

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

N795463269

FACILITY: TUSCOLA ENERGY MCPHERSON A-1-24		SRN / ID: N7954
LOCATION: 6082 CASS CITY RD, AKRON		DISTRICT: Bay City
CITY: AKRON		COUNTY: TUSCOLA
CONTACT: Jeff Adler , President		ACTIVITY DATE: 06/02/2022
STAFF: Adam Shaffer	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: On-site inspection.		
RESOLVED COMPLAINTS:		

An onsite inspection and records review was conducted by Air Quality Division (AQD) staff Adam Shaffer (AS) of the Tuscola Energy, Inc. (TE) site specifically the 6082 Cass City Road Wisner Township, Michigan location. Applicable records were requested and later received on June 3, 2022 to verify compliance with permit to install (PTI) No. 14-09E. A joint in-person inspection consisting of AQD staff AS and Oil, Gas, and Minerals Division (OGMD) staff Kasey Todd (KD), to verify onsite compliance was completed on June 2, 2022.

Facility Description

TE is an oil production company with various oil well sites located in Michigan. This site is in operation with PTI No. 14-09E. The facility is an opt-out source for sulfur dioxides (SO₂). The facility is also under Consent Order AQD Number 37-2015.

Offsite Compliance Review

Based on the timing of the inspection, the 2021 Michigan Air Emissions Reporting System (MAERS) Report was reviewed. The emissions reported were similar to the emissions in the records provided. After further review, the 2021 MAERS Report appears acceptable.

Compliance Evaluation

A request was sent to Mr. Jeff Adler, President, for various records required by PTI No. 14-09E. Records were received on June 3, 2022 and will be discussed further in this report. An onsite inspection of the site was completed on June 2, 2022. AQD staff AS and OGMD staff KD arrived in the area at approximately 9:55am. Weather conditions at the time were partly cloudy skies, temperatures in the mid 50's degrees Fahrenheit and winds from the southeast at 5-10mph. Several company staff that included Mr. Adler were onsite during the inspection to provide a tour of the site and answer site specific questions. Requested records were provided by Mr. Adler.

As mentioned above, TE is an oil production company. The various stages of onsite processes were reviewed during the inspection and will be discussed further below. The status of the one well associated with this site is also described below.

McPherson A-1-24 – This well was observed in operation at the time of the inspection. The site had recently been shut down for maintenance and resumed operation on 05/30/22 after company staff replaced a thermocouple for the flare.

PTI No. 14-09E

FGOILPRODUCTION

This flexible group is for all permitted oil production equipment at the facility. The equipment onsite processes sour crude oil from the McPherson A-1-24 well and is controlled by a flare. Emission units for this flexible group are one oil storage tank and one oil/gas separator. The permit includes two oil storage tanks, but one tank has since the issuance of the permit been removed.

Per Special Condition (SC) II.1, this flexible group is subject to a hydrogen sulfide material limit of 310 lbs per day. Records were requested and reviewed for select time periods. Upon initial review, the company appeared to be overcalculating hydrogen sulfide emissions and reported twenty-one days in 2022 where this material limit was exceeded. Using the correct hydrogen sulfide concentration, the company still appeared to exceed the material limit ten days in 2022. This is a violation of PTI No. 14-09E, FGOILPRODUCTION, SC II.1, and Consent Order AQD No. 37-2015, Sections 15.E.1 and 15.D. Additionally, there appears to have been a lightning strike in 2021 that resulted in data for select time periods being deleted. After further review, no further action is necessary at this time regarding the missing data from the lightning strike.

Per SC III.1, the permittee shall not use FGOILPRODUCTION to process any wells other than the McPherson A-1-24 without prior notification to and approval by the AQD. The sour well may be left open, when not being pumped. It was verified at the time of the inspection that the McPherson A-1-24 is the only well for this site.

Per SC III.2, the permittee shall not operate FGOILPRODUCTION for more than 305 days per year based on a 12-month rolling time period as determined at the end of each calendar month. Records were requested and provided for select time periods. Upon review of the monthly / 12-month rolling time period days, inconsistencies were noted, and additional records were requested. Speaking with company staff, it was determined that on days of a low recorded flow (<1) these days were not counted as the well being in operation. This appears acceptable at this time. Errors were still noted in the records, however, they did not appear to go over the 12-month rolling total days of operation limit. Moving forward, TE shall keep more acceptable records of the monthly / 12-month rolling total days of operation.

Per SC IV.1, the permit shall a) operate a continuously burning pilot flame at the flare and pilot fuel shall be only sweet gas. b) operate a mechanism that will automatically shut down the McPherson A-1-24 well pump jack to stop fluid flow by cutting off the electrical power supply in the event that the flare pilot flame is extinguished. The permittee shall not resume fluid flow into FGOILPRODUCTION unless the flare pilot flame is re-ignited and maintained. and c) have a mechanism that will automatically stop flow of gas to the FGOILPRODUCTION in the event that the flare pilot flame is extinguished. The permittee shall not resume gas flow into FGOILPRODUCTION unless the flare pilot flame is re-ignited and maintained. TE staff verified that propane is used to fuel the pilot flame. The facility is equipped with a profire system that monitors the pilot flame temperature which is used to light the flare that controls the hydrogen sulfide emissions. The setpoint temperature for the pilot flame is 200°F and at 195°F the profire will attempt to relite the flare. Once the temperature falls below this, the profire system will shut down flow from the wellhead. Additionally, the site appears to also have in place that when the flare goes down this automatically kills power to the wellhead from pumping. During the inspection when a partial shutdown was started, this safety measure was observed to take place. A murphy switch was stated by company staff to be in place for the well with the low pressure setpoint at 0

lbs and the high pressure setpoint at 50 lbs. After further review, TE appears to be following the applicable items per this condition.

