

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

N745735015

FACILITY: LINN Operating, Inc. -- MANCELONA 8		SRN / ID: N7457
LOCATION: MANCELONA TWP SEC 8 T29N R5W NW NE NW, MANCELONA		DISTRICT: Gaylord
CITY: MANCELONA		COUNTY: ANTRIM
CONTACT:		ACTIVITY DATE: 06/17/2016
STAFF: Bill Rogers	COMPLIANCE STATUS: Compliance	
SUBJECT: Scheduled inspection and record review for FCE		SOURCE CLASS: SM OPT OUT
RESOLVED COMPLAINTS:		

On June 17, 2016, I inspected the Mancelona 8 CPF. I also reviewed records Linn Energy had provided to make sure they were sufficient to comply with permit conditions and Federal requirements.

As noted in previous inspection reports, the facility permit allows three natural gas fired compressor engines, but there are only two on site. According to previous reports, EUENGINE3 was removed.

Permit 233-05, Special Conditions 1.1a through 1.1d, set NOx and CO emission limits for EUENGINE1 and EUENGINE2. EUENGINE1 is limited to 24.5 TPY NOx and 21.5 TPY CO. EUENGINE2 is limited to 23.0 TPY NOx and 20.7 TPY CO. According to emissions calculations, attached, EUENGINE1 emitted 13.36 tons NOx and 11.69 tons CO while EUENGINE2 emitted 13.44 tons NOx and 12.09 tons CO in the 12 month rolling time period ending April 2016. These emissions comply with the permit conditions.

Special Condition 1.2 requires a Malfunction Abatement Plan. The company submitted one. AQD approved it August 9, 2007.

Special Condition 1.3 requires that the engines should not be operated without their add on control device, if they have one, more than 200 hours per year. Both engines at this facility are lean burn engines which are not equipped with add-on control devices, so this condition is not applicable.

Special Condition 1.4 requires that add on control devices be installed and operating properly. These engines do not have add on control devices, so this condition is not applicable.

Special Condition 1.5 requires emissions tests if requested by the AQD. AQD has not requested testing, so this condition is not applicable.

Special Condition 1.6 requires a device to measure fuel gas usage to the engines. I had not found this but believed one existed since records, attached, show fuel usage for each engine. However, Todd, a Linn Employee, came by while I was on site and pointed out the fuel meter and its readout to me. I noted that it said Engine 1 used 157 MCF natural gas as fuel yesterday. This complies with the permit condition.

Special Condition 1.7 requires that compliance records required by the permit be available for each month by the last day of the following month. When I requested records for this facility, the company provided them promptly and covering time periods up to the month before I asked for them. This complies with the permit condition.

Special 1.8 requires keeping a maintenance log. This log is being kept. This complies with the permit condition. Example pages from the maintenance log are attached.

Special Condition 1.9 requires a log of hours operating the engines without add on control devices. The engines don't have add on control devices, so this condition is not applicable.

Special Condition 1.10 requires records of fuel usage. Example emissions calculation sheets, attached, include fuel consumption. This complies with the permit condition.

Special Condition 1.11 requires monthly and 12 month rolling time period NOx and CO emissions calculations. These are included on the example emission calculation sheets, attached. This complies with

the permit condition.

Conditions 1.12a and 1.12b require the stack have a maximum diameter of 16 inches and a minimum exhaust height of 36 feet above ground level. During my inspection I estimated stack heights as 36 feet, by comparing the length of their shadow with the length of my own. The stack diameter appeared to be more like 14 inches at the base of the stack, but if it was in fact less than 16 inches, the permit allows it. This complies with the permit conditions.

Conditions 2.1a and 2.1b set 12 month rolling time period NOx and CO limits of 89 tons each. Emissions estimates, attached, report 26.8 tons NOx and 23.78 tons CO in the 12 months ending April 2016. This complies with the permit limit.

Condition 2.2 requires burning only sweet gas at the facility. The facility has an iron sponge, which suggests that there is a moderate concentration of hydrogen sulfide in some of the gas coming into the facility. Previous reports state this iron sponge is on the inlet before gas goes to the facility equipment, therefore the gas is sweet before it is burned as fuel. This complies with the permit condition.

Condition 2.3 requires testing the fuel gas for hydrogen sulfide upon AQD request. AQD has not requested this test, therefore this condition is not applicable.

