HH, which outlines the Generally Available Control Technologies (GACT) for hazardous air pollutants (HAP) within this industry. Subpart HH especially focuses on benzene emissions from triethylene glycol (TEG) dehydration units. Savoy is not subject to Subpart HH because they control benzene emissions to below 0.90 megagrams per year and gas flow rate to the dehydrator is below 85,000 standard cubic meters per day, as the regulation allows. The dehydrator is also equipped with a condenser that is designed to recover gas and combust them to reduce emissions.

After dehydration, gas is passed through a skid mounted Joule-Thompson unit that condenses heavier hydrocarbons out of the gas stream to be collected in their "propane" tank on site, which is hauled off by the truck load for further processing. The remaining gas, which is nearly pipeline quality natural gas, is sent to the Hanover 19 facility via pipeline for further processing and sale.

Oil is stored in tanks on site and trucked out as necessary. There are four above ground storage tanks for oil which are exempt from permitting by Rule 284(e) because each tank is below 40,000 gallons and holds sweet crude. Additionally, all oil storage tanks are vented to a continuously burning flare to control potential emissions of volatile organic compounds (VOC). The flare is exempt from requiring a PTI by Rule 288(c) because it fires sweet natural gas.

The brine water is collected in two tanks and disposed of in the adjacent injection well.

The New Source Performance Standard (NSPS) in 40 CFR 60 Subpart OOOO, exists for industries involved in crude oil and natural gas production, transmission and distribution. Potentially affected facilities include gas wells, centrifugal and reciprocating compressors, pneumatic controllers, and storage vessels. This standard addresses leak detection and repair (LDAR) programs. Savoy submitted their initial compliance report in October 2014, which identified 8868 monitoring points based on piping and instrument diagrams (P&ID) of the plant. According to the initial compliance report, the storage tanks demonstrated potential VOC emissions less than 6

tons, and thus are not affected facilities. The storage tank PTE was determined using Fact Sheet #9845 for Oil and Gas Production Facilities, which was included in their application (see attached email, PTE calculations from application, and Fact Sheet #9845). Also, because the pneumatic controls are run with compressed air, as opposed to gas, they are not affected either. The reciprocating compressor was the only affected facility listed in this report. Section 4.0 of this report indicated that Savoy intended to start submitting semiannual reports, which AQD has yet to receive.

The process/operational restrictions section of the facility wide flexible group (FGFACILITY) included the NSPS for 40 CFR 60, Subpart KKK for leaks of VOC from onshore natural gas processing plants. Subpart KKK does not apply to this facility, however, because the facility commenced operation after August 23, 2011.

Jack explained to me that production has decreased since the installation of the equipment, and is currently producing about 30 barrels of oil and 100,000 scf of gas per day.

Compliance Evaluation

EUDEHY

This is the emission unit for the glycol dehydrator. While on site I observed this piece of equipment and the associated orifice plate meter to record gas flow to the unit. The permit states that the glycol recirculation rate shall not exceed 0.67 gal/min. The attached record for the dehydration unit indicates a pump rate of 12 gal/hr, which calculates to 0.20 gal/min. Also on this attachment are records of controlled and uncontrolled benzene emissions in tons/year and are calculated by Savoy using the GLYCalc program, which shows 0.0035 and 0.0708 tons/year, respectively. Also attached is the most recent gas analysis used to accurately assess emissions data.

FGENGINES

This is the flexible group for the natural gas fired engines on site. Since the issuance of this permit EUENGINE2 was never put into service and, because it was too large for their power needs, EUENGINE3 was replaced with a smaller engine that is exempt from requiring a PTI by Rule 282(b)(i). EUENGINE1 serves as the gas compression engine and is monitored for fuel use with an orifice plate meter. Emissions are controlled with a catalyst and tracked monthly for monthly and 12-month rolling NOx and CO. Attached are the emission and maintenance logs for each engine and a statement from the company regarding EUENGINE2. Limits for EUENGINE1 are 7 tpy for NOx and 13 tpy for CO. Actual emissions, as controlled from this engine, for the last 12 months have been 2.88 tons NOx and 2.43 tons CO.

FGFACILITY

This is the flexible group for facility wide conditions. Limits of 65 tpy of NOx and 250 lb/yr of Benzene are included in this section and are appearing to be satisfied by the records and logs mentioned above. The actual benzene emissions of 0.0035 tons equate to 7 lbs and the NOx from EUENGINE1 at 2.88 tons are both substantially lower than permitted values. The NOx emissions from the low horsepower unit that replaced EUENGINE3 have not been included, though the current MAERS reporting year will be the first for this exempt unit.

Summary

Because this is an unmanned facility, I arranged the meeting beforehand. Upon arriving Brian and I introduced ourselves to Jack Rokos, who was waiting outside the facility. We proceeded through the facility and observed the various sections of the building housing the dehydrator, compressor, and condenser units. Jack pointed out the meters put in place on both the dehydrator as well as the compressor engine, which are checked daily. He mentioned that all pneumatic controls were run by compressed air as opposed to gas, which can have potential emissions.

We then observed the heater treater units that are responsible for the separation of the oil, gas, and water mixture being pumped from the well field. These operate on the relative specific gravities of each constituent and are heated to break the oil-water emulsions. We could also see the flare burning at what seemed like a safe distance away from the ongoing operations.

Next, we observed the closest well head being pumped. They have leased ~100 acres of property in the

surrounding area for wells, each of which is being pumped to this location. These particular pumps are gas fired.

Finally, we moved to the other side of the facility where the storage tanks for oil and brine water are located. We climbed a set of stairs and observed the pipes connecting the four oil storage tanks that appeared to vent to the flare. They also had emergency pressure relief valves on top should the flare malfunction or otherwise become compromised. The water brine tanks looked the same, though were not connected to the vent line.

This concluded our site inspection, so we left the property. Since then, Dylan Foglesong has provided me with the necessary records via email.

Compliance Status and Recommendations

I have determined this facility to be in compliance with PTI 121-11A.

I recommend that the facility add the new, low horsepower generator to their MAERS report for verification that the facility wide NOx limit is being maintained. This has been communicated to Savoy.

I also recommend that the facility apply for a permit modification to include the conditions of the NSPS in 40 CFR 60 Subpart OOOO as they apply to this facility. In particular, the required annual reporting for affected reciprocating compressor facilities as outlined in 40 CFR 60.5420(b) should be addressed. In addition, references to Subpart KKK should be removed from the permit.

Lastly, because the facility is subject to Subpart OOOO, I have recommended that they be added to the fee billing as a Category II facility. The final determination identified that the compressor is the only affected facility and therefore subject to the NSPS. An invoice letter will be drafted and sent to the company.

EDIT: It has since been determined by AQD that NSPS Subpart OOOO is not subject to this facility, however, NSPS Subpart KKK as originally stated in the permit does apply to this facility. The initial compliance notification for Subpart OOOO that identified a subject compressor was not considering the manufacture date of the equipment, but rather the date of installation at this location. The compressor was manufactured within the time frame that Subpart KKK applies to. The source remains a Category II facility. ZMD 5/23/16

NAME Fack Durham

DATE 5/23/16

SUPERVISOR [Signature]