

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

FCE Summary Report

Facility : Linn Operating, LLC - South Chester CPF	SRN : N6156
Location : NE4 NE4 NE4 SEC 1, T29N-R2W	District : Gaylord
	County : OTSEGO
City : CHESTER TWP State: MI Zip Code : 49735	Compliance Status : Compliance
Source Class : SM OPT OUT	Staff : Sharon LeBlanc
FCE Begin Date : 10/24/2016	FCE Completion Date : 11/30/2017
Comments : Fiscal year 2018, Scheduled site inspection of Linn Operating LLC site in Otsego County.	

List of Partial Compliance Evaluations :

Activity Date	Activity Type	Compliance Status	Comments
10/31/2017	Scheduled Inspection	Compliance	scheduled site inspection for fiscal year 2018. Facility has been requested to provide recent hydrogen sulfide data for gas stream.
02/02/2017	MAERS	Compliance	2016 MAERS, See MAERS for any review comments

Name: Sharon LeBlanc **Date:** 11/30/17 **Supervisor:** SN

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

N615642487

FACILITY: Linn Operating, LLC - South Chester CPF		SRN / ID: N6156
LOCATION: NE4 NE4 NE4 SEC 1, T29N-R2W, CHESTER TWP		DISTRICT: Gaylord
CITY: CHESTER TWP		COUNTY: OTSEGO
CONTACT: Diane Lundin , Senior EHS Representative		ACTIVITY DATE: 10/31/2017
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: scheduled site inspection for fiscal year 2018. Facility has been requested to provide recent hydrogen sulfide data for gas stream.		
RESOLVED COMPLAINTS:		

On Tuesday, October 31, 2017, AQD District Staff mobilized to the Linn Operating LLC – South Chester CPF (N6156), located in NE ¼, NE ¼, NE ¼, Section 1, T29N – R 2W, Chester Township, Otsego County, Michigan to conduct a scheduled compliance inspection of the facility. The referenced facility presently operates under Permit to Install No. 715-96. The most recent site inspection activities were conducted on June 19, 2013. A records request was made electronically on November 2, 2017.

FACILITY

The referenced facility is a gated, un-fenced and unmanned CPF station operated by the Linn Operating LLC (AKA Linn). The referenced facility has historically been operated by Dominion Midwest Energy (effective 1997), High Mount Midwest Energy LLC. The station is reported to service Antrim Formation wells in the area. Activities onsite include separation of gas and brine from the incoming gas stream and compression of the gas in the lines.

The Facility is located just south of the intersection of Gingell road and Bass Lake trail. To reach the facility, District Staff traveled south from the intersection of Gingell Road and M-32 on Gingell road. There is a gate and a sign at the entrance of the drive. There are two CPF stations at the location. The one closest to the road (eastern most of the two) is operated by Terra Energy.

REGULATORY

Permitting -The referenced facility operates under Permit to Install (PTI) No. 715-96, which was issued in 1996 to the Facility which was operated by Wolverine Environmental Production, Inc. The PTI was issued as an opt-out permit, but not a Rule 201 permit and was issued around the same time as other Michigan Oil and Gas Association (MOGA) permits that did not undergo 201 reviews. The PTI conditions were generic and refer to the stationary source as a whole rather than conditions that address individual pieces of equipment.

At the time of permitting the facility consisted of one Ajax Natural Gas (NG) fired compressor and one glycol dehydration unit with reboiler and was reported to have the potential to emit over 100 tons of NOx. The referenced permit limits the emissions to 89 tons per year for NOx, CO and VOCs.

Though not identified in the permit, the facility may be subject to Federal Regulation. Subparts frequently associated with oil and gas facilities are identified below. Note however, that compliance with these subparts has not been determined as part of this inspection.

Federal Regulations - The referenced facility does not process or store petroleum liquids, nor store them onsite and is therefore appears to not be subject to 40 CFR Part 60 (New Source Performance Standards AKA NSPS) Subparts;

- K, Ka or Kb (Storage vessels for Petroleum Liquids);
- KKK (Equipment Leaks of VOC from onshore NG Processing Plants);
- VV (Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry);

In addition, the existing engine(s) have install dates which may make them subject to NSPS Subparts IIII and JJJJ for Compression Ignition (CI) RICE and Spark Ignition (SI) RICE, respectively.

