

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

B739469817

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| FACILITY: Tuscola Energy, Inc. | | SRN / ID: B7394 |
| LOCATION: 7259 MOWATT RD, NORTH BRANCH | | DISTRICT: Lansing |
| CITY: NORTH BRANCH | | COUNTY: LAPEER |
| CONTACT: Ed Blake , Foreman | | ACTIVITY DATE: 11/09/2023 |
| STAFF: Daniel McGeen | COMPLIANCE STATUS: Non Compliance | SOURCE CLASS: MINOR |
| SUBJECT: Unannounced inspection. | | |
| RESOLVED COMPLAINTS: | | |

On November 9, 2023, the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD) conducted an unannounced inspection of the Tuscola Energy, Inc. Rich Field Tank Battery.

Facility environmental contacts:

- Jeff Adler, President; 989-213-8184; jeffadler31@hotmail.com
- Ed Blake, Production Foreman; 989-619-7824; weblake@outlook.com

EGLE AQD contact:

Dan McGeen, inspector; 517-648-7547; mcgeend@michigan.gov

Facility description:

Tuscola Energy's Richfield Tank Battery is an oil handling facility: pumping oil, gas, and water or brine out of the ground and separating these components from each other.

Emission units:

| Equipment | Description | Permit To Install (PTI) Or Exemption Rule | Compliance Status |
|---------------------------------------|---|---|-------------------|
| Flare | Onsite flare | PTI 205-76E | Noncompliance |
| Two (2) horizontal 20x6 heat treaters | One operating for production, the other not in operating condition | Rule 282(2)(b) | Compliance |
| Three (3) 4x20 vertical heat treaters | Two are in operation, one is used for backup (in instances of malfunction). These are "test treaters" to check the oil, water, and gas content. | Rule 282(2)(b) | Compliance |

| | | | |
|---|--|--|---------------------------|
| Two (2) Ajax 165 hp engines | Fully operational, no longer in use. Once used for water injection, but an electric 59T water pump is now used. | Rule 285(2)(g) but may be subject to federal regulations | Compliance, not operating |
| Crude oil loading rack | Crude oil loading rack. | PTI 205-76E | Compliance |
| Two (2) crude oil storage tanks | Two 3,000 barrel storage tanks. | PTI 205-76E | Compliance |
| Two (2) brine tanks, aka saltwater disposal (SWD) tanks | 100-barrel SWD tank and 210-barrel SWD tank. Used to hold water removed from onsite sweet gas well. This brine solution is used to “kill the well” or stop production from a well by holding in the H2S gas. | PTI 205-76E | Compliance |
| Vapor recovery system | Includes vapor recovery unit, ventilation piping, and an emergency flare. | PTI 205-76E | Compliance |
| Methanol tank | 500-gallon methanol tank. Injected into the gas stream during the winter months to prevent ice from forming in the gas/oil lines. | Rule 284(2)(n) | Compliance |

Regulatory review:

Tuscola Energy's Richfield Tank Battery is an oil handling facility: pumping oil, water/brine and gas out of the ground and separating these components from each other. The gas is separated from the oil/water mixture and is sent to the Tuscola Energy Richfield Gas Plant, State Registration Number (SRN) B5462, to be burned off as sour gas in the flare. The oil and water are separated in one of the “heat treaters” located onsite (run at 125°F). Oil is then stored onsite in 2 crude oil tanks. The oil gets sold (distributed via the loading racks) and the water and brine from the heater treater are contained within 2 saltwater disposal (SWD) storage tanks prior to being pumped back into injection wells.

The H2S Emergency Contingency Plan for the Richfield Gas Plant, SRN B5462 also applies to this location.

All storage containers (heater treaters, crude oil tanks, and brine tanks) have ventilation piping that are connected to the emergency flare located onsite (via a vapor recovery system) but are also connected to piping that directs the waste gas to the flare located at the Richfield Gas Plant (B5462).on McTaggart Road

Although the PTI requires Tuscola Energy to maintain all records required by 40 CFR 60 Subpart Ka, Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and prior to May 19, 1978, this regulation does not apply to this facility. This was previously determined by AQD inspector Michelle

Luplow. The oil storage tanks were installed in 1979, and store petroleum prior to custody transfer, but per Section 60.110a(b), with each liquid petroleum storage vessel at 126,000 gallons capacity, they are less than the 420,000-gallon regulatory thresholds; therefore, these storage vessels are not affected facilities.

