

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

B546242573

| | | |
|--|--------------------------------------|----------------------------------|
| FACILITY: Breitburn Operating L.P. - Rich Field Gas Plant | | SRN / ID: B5462 |
| LOCATION: 7770 McTaggart Rd, NORTH BRANCH | | DISTRICT: Lansing |
| CITY: NORTH BRANCH | | COUNTY: LAPEER |
| CONTACT: Ken Bodmer , Foreman | | ACTIVITY DATE: 11/15/2017 |
| STAFF: Michelle Luplow | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR |
| SUBJECT: Scheduled, announced partial compliance evaluation inspection conducted as part of a full compliance evaluation. | | |
| RESOLVED COMPLAINTS: | | |

Inspected by: Michelle Luplow (author) and Shaun Lehman (Inspector, Oil, Gas and Minerals Division)

Personnel Present: Ken Bodmer (Kenneth.bodmer@breitburn.com), Foreman/Manager
Dwayne Donnelly, Plant Operator

Other Personnel: Carolann Knapp (carolann.knapp@breitburn.com)
Michael Fairbanks, Regional VP (Michael.fairbanks@breitburn.com)

Purpose

Conduct an announced, scheduled, partial compliance evaluation (PCE) inspection of Breitburn Operating LP Rich Field Gas Plant site. Compliance was determined with Breitburn's Renewable Operating Permit, MI-ROP-B5462-2014b. This activity was done as part of a full compliance evaluation (FCE).

Facility Background/Regulatory Overview

Breitburn Rich Field is a natural gas sweetening facility. Prior to December 2015, the sour gas produced from Breitburn's tank battery (B7394), located on Mowatt Rd in North Branch, was sent through lines directly to this site to be sweetened via H₂S removal (amine treatment). From the end of December 2015, through the present date, Breitburn has been sending all gas from the Mowatt Rd site directly to the Rich Field sweetening facility's flare to be burned. They are a major source of the criteria air pollutant, SO₂.

In the 2014 ROP Renewal, EUDEHYDRATOR (glycol dehydration unit), EUCOMP-ENG (natural gas-fired compressor engine), EUCOMP-BACKUP (natural gas-fired back-up engine to EUCOMP-ENG), and EUEMERGENCY-GEN (propane-fired emergency generator) were added to the ROP. These pieces of equipment were exclusively used for sweetening the gas. K. Bodmer said as of December 29, 2015 gas is no longer sent to the compressor, amine, or acid injection buildings, and therefore these pieces of equipment are no longer being used. K. Bodmer mentioned that Breitburn is tentatively considering stimulating the wells they have to increase production, which has also lead to discussions of replacing the current amine treatment plant with a new one. I explained to K. Bodmer and will send an email to Carolann Knapp reminding them to ensure that the tentative change of the amine plant is exempt from a permit to install, and if it is not, to apply for a new PTI for the new installation, prior to the equipment being installed.

All equipment still located at the plant will remain in the ROP until they have been rendered permanently inoperable or removed from the site.

Inspection

After meeting with K. Bodmer and Dwayne Donnelly and conducting an inspection of the Breitburn tank battery located on Mowatt Road (B7394) at 9 a.m. on November 15, 2017, S. Lehman and I proceeded to conduct an inspection of Breitburn's gas sweetening plant, accompanied by K. Bodmer and D. Donnelly. I provided K. Bodmer with the January 2017 Permit to Install Exemptions Handbook and explained to him that the items listed in these books, pending Rule 278 and Rule 278a, are not required to obtain air permits. There were no detectable H₂S odors while onsite.

EUGAS-TREATING

All gas is sent directly to the flare and burned. It is no longer treated for H₂S. K. Bodmer said that they are flaring the gas 24 hours per day, seven days per week. D. Donnelly explained that the gas comes into the sweetening plant through one line from the well field (Mowatt Rd site) where they currently have 14 active wells (includes both producing and shut-in wells). The gas is sent to a water knockout device before entering the old NaSH building where there is a digital and paper recorder readout system that records the instantaneous gas flow and the previous day's gas flow in mcf, which is all sent to the flare.

Emission Limits

Sulfur dioxide emissions are limited to 2,227 lb/day from the flare. Breitburn is required to submit monthly reports on SO₂ daily emissions from the flare. AQD has reviewed these monthly reports as they come in, which indicate that Breitburn has remained in compliance with these emission limits on a daily basis through October 2017 (most recent monthly report). Attached is a copy of the October 2017 report. On average, Breitburn emits approximately 36,000 lbs of SO₂ per month.

Breitburn is in compliance with the emission limit at this time.

