DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

FCE Summary Report

Facility :	LINN OPERATING, INC	**SRN :**	P0775
Location :	NW NW NE 1/4 SEC 2, T27N, R8E HAWES Twp. Near Miller and Taylor Roads	**District :**	Gaylord
		County :	ALCONA
City :	HAWES TWP **State:** MI **Zip Code :** 48742	**Compliance Status :**	Non Compliance
Source Class :	SM OPT OUT	**Staff :**	Sharon LeBlanc
FCE Begin Date :	11/1/2016	**FCE Completion Date :**	12/18/2017
Comments :	Newly permitted facility. Non-compliance consisted of failure to send required notification of engine change out under VII.2.		

List of Partial Compliance Evaluations :

Activity Date	Activity Type	Compliance Status	Comments
12/18/2017	Scheduled Inspection	Non Compliance	Scheduled site inspection for 2018 fiscal year. Facility was permitted earlier in 2017 when engine change out activities were scheduled. Non-compliance was limited to failure to submit notification of engine change-out under VII.2. sgl
12/07/2017	Malfunction Abatement Plan	Compliance	MAP document is required (EUENGINE1 condition III.1) to be submitted no later than 60 days of approval of PTI (2/22/2017). Document had been input into MACES as received, however, no copy was found in District Files - a supplemental copy was provided by Linn Staff electronically on December 4, 2017. Document meets minimum requirements as outlined in PTI 203-16. Approval letter to be issued no later than the week of 12/11/2017. sgl

Name: Sharon LeBlanc **Date:** 12/20/17 **Supervisor:** SN

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

P077542631

FACILITY: LINN OPERATING, INC		**SRN / ID:** P0775
LOCATION: NW NW NE 1/4 SEC 2, T27N, R8E HAWES Twp., HAWES TWP		**DISTRICT:** Gaylord
CITY: HAWES TWP		**COUNTY:** ALCONA
CONTACT: Diane Lunden , EHS Advisor		**ACTIVITY DATE:** 12/18/2017
STAFF: Sharon LeBlanc	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Scheduled site inspection for 2018 fiscal year. Facility was permitted earlier in 2017 when engine change out activities were scheduled. Non-compliance was limited to failure to submit notification of engine change-out under VII.2. sgl		
RESOLVED COMPLAINTS:		

On Monday, December 18, 2017, AQD District Staff mobilized to the Linn Operating LLC – Gaishin Booster (P0775) located in NW ¼, NW ¼, NE ¼ of Section 2, T27N, R8E of Hawes Township, Alcona County, Lincoln, Michigan to conduct a scheduled, compliance inspection of the facility. The referenced facility presently operates under Permit to Install No. 203-16, which was approved on February 24, 2017.

No previous site inspections are of record for this facility. A records request was made electronically on December 11, 2017.

FACILITY

The referenced facility is a fenced and unmanned CPF station operated by Linn and is in the NW ¼, NW ¼, NE ¼ of Section 2, T27N, R8E of Hawes Township, Alcona County, Lincoln, Michigan. Activities onsite include compression of the incoming Antrim and Niagaran gas streams for transport via production lines to the Hubbard Lake Production Facility for further processing.

The compressor engine, a Cat 3406 TA, is the primary emission source onsite. A review of the permit application did not identify a glycol dehydrator or other emission source onsite. Google Earth aerials for the site clearly show the presence of two vertical, Above-ground Storage Tanks (ASTs) within a lined secondary containment area. The referenced tanks are brine and slop tank, the associated separator is located in the compressor building. A review of historical aerials using Google Earth indicated that the facility with respect to the present buildings and tanks was in place as far back as June 2011.

To reach the facility Staff traveled east on M-72 from the intersection of M-65 and M-72 approximately 11 miles, then north (left) on North Hubbard Lake Road. Continue north on North Hubbard Lake Road approximately 5 miles to Miller Road. Turn right (east) on Miller Road and travel approximately 1.5 miles to the access road to the booster station. The access road is located on the south side of the road. There is a sign and gate at the entrance. The gate was locked at the time of the site visit, resulting in AQD staff walking the short distance to the site.

Weather conditions at the time of the inspection consisted of heavily overcast skies and temperatures in the low 30's. Little to no winds were noted at the time of the inspection.