A permit application number 137-09 to remove NSPS Subpart Ka applicability from PTI 205-76E was submitted by a previous owner, Breitburn, but the application was voided per the company's request. There were no records in the Lansing District Office or Permit Section files that discussed why the company chose not to proceed with having this condition removed.

There are 2 Ajax 165 hp engines located onsite that were once used for water injection back into the wells. Although these are still present onsite and operational, they have not been used since the installation of the electric plunger pump prior to the 2011 inspection by AQD. They may be potentially subject to New Source Performance Standards or National Emissions SHAP regulations for reciprocating internal combustion engines (RICE). A link to the self-navigating RICE quizzes at the AQD website can be shared with the company, to allow them to determine whether they are subject.

The facility is said to serve 12-15 active wells, at the time of this inspection.

Fee status:

This facility is not considered fee-subject, because it is not known to be subject to a new source performance standard or a maximum achievable control technology standard.

This facility is not required to submit an annual air emissions report through either the Michigan Air Emissions Reporting System, or through its successor, MiEnviro.

Location:

- Location: 7259 Mowatt Road, North Branch, 48461, Lapeer County.
- Description: The facility is in a rural area, mostly agricultural, with scattered houses to the east, south and southeast, and undeveloped land to the immediate west.

Recent inspections:

- 8/31/2022
- 11/15/2017
- 7/5/2014
- 12/5/2012

Recent violations:

None.

Recent complaints:

Per the Memorandum of Understanding between AQD and EGLE's Oil, Gas, & Minerals Division (OGMD), OGMD has primary responsibility for investigation of odor complaints from well fields, and from oil and gas production facilities such as the tank battery. Therefore, recent odor complaints of oil and gas production equipment were responded to by OGMD.

OGMD inspector Emma Atkinson provided the following log of 2022-2023 complaints that have been received by OGMD:

| Date of Complaint | | | | | | | |
|-------------------|------------|-------------------------------|--|---|------------------|------------------|-----------------------------------|
| 1/22/2022 | 8/24/2022 | 11/12/2022 | 7/6/2023 | 8/19/2023 | 9/18/2023 | 11/10/2023 | 12/5/2023 PEAS, text |
| 1/30/2022 | 9/11/2022 | 11/16/2022 | 8/5/2023 x3 | 8/20/2023 x2 | 9/20/2023 x2 | 11/11/2023 x5 | 12/6/2023 |
| 2/4/2022 | 9/27/2022 | 1/18/2023 PEAS x2, text | 8/6/2023 | 8/21/2023 | 10/12/2023 x2 | 11/12/2023 x2 | 12/13/2023 x 2 (call, PEAS) |
| 3/7/2022 | 9/30/2022 | 1/23/2023 | 8/12/2023 PEAS | 8/31/2023 | 10/18/2023 | 11/17/2023 | |
| 3/9/2022 | 10/11/2022 | 1/28/2023 | 8/15/2023 | 9/1/2023 x2 PEAS, text while on site | 10/22/2023 | 11/19/2023 | |
| 3/19/2022 | 11/2/2022 | 2/10/2023 | 8/17/2023 | 9/5/2023 | 10/28/2023 | 11/28/2023 | |
| 4/28/2022 | 11/8/2022 | 6/2/2023 x2 | 8/18/2023 x6 Email, PEAS, texts | 9/10/2023 | 10/30/2023 | | 12/4/2023 |

Safety apparel required:

Safety glasses, steel-toed boots, hard hat, high visibility vest, and hearing protection, for a general site visit. However, for anyone going on the catwalk to the two saltwater disposal (SWD) tanks, the required personal protective equipment (PPE) includes a portable oxygen supply.

Odor evaluation:

An odor evaluation was conducted by Dan McGeen, inspector, while following Production Foreman Ed Blake to the tank battery site from the nearby Tuscola Energy Richfield Gas Plant.

- Start time of odor evaluation: 1:13 PM.