Material Limits

There are currently no Materials Limits at this time.

Process/Operational Restrictions

The permit requires that all waste gas be burned in the flare, injected back into productive formation or have equivalent control of H₂S and mercaptans. All inlet sour gas is sent to the flare (combusted 24 hours per day, 7 days per week). Breitburn is in compliance with this condition.

Conditions 2 and 3 require that a pilot flame be burning continuously, fueled only by sweet natural gas, and that a system to continuously monitor the flare pilot flame is installed and will shut in the wells if the flare goes out. The flare was burning sour gas during the inspection. K. Bodmer and D. Donnelly explained during the 2016 inspection, that they conducted maintenance on the flare in June 2016, installing a new thermocouple, and a new crown for the flame. D. Donnelly explained that anytime the process gas is cut off from the flare, including the period of time when the maintenance was being conducted, a pilot flame is lit that only burns sweet natural gas. Any sweet natural gas that is burned at this site is what K. Bodmer explained as "buy-back" from Southeastern, who supplies natural gas to the surrounding community as well. A continuous monitor digital display is used to monitor the operation of the flare. The flare was running at ~1080°F during the 2016 inspection, and was running at ~521°F during this inspection. D. Donnelly explained that when the temperature drops to 500°F or less, an alarm goes off and the plant is automatically shut down. The gas lines will open up again when the temperature for the flare reaches 600°F. D. Donnelly explained that when they lose power, their emergency, ESD, system shuts the valves on the gas lines to prevent sour gas from entering the plant. I will work with Breitburn staff to determine if 500°F is a proper combustion temperature for the H₂S. Currently the conversion calculation from H₂S to SO₂ assumes 100% combustion.

Breitburn is also required under condition 4 to have H₂S sensors installed in every building housing the sweetening process and a visual alarm should be triggered when the H₂S concentration is at or about 50 ppm. They are also required to have the sensors automatically begin shutdown of the process inflow gas streams if the H₂S concentration is over 100 ppm (condition 5). K. Bodmer said that there are 4 main sweetening process buildings and each one has an H₂S monitor, this includes: 1 in the sweetening process building, 1 in the injection building, and 1 in the compressor building. We verified that there was one in compressor engine building during the 2014 inspection. K. Bodmer said the alarm is triggered at 20 ppm – their "low alarm" with a light, and the wells are shut in at 100 ppm "high alarm." Gas no longer enters these buildings, as the sweetening process is no longer conducted.

Condition 7 requires that a maintenance program be implemented, designed to prevent or mitigate odorous emissions from the storage tanks, vents, and all potential emission points at the source, and approved by the district supervisor. The plan is not required to be written. Per previous inspections conducted by Ken Terry, Breitburn's daily log book entries, which record information about the status of the plant, has been considered an acceptable maintenance program. Additionally, although not written, K. Bodmer explained that they do a visual walkthrough of the plant every morning and up to 3-4 times per day. The walkthroughs include walking through every building to check for leaks, odors, etc to ensure all potential sources of odors are addressed. During these walkthroughs, if they detect odors, they identify where the leak is coming from and have procedures in place to fix those leaks. This is the procedure they conducted during the January 20, 2016 incident where they discovered a pinhole leak in the gas line.

Breitburn is in compliance with all Process/Operational Restrictions at this time.

Design/Equipment Parameters

There are currently no Design/Equipment Parameters at this time.

Testing/Sampling

There are currently no Testing/Sampling requirements at this time.

Monitoring/Recordkeeping

Breitburn is required to measure and record the concentration of H₂S in the gas stream to the flare at least once per hour via gas chromatograph and continuously measure and record the volumetric gas flow rate of the gas to the flare. The hourly H₂S concentrations are required to be averaged over a 24-hour period in order to calculate the 24-hour average SO₂ emissions.

D. Donnelly explained that the gas chromatograph, which provides a real-time computer readout of the percent H₂S concentration, takes a reading every 15-17 minutes. The computer then calculates daily averages from these 15-minute readings. Additionally, the volumetric flow rate is recorded on a continuous basis via a circular analog chart, and is also continuously monitored via digital readout. The instantaneous digital volumetric flow rate I recorded during the inspection was

117 mcf (77.0 mcf in 2016), and the average daily volumetric flow rate from the previous day (11/14/17) was 110.3 mcf (was 67.3 mcf 7/26/16). The volumetric flow rate meters/recorder are in the NaSH building, while the H₂S monitoring/recording occurs in the office. I recorded