REGULATORY

Permitting -The referenced facility operates under Permit to Install (PTI) No. 203-16, issued on February 22, 2017. The referenced permit allowed Linn to replace the existing booster engine (3408 TA LE) with a Cat 3406 TA Reciprocating Internal Combustion Engine (RICE). The engine existing at the time of the permit application was reported to be exempt from permitting based on <10 million BTU/hr and emissions below threshold levels.

The facility is identified as a true minor source based on the potential to emit (PTE) for the Cat 3406 TA compressor engine located at the site. However, based on permit condition VII.1 which limits replacement under the existing permit of the existing engine with an equivalent or lower-emitting unit, the facility is considered a synthetic minor.

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 Cat 3406 TA engine permitted for the site was verified at the time of permitting to have a manufacture date prior to January 1, 2008, which would make it not subject to NSPS Subparts JJJJ for Spark Ignition (SI) RICE.

Subpart OOOO would apply to onshore affected facilities that are constructed, modified or reconstructed after August 23, 2011. Based on available information (permit application) the facility is not subject to OOOO or OOOOa, as overall horsepower at the site was reduced from 425 HP to 325 HP.

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)
- Supbart ZZZZ (RICE)

With respect to Subpart HH, no affected units are identified onsite, and therefore is not subject to the subpart.

With respect to Subpart ZZZZ, the facility has indicated that it is subject to the subpart as an area source, and will be subject to Subpart ZZZZ maintenance plan requirements for engines less than or equal to 500 HP. AQD at the time of report preparation does not have delegation for the referenced subpart.

EQUIPMENT

At the time of the December 18, 2017, site visit AQD Staff identified one compressor engine, one 400-gallon filter/separator, and two vertical ASTs (one each for brine or slop) within a lined-secondary containment onsite. The compressor is housed in the main building onsite, with a few smaller tanks containing liquids for equipment operation and the filter separator. The building floor was gravel, but no signs of spillage were noted.

PTI 203-16 identifies one RICE onsite, EUENGINE1 is described as one Natural Gas (NG)-fired reciprocating engine. No catalyst/pollution control device is associated with the engine. Engine maintenance activities appear to be contracted to Archrock. An Archrock field records form was found on a clipboard onsite next to the compressor.

ENGINE	INFO	INSTALL DATE	REMOVAL DATE	COMMENT
Cat 3408 TALE	425 Hp		November 2016	Replaced by EUENGINE1
CAT 3406 TA (AKA EUENGINE1)	325 HP SN S489407	November 2016		Permitted Engine (PTI 203-16)

A review of the onsite log sheet onsite indicated that visits are not conducted daily. The existing log sheet spanned the period from September 5, 2017 through December 4, 2017, and documented 12 visits to the site. Engine RPMS reported for those visits ranged between 1702 -1799. The RPMs at the time of the site visit was reported to be 1789. The log sheet reported that the compressor oil was changed out

on November 30, 2017. No visible leaks, or unusual noises were noted at the time of the site visit that would indicate operational issues.

Additional Archrock maintenance sheets provided by the Facility included scheduled compressor maintenance activities for the period of December 30, 2016 through October 10, 2017. The referenced documentation included oil and filter changes as well as spark plug and belt inspections. The referenced activities appear to be consistent with the PMMAP and Quad ZZZZ requirements as identified by the facility.

COMPLIANCE

No complaints are of record for the facility. No compliance issues were of record at the time of the site inspection. At the time of the December 18, 2017, site visit, no visible emissions were noted to be coming from the onsite stack.

MAERS- Reporting of actual emissions for CO, NOx, VOCs and HAPs is required under general condition of the permit. Prior to the 2018 submittal for the 2017 calendar year, the facility is not of record as having been previously required to report annual emissions

Permit Conditions - Upon arrival, District Staff noted that no visible emissions were coming from any of the operating engine onsite, General Condition 11, limits VEs to a 6-minute average of 20 percent opacity. Based on the lack of visible emissions noted at the time of the site visit, the facility appears to be in general compliance with the permit condition.