Subpart OOOO would apply to onshore affected facilities that are constructed, modified or reconstructed after August 23, 2011. Based on available information it appears that the referenced subpart is not applicable at this time but that future changes may be subject to the referenced subpart.

With respect to 40 CFR Part 63 (Maximum Achievable Control Technology Standards) the following Subparts may apply:

- Subpart HH (HAPS from Oil and NG Production Facilities)
- Subpart ZZZZ (RICE)

With respect to Subpart HH, the affected unit is believed to be the dehy unit. The files contain a January 18, 2016 evaluation of Linn facilities with respect to Antrim gas dehydrators. The document reported that the South Chester Facility have natural gas flows of less than 3 MMcf/day and are exempt from emission control requirements under the subpart

With respect to Subpart ZZZZ, District files contain a copy of an October 18, 2013, renofication submitted by Linn to EPA Region V. The referenced document identifies the facility as an area source of Hazardous Air Pollutants (HAPs), and the existing engine is reported to be remote.

EQUIPMENT

At the time of the October 31, 2017, site visit AQD Staff identified one compressor (no catalytic converter), one glycol dehydrator with reboiler, one brine tank and one brine tank with lined-secondary containment were present onsite. Each of the referenced pieces of equipment are housed separately. No visible emissions were noted onsite, though a heat shimmer was present from the Cat 3512 exhaust (located on the ground).

A review of District Files and MAERs records indicates the following equipment having been associated with the facility.

EQUIPMENT	DESCRIPTION	INSTALL DATE	DISMANTLE DATE	OTHER
Engine	Ajax	UNK	Post 12/2003	"6/3/89" on permit application
Engine	Cat 3306 TA	11/20/2004 per MAERs	10/2017	Inactive as of June 2016, relocated to Linn clear lake facility.
Engine	Cat 3512 LE	1/3/2006		Maers had install date of 2006, Company indicated of 4/2000.
Dehydrator (AKA dehy)	DEHYStill -Antrim 40/15 pump	6/3/1989	NA	

Compressor Engine, Cat 3512, installed January 1, 2006

DATE	ENGINE	RPMS	SOURCE
10/31/2017	Cat 3512	960	Inspector/Onsite Daily Log
9/1/2017	Cat 3512	968	Operator Log Sheet
5/26/2017	Cat 3512	886	Operator Log Sheet
3/22/2017	Cat 3512	1007	Operator Log Sheet

The brine generated appears to be disposed of in one disposal well located to the west of the tanks. Chemical storage tanks were noted at several locations, but all appeared to be tidy, labeled and properly maintained.

COMPLIANCE

MACES- Activity Report

At the time of the October 31, 2017, site visit, no visible emissions were noted to be coming from onsite stacks, nor were any odors noted. Liquids had collected in the secondary containment of the brine and sloop tanks, some of which would have been the result of recent melted snows, which had also resulted in standing water at points on site and in the drive.

MAERS- Reporting of actual emissions for CO, NOx, VOCs and HAPs is required under special condition 18 of the permit. A review of the most recent MAERS submittal for the facility (received on February 1, 2017 for emissions associated with the calendar year 2016) included emissions for two engines and one glycol dehydrator onsite.

Permit Conditions -Special conditions associated with Permit No. 715-96 are limited to record keeping, reporting and emission limits. Emission limits for the facility are defined in special conditions 13 and 14. These two conditions limit CO, VOC and NOx emissions to 89 tons/year for each referenced parameter as well as individual HAPs to below 9 tons/year and total HAPs to below 22.5 tons/year.

Calculation of actual emissions on a monthly and 12-month rolling total for CO, NOx, VOC and HAPs are required under special condition 15. The PTI specifies that emissions will be determined using emission factors from Appendix A. It should be noted that with the exception of HAPs, which Appendix A does not list for Antrim units.