- Weather conditions: Sunny and 55 degrees F, with winds out of the WSW at 5-10 miles per hour.
- Route taken: Mowatt Rd. south to intersection with Dwyer Rd., where site entrance is.

Odors were detected as follows:

| Time | Location | Odor Level | Odor Description | Comments |
|---------|---|------------|-------------------------------------|--|
| 1:14 PM | Mowatt Road, about 1,000 feet north of intersection with Dwyer Road | 2 | Hydrogen sulfide (H ₂ S) | Detected about 1,000 feet north of entrance to the site. |

The AQD 0 to 5 odor scale is as follows:

0 - Non-Detect

1 - Just barely detectable

2 - Distinct and definite odor

3 - Distinct and definite objectionable odor

4 - Odor strong enough to cause a person to attempt to avoid it completely

5 - Odor so strong as to be overpowering and intolerable for any length of time

The brief H₂S odor detected on Mowatt Road today was determined to be insufficient at this time to constitute a violation of Michigan Air Pollution Control Rule 901(b), which prohibits unreasonable interference with the comfortable enjoyment of life and property.

Arrival:

AQD was represented by D. McGeen, inspector. This was an unannounced inspection, conducted immediately after an unannounced inspection of the nearby Tuscola Energy Richfield Gas Plant, SRN B5462.

- Arrival at Mowatt Road tank battery: 1:17 PM.
- Weather conditions: Sunny and 55 degrees F, with winds out of the WSW at 5-10 miles per hour.
- Visible emissions: None detected.
- Odors onsite: None detected onsite at the time of arrival.

Inspection:

No tanker trucks were loaded with oil during the inspection.

D. McGeen was informed that there is an inlet separator for the well field, and that gas from the wells is routed to the flare at the Richfield Gas Plant, SRN B5462. He was also told that the flare for the Richfield Tank Battery is not lit, and he confirmed that visually. This is discussed in the compliance checklist of PTI 205-76E, later in this report, as a violation of Special Condition (SC) 10. D. McGeen explained while onsite that a Violation Notice (VN) would be sent.

Of the two horizontal heater treaters, only the west unit is capable of operation. It was running, with no visible emissions. It is operated on "buy back" natural gas from SEMCO, and this gas enters the plant through a yellow line, that was pointed out.

One of the two stock tanks for storing crude oil is currently in service, E. Blake said. The oil is circulated each day back to the heater treater, to stay conditioned for sale. There were no visible emissions from either of the stock tanks.

Intermittently, a distinct and definite odor of H₂S could be detected onsite. D. McGeen was unable to identify a single process or location as the source. E. Blake indicated that rubber seals on tanks do not last, and that odors can escape, so thief hatches are periodically replaced.

There is a slop tank onsite. E. Blake indicated no materials have been added to it in the months since he began working here for Tuscola Energy. There were no visible emissions from the tank.

Brine or saltwater stored in the two SWD tanks is pumped to the injection wells, of which E. Blake said there were 5 or 6. He and D. McGeen entered the pump building. There were barely detectable H₂S odors, intermittently. No pumping was being done right now because the water level in the SWD tanks was down to 7.5 feet he explained, but the pump will come on when the water level reaches 9.0 feet. The 9.0-foot level is evidently reached a number of times during a typical day.

The site's vapor recovery unit or VRU was running, and there were no visible emissions.

H₂S monitors are said to be located throughout the site: in the pump building (for the salt water) and in the header building where the injection lines go underground. A previous plant contact said during the 2014 inspection that the monitors are in these locations rather than around the exterior of the plant because they are considered confined spaces.

Compliance check with special conditions (SC) of PTI 205-76E:

| PTI 205-76E, SC No. | Requirement | Comments | Complies? |
|---------------------|--|---|-----------|
| 10 | Visible emissions from the tank battery shall not exceed a 6-minute average of 20% opacity, except as specified in Rule 301(1)(a). | There were no visible emissions from the tank battery. | Yes |
| 11 | Applicant shall not operate this facility unless all storage tanks are vented to a vapor recovery unit. | Oil storage tanks and SWD tanks were vented to the VRU. | Yes |

