

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

B722226910

FACILITY: JAGUAR ENERGY, FREDERIC 15 GAS PLANT		SRN / ID: B7222
LOCATION: 9038 Deward Road, FREDERIC		DISTRICT: Cadillac
CITY: FREDERIC		COUNTY: CRAWFORD
CONTACT:		ACTIVITY DATE: 07/14/2014
STAFF: Becky Radulski	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: scheduled inspection and records review		
RESOLVED COMPLAINTS:		

Traveled to B7222 Jaguar Frederic 15 Gas Sweetening Plant on Monday July 14, 2014, located at 9038 Deward Road, Frederic, Crawford County, approximately 4 miles North of Frederic. The reason for travel was to perform a scheduled site inspection to determine compliance with ROP MI-ROP-B7222-2013. I met with Operator John Ward (cell 231-342-8789) to review the ROP conditions. John has been the operator in place of previous operator Mike Hershburger since April 2014.

The MDEQ Environmental Inspection pamphlet was offered to John.

The Frederic 15 takes in natural gas, gas condensate, crude oil and brine from 2 Niagran wells south of the facility. An inline heater separates gasses and brine from the crude oil. The natural gas contains hydrogen sulfide (H₂S). To make this gas usable the gas is processed through an amine gas sweetening process, which separates out the hydrogen sulfide. The gas then runs through a glycol dehydrator to remove water vapor. The natural gas is compressed and sent off site through a pipeline. The compressor engine uses some of this natural gas for its fuel.

The H₂S is burned in an incinerator which makes sulfur dioxide (SO₂). The SO₂ is emitted through a stack to ambient air. The facility has a flare as back up to the incinerator. In the even the flare pilot (sweet natural gas) goes out, the facility shuts down.

The facility is completely fenced with a gate at the only entrance (Deward Road). Inside the fenced area is a white office building (NW corner of property) and an operations building for the compressor and equipment. Various equipment which is not physically connected to anything is stored in the yard. The miscellaneous equipment looks similar to the last inspection.

EUSWEETENING

SPECIAL CONDITIONS

I.1 and 2 - Sulfur Dioxide Emission Limits of 1332 lbs/day and 55.5 lbs/hr on 24-hr average: The SO₂ is calculated and submitted to AQD monthly with a ROP Report Certification form signed by Louis Bartz, Responsible Official. AQD reviews the records on a monthly basis.

III.1 and 2 - must maintain continuously burning pilot flame at the emergency flare and commence shut in within 60 minutes if the pilot goes out: The process involving the emergency flare was reviewed with John. In the event the flare goes out, an alarm is activated and John is immediately notified of the outage. He has 60 minutes

to reignite and maintain the pilot flame or shut-in of the wells feeding the plant will shut in.

III.3 – fuel for the emergency flare shall be only sweet natural gas: Sweet natural gas is used to fuel the flare

III.4 – Shall not burn sour gas in the process heaters or incinerator pilot burner without written approval from AQD: only sweet natural gas is used in aforementioned equipment.

III.5 – shall employ a vapor return system in the load-out of bullet tanks: Tanks and load out area were viewed during inspection. Piping is in place for vapor return system.

III.6 – All emergency relief valves, the heater treater and all storage tanks shall be vented to incinerator or flare: Equipment was viewed in field, and vented to incinerator/flare.

III.7 and 8 – Except in an emergency the facility shall not send untreated sour gas to flare or amine unit; in an emergency the facility shall shut-in the plant within one second and flare off all sour gas: The facility will shut in and flare off sour gas in event of an emergency.

III.9 – The permitte shall notify AQD in advance of new wells to the sweetening plant: No new wells have been added, none are expected in the future.

III.10 and 11 – Shall conduct continuous in-shed H₂S monitoring program; all inflow streams shall be shut off if H₂S concentration inside building is greater than 100 parts per million: The facility is monitored continuously. Monitors were viewed in plant. Red and yellow lights are installed on building. Yellow light, call to operator, and alarm at 10 ppm; Red light and shut down at 20 ppm.

III.12 – During startup acid gas feed to incinerator shall not commence until oxygen content at the combustion chamber outlet exceeds 5% and temp exceeds 1400 degrees F: Facility currently has a setpoint of 8% to ensure factor of safety for O₂ and 1500 degrees F for temperature.

III.13 and 14 - If combustion oxygen content falls below 5% the facility will shut down within 15 minutes; shall not operator without proper oxygen monitoring and recording devices: Service calibrates and tests the O₂ sensor monthly. If the oxygen content falls below 8% the facility shuts down immediately.

III.15 and 16 – If incinerator temp falls below 1400 degrees F the facility must bring back up to 1400 degrees F within 15 minutes or shut in plant; below 1300 degrees F the facility must shut in: The facility shuts down immediately if temperature goes below 1500 degrees F, this meets both conditions.

III.18 – Amine regenerator shall be vented to incinerator or emergency flare in emergency: In the event the incinerator goes down the vented gases will go to the emergency flare. If the flare is down the facility will shut in. No changes appear to be made since last inspection.

IV.2 through 5 - Monitors and audio alarms are required for oxygen content and temperature: the event the levels are below set points, an audio alarm sounds, a light turns on and the operator is automatically paged. The audio alarm was demonstrated previously.

V.1, VI.1 and VII.4 – Shall determine H2S concentration in the natural gas either entering the plant or going to the incinerator on a monthly basis; must report daily mass flow rate, monthly H2S concentration and hourly/daily SO2 emissions each month: The operator uses colorimetric tubes to determine concentration for the 1-26B and 1-27 wells, flow rate of gas is monitored from the wells. The total hourly/daily SO2 emissions are calculated and submitted to AQD each month.

VI.1 through 5 – The permittee shall calibrate monitor/record/retain continuous records for oxygen content and temperature at the outlet of the combustion chamber: PMR calibrates the monitoring equipment; the data is recorded on circle charts continuously. Current and previous charts are maintained at the facility office. Most recent PMR calibration was 7-9-14.

VII.1, 2 and 3 – deviation, semiannual and annual reporting: The facility submits appropriate reporting, signed by the responsible official.

VIII.1 – Flare stack has no requirements

VIII.2 – Incinerator stack shall be max 10 inches; min 100 feet: The stack is approximately 120 feet high and encompassed by insulation. Due to the insulation the exact diameter could not be verified however in my judgment it meets this requirement.

IX. PMMAP – The PMMAP was reviewed, records are maintained as required. John will be reviewing and updating MAP.

EUGLYCOLDEHYDRAT - The permit requires the dehy to vent to the incinerator or flare and shall be installed properly. The unit was reviewed at the site and appeared to be installed correctly with piping to vent the dehy to the incinerator.

EUNATGASENGINE – The 60 hp internal combustion engine is subject to 40 CFR Part 63 Subpart ZZZZ – NESHAP for Stationary Reciprocating Internal Combustion Engines for Area Sources as the facility is not major for HAPs. MDEQ AQD has not been delegated this regulation for enforcement.

Based on the field inspection and records review, this facility meets the conditions of its ROP.

NAME _____

DATE _____

SUPERVISOR _____