NOx and CO annual emissions are determined using manufacturer data. Except for NOx, CO and VOC engine emissions were calculated using EPA emission factors. Emission Limits for NOx, CO and VOC are 89 tpy each. Total emissions in tons per year (tpy) reported for the calendar years since the last site inspection were:

CALENDAR YEAR	NOX (tpy)	CO (tpy)	VOC (tpy)	HAPs (tpy)
2016	18.35**	7.66	2.19	0.948*
2015	36.45	9.32	2.47	1.03*
2014	37.93	9.75	2.60	1.08*
2013	35.3	10.16	2.76	1.14 *

*Reflects AQD calculated formaldehyde emissions

** Reflects an approximately 64% reduction in Cat 3306 thruput for calendar year as reported in MAERs.

Data from random spreadsheets provided by Linn reported the following:

12-month Rolling Time Period Ending	NOX (tpy)	CO (tpy)	VOC (tpy)	HAPs (tpy)
October 2015	36.42	9.40	2.49	-
January 2016	36.18	9.26	2.45	-
September 2017	8.59	6.87	2.06	-
LIMIT	89	89	89	9

Special condition No. 16 and/or 17 require monthly records of:

- Fuel consumption, in million cubic feet (MMcf)
- Crude/condensate throughput to the tank in barrels (bbls)
- Hydrocarbon liquid trucked offsite (bbls), and
- Oil and gas processed onsite

Upon district request and in compliance with permit requirements Linn provided the applicable requested records. As previously noted the facility does not produce or process liquid hydrocarbons onsite. Fuel consumption and other equipment operational data provided in response to the request

indicated consistent operation of the equipment overtime, and with operational data recorded during the October 31, 2017, site visit.

Special condition 19 requires the owner or operator of the source to conduct all necessary maintenance and make all necessary attempt to keep all components of the process equipment in proper working order and maintain a log of significant maintenance activities and all repairs made to the equipment. Per request, the Linn provided copies of maintenance reports for the NG compressors and associated engines conducted by Natural Gas Compression Systems. The company provided contracted engine maintenance services.

Special condition 20 applies to crude oil or condensate storage tanks greater than or equal to 952 barrels, and the liquid having a true vapor pressure of greater than 1.5 psia. This condition is not applicable as the facility does not store crude or condensate onsite.

Special condition 21 applies to malfunction of a pollution control device and limits bypass of the control device for a period not to exceed 48 hours per event nor a total of 144 hours per calendar year. The facility does not have pollution control devices associated with onsite equipment.

Special condition 22 requires the owner or operator of an oil-gas facility constructed on or after January 20, 1984 to determine if they are subject to Federal standards in 40 CFR, Part 60, Subpart KKK. No hydrocarbon liquids are reported to be produced at the facility, so the facility is reported not to be subject to the referenced Subpart.

Special condition 23 refers to requirements associated with verification stack testing for CO, VOC, NOx or HAP. No request for verification testing was found in District Files, so the condition in not applicable at the time of the report preparation.

Special condition 24 requires the facility to only process sweet gas as defined in Rule 119. Linn provided copes of hydrogen sulfide analysis dated September 30, 2011. The data reported that the hydrogen sulfide contents of the sample from the dehy inlet was below the 1 ppm detection limit. A more recent analysis was been requested of the facility, who responded verbally on November 30, 2017, that dragger tubes reported non-detect concentrations of H2S.

During discussions regarding sampling, Linn staff indicated that the company has a program for annual sampling at the individual wells, but not at the CPFs. This program helps the company monitor and identify H2S in the gas stream. Linn has indicated that they will be evaluating the program to better address permit requirements.

SUMMARY

On Tuesday, October 31, 2017, AQD District Staff mobilized to the Linn Operating LLC – South Chester CPF (N6156), located in NE ¼, NE ¼, NE ¼, Section 1, T29N – R 2W, Chester Township, Otsego County, Michigan to conduct a scheduled compliance inspection of the facility. The referenced facility presently operates under Permit to Install No. 715-96. The most recent site inspection activities were conducted on June 19, 2013.

A records request was made electronically on November 2, 2017. Records were provided electronically by Linn on November 14, 2017. Additional information was provided by Linn on November 14, 2017. Based on the information reviewed, and observations made the facility appears to be in general compliance with their permit.

NAME Sharon LeBlanc

DATE 11/30/2017

SUPERVISOR SN