As mentioned above, a partial shutdown was initially attempted and aborted after TE further explained the wellhead safety measure in place to shutdown pumping if the flare goes out and was observed to go into effect. Based on the observations made, the profire system appears to be operating properly.

The following flow rates were recorded during the course of the inspection.

June 2, 2022, Approximately 9:58am

Flow Rate (MSCF/D) – 31.6, 31.5, 31.5

Flow Today (MSCF) – 13.5, 13.5, 13.5

Flow Monthly (MSCF) – 35.3, 35.3, 35.3

Flow Yesterday (MSCF) – 35.3, 35.3, 35.3

Per SC IV.2, the permittee shall not operate FGOILPRODUCTION unless all emergency relief valves, all storage tanks, all oil/gas separators, and all dehydrators are vented to a flare, an incinerator or a vapor recovery system. Based on the observations made at the time of the inspection all units are vented to the flare.

Per SC IV.3, the permittee shall not load out any tank unless a vapor return system is installed, maintained and operated in a satisfactory manner. At the time of the inspection, a vapor return line was not installed and in use for the one tank during oil loadouts. Company staff had mentioned that emissions are vented to the atmosphere instead of recovered and sent back to the oil storage tank during load out. This is a violation of PTI No. 14-09E, FGOILPRODUCTION, SC IV.3, and Consent Order AQD No. 37-2015, Sections 15.E.1 and 15.E.5. Following the site inspection, a photo was provided on June 3, 2022, by TE staff that showed a vapor return line had been installed on the one tank onsite.

Per SC VI.1, the permittee shall monitor and record the following: a) volumetric flow rate of sour gas going to the flare on a daily basis. b-c) monthly / 12-month rolling time period days the well operated. and d) four consecutive quarterly readings of the concentration of hydrogen sulfide in the sour gas on a quarterly basis. Records were requested and provided for select time periods. Based on the records reviewed, TE appears to be keeping track of daily flow rates. As discussed above, the monthly / 12-month rolling time period days of well operation were concluded to be acceptable at this time though moving forward shall kept in a more satisfactory manner.

Previous concentrations of hydrogen sulfide in the sour gas going to the flare with the wells pumping were requested and provided. Historically, testing had appeared to have been completed several times a year. A letter dated November 13, 2018, had been submitted to the AQD that had listed test results since 2015 and the hydrogen sulfide concentration percentages to be used for the rest of 2018 and through the summer of 2019 in applicable calculations. In a subsequent letter dated August 6, 2021, to the AQD Bay City District Supervisor, TE had proposed annual testing to take the median value result of the last four tests to be used when determining hydrogen sulfide concentrations that are used in applicable calculations. The proposed conditions were later approved on September 24,

2021. Also, historically, the company had submitted to the AQD concentration values that it planned to use in calculations. It was noted that testing had not been completed in 2020 and had been determined to be due to the Covid-19 pandemic. After further review, this appears acceptable at this time. It was concluded that TE appears to be adequately determining and keeping track of the hydrogen sulfide concentrations.

Per SC VI.2, the permittee shall complete applicable calculations each calendar month. Records were requested and reviewed for select time periods. Upon review, the agreed H₂S concentration after June 2021 was noted to be slightly lower than what was used in the records provided. Additionally, a minor error was noted in the calculations for the tons of SO₂ emission column. After further review, the records overall appear acceptable.

One stack is listed in association with this flexible group and was observed during the course of the inspection. Though the dimensions were not measured they appeared to be consistent with what is listed in PTI No. 14-09E.

Additional Observations

The flare was noted to be on during the inspection and the pilot flame temperature was observed at 1,279°F. A shroud was not on the flare at the time of the inspection and based on a conversation with TE staff, the former shroud noted on the ground near the flare had blown off sometime in April / May 2022 during a windstorm.

At the time of the inspection, the propane tank used to provide fuel to the pilot flame for the flare was at 20% full.

A hydrogen sulfide monitor was worn by AQD staff throughout the course of the inspection. No issues were noted.

Conclusion

Based on the facility walkthrough, observations made, and records received, TE is not in compliance with PTI No. 14-09E. A violation notice (VN) shall be issued for the following violations.

Records reviewed showed that TE exceeded their daily hydrogen sulfide material limit. This is a violation of PTI No. 14-09E, FGOILPRODUCTION, SC II.1, and Consent Order AQD No. 37-2015, Sections 15.E.1 and 15.D.

At the time of the inspection, a vapor return line system was not installed for the one oil storage tank onsite. This is a violation of PTI No. 14-09E, FGOILPRODUCTION, SC IV.3, and Consent Order AQD No. 37-2015, Sections 15.E.1 and 15.E.5.

NAME Adam J. Hoffman

DATE 06/28/22

SUPERVISOR C. Hare