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

N797338466

FACILITY: MUSKEGON DEV CO- KELLY-OIL PROD FAC		**SRN / ID:** N7973
LOCATION: BALSAM RD SEC 23 T19N R3W, HARRISON		**DISTRICT:** Saginaw Bay
CITY: HARRISON		**COUNTY:** CLARE
CONTACT:		**ACTIVITY DATE:** 12/07/2016
STAFF: Benjamin Witkopp	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Inspection of Kelly 1-23 crude oil production facility		
RESOLVED COMPLAINTS:		

Ben Witkopp of the Michigan Department of Environmental Quality - Air Quality Division (MDEQ-AQD) checked the Kelly 1-23 crude oil production facility. It was previously owned and operated by Northshore Petroleum. It is now owned by Muskegon Development. The facility is located in Clare County in Section 23 T19N R23W. It is on the south side of Balsam Rd. just west of Hoover Ave. Air permit 26-08 was issued for the site.

Crude oil production involves the well, heater treater, storage tanks, and a flare system. A continuously burning pilot flame, shutdown system in case of pilot flame failure, vapor return system used during tank unloading, and venting of tank emissions to the flare are the basic operating stipulations found in the permit. The permit also requires tracking of H2S concentrations and produced gas volumes to determine H2S quantities going to the flare. This information can be used to determine the SO2 emissions. There is a meter on site which provides the gas flow volumes.

The well was flowing at the time and the flare was lit. The shutdown system was checked and found to be in place. It operates through a thermocouple which would trip a solenoid if flame out was detected. The solenoid activates a shutoff, through pressure, which subsequently stops fluid flow into the facility. Propane is used to fuel the heater treater which has its own stack. The storage tank emissions vent to the flare. The loadout area was equipped with a vapor return system.

The company was contacted and asked to provide records required by the permit. Bill Myler of Muskegon Development relayed the request to Mike Mesbergen. Mike provide pdf copies of records and emissions calculations from January 2016 through November 2016. It should be noted the permit allowed the use of gas to oil ratios to calculate emissions. However, the company installed a flow meter to measure the flow of produced gas. This is more accurate than a gas to oil ratio since exact daily amounts are provided. The days when H2S concentrations are taken were indicated by circling the date on the records.

H2S concentrations ranged from 3 to 5%. There was one month of 10% from January 2016. Past concentrations typically were in the range of 8-9%. The H2S concentration is used with produced gas volumes to determine mass flow of H2S to the flare. The permit has a limit of 285.3 pounds of H2S per day and 98 tons per year of SO2. The highest H2S loading was 230 pounds per day. It occurred during the month of January when the concentration was 10%. There were several points during months when the reported concentration was 3.75 - 5% that could have neared, or exceeded limits if the concentrations were near the 10% found in January. The highest SO2 for a 12 month rolling time period was 19.86 tons.

The company was contacted about the wide range in H2S concentrations. Since it is a single, flowing well situation it seems the results should demonstrate consistency in the range of 8-10% as previously found. The response was that the sampling point was consistent but there was variation in the points of the flow cycle during H2S concentration sampling. They were reminded to be sure the well was actively flowing when future samples are taken. Care was also urged when taking the sample under some pressure.

NAME B. Witkopp DATE 1-2-18 SUPERVISOR C. Hare