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| 12 | The applicant shall maintain records as required by the Federal Standards of Performance for New Stationary Sources, 40 CFR, Part 60, Subpart K. | NA, per M. Luplow. The oil storage tanks were installed in 1979, and store petroleum prior to custody transfer, but per Section 60.110a(b), with each liquid petroleum storage vessel at 126,000 gallons capacity, they are less than the 420,000-gallon regulatory thresholds; therefore, these storage vessels are not affected facilities under Subpart Ka. | NA |
| 13 | All source operating data and records of the number of times the emergency flare is used shall be kept on file and made available to the District Engineer, upon request. | It is AQD's understanding that the emergency flare has not been used since Tuscola Energy assumed ownership of this facility, and therefore there are no records. | Yes |
| 14 | Applicant shall operate a continuously burning pilot flame at the flare. In the event the flame is extinguished, shut-in of this facility shall commence automatically within one second. Operation of this facility shall not be restarted unless corrective measures taken to reignite the flame are successful. | D. McGeen was advised that the pilot flame for the site's flare has not been lit in the months since E. Blake has been working here for Tuscola Energy. | No |
| 15 | The applicant shall not operate the flare more than 6.5 hours per day nor 323 hours per year, and during emergency conditions only. | The flare has not been operated at all in recent months, and so the daily and yearly limits on hours of operation have not been exceeded. | Yes |
| 16 | The exhaust gases from the tank battery shall be discharged unobstructed vertically upwards to the ambient air from a stack with a maximum diameter of 4 inches at an exit point not less than 69 feet above ground level. | <p>D. McGeen took three readings with a handheld Nikon Forestry Pro II laser rangefinder, which indicated the following for flare height:</p> <ul style="list-style-type: none"> • 56.1 feet • 60.0 feet • 58.6 feet <p>Even with the variability of the handheld readings, the flare appeared to be approximately 10 feet shorter than the required minimum height.</p> | No |

Post-inspection follow-up:

On 12/13/2023, OGMD inspector E. Atkinson advised that the VRU at the tank battery failed to operate properly on at least 3 occasions in 2023. Approximate dates were given as:

- 8/8/2023
- 8/17/2023
- 11/10-11/2023

OGMD has indicated that they will advise AQD of any VRU failures in the future.

Because of the VRU failures in 2023, D. McGeen reexamined the Tuscola Energy Malfunction Abatement Plan (MAP), which applies to both the Richfield Tank Battery, B7394 and the Richfield Gas Plant, B5462. The MAP addresses the flare for each site, but not the tank battery's VRU. In the pending VN for violations related to the tank battery's flare, AQD will include a request to the company to revise the MAP to include the VRU for the tank battery.

Compliance concerns:

The following compliance concerns have been identified:

- SC 11 of PTI 205-76E states, *Applicant shall not operate this facility unless all storage tanks are vented to a vapor recovery unit.* However, the VRU has failed to operate properly on 3 occasions in 2023, as indicated by OGMD's E. Atkinson. Although these incidents were not witnessed by AQD staff, such failures could potentially violate SC 11, as well as MAPC Rule 910, which requires that an air-cleaning device be installed, maintained, and operated properly. The pending VN for flare-related violations will include a request to add the VRU to the MAP.
- The flare's pilot flame was not continuously lit, as required by SC 14 of PTI 205-76E. Furthermore, it had reportedly not been lit in the months that E. Blake has been working for Tuscola Energy. This is a violation of SC 14.
- The company's MAP mentions the tank battery flare as being operated and monitored daily. Not operating the flare is inconsistent with the MAP.
- The flare stack, which is required by SC 16 of PTI 205-76E to be a minimum 69 feet in height, was found to be around 56-60 feet in height, as determined by three different readings with a handheld laser range finder. Even with the variability of these readings, the flare was approximately 10 feet too short. This is a violation of SC 16.

Conclusion:

Two instances of noncompliance were identified, for the site's flare not being continuously lit as required by PTI 205-76E, and for the flare stack being about 10 feet shorter than the required minimum height of 69 feet above ground level. Also, the MAP does not reference the VRU, which has had 3 failures to operate in 2023, per OGMD. A VN will be sent for the flare-related violations, and it will request that the company amend the MAP to include the VRU.

NAME DATE 12/14/2023SUPERVISOR RB