Condition 2.4 requires calculations for each month be available by the last day of the following calendar month. As stated above, records the company provided me were quick enough and recent enough that they show compliance with this permit condition.

Condition 2.5 requires facility-wide NOx and CO calculations. These are included on the example emission sheets, attached. This complies with the permit conditions.

In addition to permit conditions, the permittee needs to demonstrate compliance with MACT HH, 40 CFR 63.765 for glycol dehydrators. This Federal regulation requires stringent control measures on glycol dehydrators unless they can prove exemption, either by showing that gas processed is below a certain amount or by showing that benzene emissions are less than 0.90 megagrams (about one ton) per year.

The permittee has chosen to demonstrate that benzene emissions are less than one ton in order to show compliance with MACT HH. GRI GLY-CALC emissions estimates, attached, calculate about 0.05 tons per year of non-methane hydrocarbon emissions. Benzene emissions would be included in this along with other compounds, therefore benzene emissions are less than 0.05 tons per year, which is less than 1 ton per year. This is sufficient to show exemption from the more stringent control requirements of MACT HH.

Actual benzene emissions are unknown because analysis results of a gas sample from the facility, attached, indicate benzene concentrations were below the detection limit. This shows emissions are very small, although the exact number couldn't be estimated.

#### Site Inspection:

The facility has a three light safety light system. The green light was on at the time of my inspection.

The facility has an iron sponge.

I paced out the length of the shadows of the stacks in comparison to my own shadow; the proportion between the shadows is the same as that between my height and the height of the stacks. I estimated the stack as 36 feet tall, as required by permit. The stacks exhaust unobstructed vertically upward. The base of the stacks appeared to be the same diameter as the top. Compared to my notebook it appeared a few inches wider; I estimated it by eye as 14 inches. The permit says 16 inches, but that is maximum; smaller is allowed.

There are two engines remaining in the compressor shed. Both have large decals on the radiator housing reading "Compression Systems Inc- Midland Texas- Ph 915/563-1170." The east engine control panel had a label reading CSI Unit # 3953. The west engine control panel had a label reading CSI Unit # 3954.

The control panels have electronics boxes next to them labeled as Lean Burn Air/Fuel Ratio Controller. These engines, according to previous reports, are lean burn type and as such should have air to fuel ratio controllers.

The two engines were Caterpillar natural gas fired engines with no catalytic oxidizers. Both were operating. There was no opacity from their stacks. Digital readouts on the east engine reported 51858 hours, 1134 RPM, 27 volts, 55 PSI oil pressure, 190 degrees f coolant temperature. Digital readouts for the west engine reported 93503 hours, 1130 RPM, 27 volts, 59 PSI, 203 degrees f.

I didn't see a label on the dehydrator burner. The dehy burner stack was about six inches diameter and, by the length of its shadow, about 18 feet high, exhausting unobstructed vertically upward. The still vent appeared to be about 1.5 inches diameter at 16 feet above ground level, terminating in a flat cap.

The facility includes two standard 400-barrel size tanks labeled Produced Water, one smaller tank of perhaps half that volume labeled slop tank, and an unlabeled 300 gallon size drum on stilts tank, all these over the main lined berm surrounding the brine tanks. Also outside the compressor shed, two more 300 gallon size drum on stilts tanks over individual wooden berm structures, one labeled Chevron HDAX ashless engine oil and the other unlabeled; and one propane type pressure tank which could possibly be for condensate. Inside the compressor shed I saw three 300 gallon drum on stilts tanks, one labeled Chevron HDAX ashless engine oil, two labeled Chevron Regal R&O ISO 150 (oil), one tank perhaps twice that size labeled Gear Lubricant SAE 80W-90 inside a wooden berm structure; one large horizontal drum tank marked Used Oil, and one translucent tank with a scale up its side measuring to 1000, probably gallons, full of a clear liquid; perhaps engine coolant.

I did not notice any odors outside the compressor shed. There was a moderate odor I couldn't identify inside the shed. I saw no opacity from any equipment on site. Maintenance appeared good. I didn't see any leaks. I didn't see any stained soils which might indicate prior leaks or spills.

NAME William J Rogers L.

DATE 6/17/16

SUPERVISOR 