Breitburn is required to use the gas chromatograph at all times to determine H₂S concentration in the gas stream, except in the event of maintenance, repair, or venting of flash gas to the flare. During these instances, an alternative stain-tube method can be used for H₂S determination. When using the stain tubes (Drager tubes) Breitburn must document the reason Drager tubes were used and the length of time they were used. K. Bodmer said they use Drager tubes to determine the H₂S concentration when the GC is down for maintenance, etc. He said during these times, they check the H₂S concentration twice per day, but also use Drager tubes to check the H₂S in the gas just after the power has gone out, to get one final reading on the gas while the wells are being shut in. Within the monthly reports for July 2016 through October 2017, Breitburn reported using the Drager tubes for H₂S concentration determinations for periods during the month of August 2016 (for maintenance of the gas chromatograph) and January 4th and 5th 2017 (GC froze up).

Breitburn is in compliance with all Monitoring/Recordkeeping requirements at this time.

Reporting

Reporting of the H₂S concentration monitoring data measured and recorded is required to be provided within 30 days following the end of the month which the data was collected. Breitburn is up-to-date with their monthly reporting; these reports are reviewed on a monthly basis and each report demonstrated compliance with the daily SO₂ emission limit. Volumetric flow rate into the plant and H₂S vol% is reported on a daily basis.

Annual and semi-annual reports are also required to be submitted. See the FCE summary report for complete details on each submission for the past year.

Breitburn is in compliance with all reporting requirements at this time.

Other Requirements

Breitburn is required to have fencing, warning signs or other deterrents to prevent unauthorized individuals from entering the site, in addition to posting at least one sign on each side of the property reading "Danger – Poison Gas." There are several "Danger – Poison Gas" signs located at the entrance of the facility (west side) on the fencing as well as on all sides of the fencing, with multiple signs posted for each side. Fencing encompasses the entire perimeter of the property. They also meet the requirement to have an emergency contact sign stating the emergency phone number for the facility manager, local and state police, and ambulance service. This sign is located at the entrance of the facility.

An emergency procedures plan is also required per Breitburn's ROP. Carolann Knapp, Breitburn's Regional EH&S representative, since being made aware that the plan should be updated with the most up-to-date emergency contact information, etc, has submitted an initial Emergency Response Plan to the AQD on June 1, 2015 and an updated copy of the plan on August 18, 2016. On August 23, 2017 we received updated pages from Breitburn to include in the 8/18/16 copy. I will request that Breitburn submit a complete updated copy to the AQD at their earliest convenience. The emergency procedures plan includes emergency procedures for all Breitburn facilities across the nation; Michigan has its own section for counties containing Breitburn facilities. The first page of the Michigan section provides a 24-hour emergency phone number as well as office and home phone numbers of various Breitburn representatives, many of which are based in the Gaylord office, as well as K. Bodmer's contact information; Lapeer location has its own section, which includes contact information for the LEPC, and local fire and police departments, medical services, and spill response contractors. The 24-hour emergency phone number is supposed to be provided to residents in the area to call when they smell H₂S odors. The plan also includes a list of residents in the area and their phone numbers in case of an emergency or an evacuation needs to occur. This emergency response plan is the same plan that is used to meet the Oil, Gas and Minerals Division (OGMD) requirements for an H₂S Contingency Emergency Plan.

Breitburn is also required to have appropriate local emergency personnel review the emergency procedures plan prior to June 1 of each year. The AQD received a letter on June 1, 2016 dated May 25, 2016 acknowledging that on May 24, 2016 K. Bodmer and Ken Jensen of the North Branch/Burlington Township Fire Department discussed the evacuation plan and informed K. Jensen of the plans to shut down the sweetening side of the gas plant. Although we did not receive a letter for the 2017 annual review of the emergency procedures review, K. Bodmer kept a record of this, which I reviewed onsite. He documented that on 5/24/17 the North Branch Fire Department came out to review the plan. Six fire department officers were present for this review.

Breitburn is also required to report abnormal H₂S gas releases to the PEAS hotline (after hours), and to me directly if during normal business hours. K. Bodmer said that he has been reporting this to Shaun Lehman, but I reminded him that per the ROP he must also let me know of the abnormal H₂S gas releases so that I am aware of the situation before a complaint comes in. He acknowledged that he understood. All complaints, per a MOU between AQD and OOGM, that are related to the sweetening facility must go to AQD. I am aware of only a handful of complaints that S. Lehman has received in the past year.

Breitburn is in compliance with the *Other Requirements* section at this time.

Compliance Statement: Breitburn is in compliance with MI-ROP-B5462-2014b at this time.

NAME Mullin-Lynn

DATE 12/14/17

SUPERVISOR B. M.