

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

N579838676

FACILITY: Core Energy, LLC., Chester 10 CO2 Recovery		SRN / ID: N5798
LOCATION: SW 1/4 SW 1/4 SEC 10 T29N R2W, CHESTER TWP		DISTRICT: Cadillac
CITY: CHESTER TWP		COUNTY: OTSEGO
CONTACT: Kathy Dungey , Operations and Engineering Assistant		ACTIVITY DATE: 02/15/2017
STAFF: Shane Nixon	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: On site inspection and records review		
RESOLVED COMPLAINTS:		

AQD staff traveled to the Core Energy Chester 10 CO₂ recovery facility with the intent to perform an inspection. The purpose of the inspection was to determine the facility's compliance with Permit to Install (PTI) No. 579-95D. During the inspection, AQD staff observed contractors installing a third compressor engine which will be used to inject carbon dioxide into geological formations for enhanced oil recovery.

Equipment at the site consisted of two Caterpillar Model 3608 compressor engines, one of which was equipped with an oxidation catalyst. Email correspondence with Core Energy indicates the catalyst was installed in December 2016.

Other equipment includes a dehydrator which is used to remove water from the incoming carbon dioxide stream and a generator engine (Caterpillar Model 3408). AQD calculations for the engine indicate the potential to emit of NO_x is greater than the significant threshold of 40 tons per year and is not exempt from permitting. Core Energy is in violation of Rule 201 for failing to obtain a permit to install prior to installing the generator engine.

FGENGINES

FGENGINES in PTI No. 579-95D consists of EUENGINE1, EUENGINE2, and EUENGINE3. As mentioned previously, EUENGINE3 is currently being installed. EUENGINE1 and EUENGINE2 were operating at the time of the inspection and operational parameters recorded by AQD staff during the inspection follow:

EUENGINE1

Engine operating load: 84%
Operating rate: 876 rpm
Engine oil pressure: 66.6 psi
Engine oil temperature: 181°F

EUENGINE2

Engine operating load: 84%
Operating rate: 873 rpm
Engine oil pressure: 67.4 psi
Engine oil temperature: 181°F

Emission Limits: NO_x and CO emissions from EUENGINE1 are limited to 11.42 tons per 12 month rolling time period and 11.42 tons per 12 month rolling time period, respectively. Records (attached) submitted by Core Energy indicate the NO_x and CO emissions from the engine were not in compliance with the emission limits. NO_x emissions were out of compliance from March 2016 to December 2016 and emissions ranged between 11.56 tons per 12 month rolling time period to 12.65 tons per 12 month rolling time period. CO emissions were out of compliance for the entire 2016 calendar year and emissions ranged between 36.967 tons per 12 month rolling time period and 45.32 tons per 12 month rolling time period.

NO_x and CO emissions from EUENGINE2 are limited to 10.96 tons per 12 month rolling time period and 60.75 tons per 12 month rolling time period, respectively. Records (attached) submitted by Core Energy indicate the CO emissions were in compliance with the emission limit and NO_x emissions were not in compliance with the emission limits. NO_x emissions were out of compliance from March 2016 to December 2016 and emissions ranged between 10.98 tons per 12 month rolling time period to 12.14 tons per 12 month rolling time period.

Material Limits: Natural gas usage of EUENGINE2 is limited to 131,934,000 cubic feet per year, based on a 12 month rolling time period. Records submitted by Core Energy indicate compliance with the limit since the highest gas usage occurred in December 2016. At that time, gas usage was 100,715,000 cubic feet per year, based on a 12 month rolling time period.

Process/Operational Restrictions: EUENGINE1 is not allowed to operate unless a catalyst is installed, maintained and operated in a satisfactory manner. AQD staff observed a catalyst installed on the engine at the time of the inspection.

A revised preventative maintenance/malfunction abatement plan (PM/MAP) was recently submitted to incorporate EUENGINE3. Staff reviewed the PM/MAP and determined it to be adequate.

Design/Equipment Parameters: Devices were installed on each engine to monitor and record the natural gas usage of each engine on a continuous basis.

Testing/Sampling: Testing to verify NOx and CO emissions were not required to be performed at this time. Testing will be required on EUENGINE3 within one year after of engine startup.

Monitoring/Recordkeeping: Records consisting of natural gas usage, monthly and 12 month rolling NOx and CO emission calculations, and maintenance activities were made available upon request and were determined to be complete by AQD staff.

Reporting: Any reports previously submitted were reviewed and documented by AQD staff at the time of submittal.

Stack/Vent Restrictions: The stacks associated with each engine appeared to be constructed in accordance with the parameters listed in the PTI.

Other Requirements: The engines are required to comply with all applicable provisions of 40 CFR Part 63, Subpart ZZZZ. AQD has not been delegated authority to enforce the federal regulation and a compliance determination was not performed.

FGFACILITY

The flexible group is comprised of all process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment.

Emission Limits: CO emissions are limited to 89 tons per year, based on a 12 month rolling time period. Records submitted by Core Energy indicate the facility has not exceeded the CO emission limit. Records show the highest emissions, which occurred in November 2016, were 89 tons per year, based on a 12 month rolling time period.

Material Limits: Sour gas is not allowed to be burned at the facility. The natural gas supply is from the main sales pipeline and is considered sweet.

Process/Operational Restrictions: There are no process or operational restrictions associated with this flexible group; therefore, this section is not applicable.

Design/Equipment Parameters: There are no design or equipment parameters associated with this flexible group; therefore, this section is not applicable.

Testing/Sampling: AQD staff did not request testing to verify the sulfur content or hydrogen sulfide content based upon the fact the gas is supplied from the sales/transportation pipeline.

Monitoring/Recordkeeping: Emission calculations were submitted upon request and were determined to be adequate based upon AQD staff review.

Reporting: There are no reporting requirements associated with the flexible group; therefore, this section is not applicable.

Stack/Vent Restrictions: There are no stack or vent restrictions associated with this flexible group; therefore, this section is not applicable.

Other Requirements: There are no other requirements associated with this flexible group; therefore, this section is not applicable.

Conclusion: Based upon the on-site inspection and records review, Core Energy is not complying with the emission limits contained in the PTI for EUENGINE1 and EUENGINE2. Furthermore, Core Energy did not obtain a PTI prior to installing the generator engine and is a violation of Rule 201. AQD staff will send a violation notice noting the aforementioned violations.

NAME Shane Nixon

DATE 3/8/17

SUPERVISOR _____