Emission limits associated with EUENGINE1 include 12-month rolling total emissions for CO (5.02 tpy) and NOx (67.41 tpy) are summarized as Special Condition EUENGINE1 I.1 and I.2, respectively. The emission limits are based on a NG usage of 20.9 million cubic feet over a 12-month rolling time period. NOx and CO emissions reported by the facility for the referenced unit are presented below:

DATE (end of 12-month rolling time period)	NOx (tpy)	CO (tpy)	Data Source
November 2017	44.38	3.30	Records provided by Facility
Limit (tpy)	67.41	5.02	

Condition IV.1 requires the installation, calibration, maintenance and operation of a device to monitor the NG usage for EUENGINE1 on a continuous basis. The condition VI.1 requires that the facility monitors the NG usage for EUENGINE1 on a continuous basis and recorded the NG usage for EUENGINE1 on a monthly basis. Monthly fuel gas usage for the period of November 16 through November 2017 ranged from 0.4 MMcf/month to 1.7 MMcf/month. The referenced data is used to calculate emissions for the referenced EU per Appendix A.

Condition VI.4 & 5 requires the permittee to keep monthly and 12-month rolling CO and NOx emission calculations for EUENGINE1 as required by special conditions I.1 and I.2 and Appendix A. The required records are to be kept on file at the facility and made available to the Department upon request. A review of records provided at the request of District Staff indicated that emissions for EUENGINE1 have been in compliance with permit conditions.

Determination of emissions for each piece of equipment is based on fuel usage and the appropriate emission factors. Under EUENGINE1 IV.1, the permittee is required to install, calibrate and maintain a device to monitor the natural gas usage of the EU on a continuous basis. Monitoring of the natural gas usage for EUENGINE1 on a continuous basis and recording on a monthly basis is required under VI.2. Meters are used by the facility to continuously monitor fuel usage, and the data is reported daily on field operator log sheets, in compliance with permit conditions.

EUENGINE1 condition III.1 requires submittal of a Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) for the facility within 60 days of permit issuance. Linn staff submitted the required document on March 17, 2017. The referenced document was approved by District Staff on December 7, 2017.

Condition VI.3 requires the permittee to maintain a record of all maintenance activities conducted according to the PM/MAP, and specifies that all records shall be on file at the facility and made available to the Department upon request. As previously noted copies of service reports for EUENGINE1 by Archrock were provided upon request. Records provided indicate general compliance with the permit condition.

Condition V.1 requires upon request of the AQD District Supervisor that the permittee verify NOx and CO emission factors used to calculate emissions for EUENGINE1 by testing at the owner's expense. No records of a request were found in the District Files, and the condition is considered not applicable at this time.

Condition VIII.1 requires a minimum stack height of 30 feet above land surface, and a maximum stack diameter of 6-inches. The existing stack associated with EUENGINE1 is approximately twice the building height, and appears to meet the permit conditions.

Written notification of construction and operation of "New Stationary Sources" under 40 CFR 60.7 are required under condition VII.2. The referenced condition requires 30-day notification to the AQD District Supervisor of construction or reconstruction of an affected facility. With the exception of the PMMAP dated March 2017 notification was not received regarding engine installation activities, and reflects non-compliance. The facility indicated that it understood the condition to be part of Federal Requirements, inadvertently left in the permit and not applicable. The error has been brought to the facility's attention. Requirements for future replacement of EUENGINE1 by the permittee are outlined in condition VII.1, and are not applicable at this time.

Condition IX.1 requires the permittee to comply with the provisions of 40 CFR Part 63, Subpart A and Subpart ZZZZ (RICE MACT) as they apply to EUENGINE1. As part of the records submitted, Linn provided copies of Archrock maintenance outlining engine service activities as required under the referenced subpart.

SUMMARY

On Monday, December 18, 2017, AQD District Staff mobilized to the Linn Operating LLC – Gaishin Booster (P0775) located in NW ¼, NW ¼, NE ¼ of Section 2, T27N, R8E of Hawes Township, Alcona County, Lincoln, Michigan to conduct a scheduled, compliance inspection of the facility. The referenced facility presently operates under Permit to Install No. 203-16, which was approved on February 24, 2017.

No previous site inspections are of record for this facility. A records request was made electronically on December 11, 2017. Records were received by District Staff on December 21, 2017, in a timely manner.

The only non-compliance issue noted as part of the compliance evaluation as failure of the facility to provide written notification of construction and operation of EUENGINE1 as required under condition VII.2. The referenced condition requires 30-day notification to the AQD District Supervisor of construction or reconstruction of an affected facility. The referenced notification would have been anticipated to have been received no later than February 2017. The PMMAP for the compressor engine was submitted March 17, 2017, and though not official notification indicated the engine change out.

NAME _____ DATE 12/20/17 SUPERVISOR _____