

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

N295439037

FACILITY: Cargill Salt - Hersey		SRN / ID: N2954
LOCATION: 1395 135th Ave, HERSEY		DISTRICT: Cadillac
CITY: HERSEY		COUNTY: OSCEOLA
CONTACT: Kelley Templin , Safety Specialist		ACTIVITY DATE: 03/02/2017
STAFF: Kurt Childs	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

2017 Full Compliance Evaluation (FCE)

I conducted an FCE, including a site inspection on March 7, 2017 of Cargill Salt – Hersey in accordance with the Cadillac District inspection plan. The purpose of the FCE was to determine compliance with Renewable Operating Permit MI-ROP-N2954-2014d and the Air Pollution Control Rules. Cargill Salt – Hersey produces various sodium chloride salt products by dissolving, concentrating and evaporating sodium chloride brine. This source previously also produced potash but that process and related equipment have been removed and the related EUSOLMINING emission unit has been removed from the ROP.

Prior to entering the plant I made some off-site observations. The weather was clear with a temperature of 50 degrees F and high, gusty winds (20 – 30 mph). Despite the wind, I did not observe any fugitive dust emissions (EUNACLREFINERY SC 1.7). There were no visible emissions from any of the stacks.

At the time of the inspection I met with Ms. Kelley Templin to conduct the site inspection and review company records. Just as I arrived, the plant experienced a blackout possibly due to the high winds in the area. The blackout caused the plant to temporarily shut down. Ms. Templin and I reviewed ROP reporting issues while we waited for the power to return. Prior to the inspection I had reviewed past reporting and noted that the 2016 first semi-annual Compliance Assurance Monitoring (CAM) report for EUNACLREFINING had not been submitted. Additionally, Special Condition (SC) VII.4 contains a separate reporting requirement for 40 CFR 60, Subpart OOO for which we had not received a report.

Ms. Templin and I discussed these reporting issues. Reports for ROP annual certification of compliance and semi-annual reporting of monitoring and deviations have been submitted in a timely manner in the past as has the annual 40 CFR Part 60, Subpart OOO Method 22 observation report (fugitive dust) required by SC VII.8 of EUNACLREFINERY.

EUNACLREFINERY SCs VII.9 and 10 require semi-annual reporting of excursions and exceedances from the control equipment operating parameters established during emissions testing and specified in the CAM plan and SCs VI.6 through 14. Semi-annual CAM reports are due according to the same schedule as the ROP semi-annual reports required in SC VII.2 (March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30). The AQD did not receive the first semi-annual CAM report for 2016. The first semi-annual ROP deviation report indicated there were no deviations from any ROP conditions including the CAM monitoring requirements. However, separate CAM reports are still required stating there were no excursions or exceedances from the CAM operating ranges and that there was no monitor downtime. Ms. Templin stated she would submit the second semi-annual CAM report by March 15, 2017 (on-schedule) and would include a deviation for not submitting the first semi-annual CAM report in the Annual ROP Certification of Compliance report.

EUNACLREFINERY SC VII.4 (40 CFR 60, Subpart OOOO) requires a semi-annual report of all occurrences when the control device measurements differ by more than $\pm 30\%$ from the average determined during the most recent stack test. This is very similar to the CAM reporting requirement with the exception of the 30% specification and the report due dates of July 30 and January 30. Ms. Templin stated that there were no such occurrences in 2016 so no report was necessary. I believe this is correct, 40 CFR 60.676(d) contains the following language:

(d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss and liquid flow rate decrease by more than 30 percent from the average determined during the most recent

performance test.

Subpart OOO does not contain any requirement regarding submittal of the report when there are no occurrences of 30% deviation from established parameters.

Following our review of the ROP reporting requirements power had been restored to the plant and it had restarted. We discussed the records that I needed to review on site and Ms. Templin made arrangements to have those records available during our inspection. These included maintenance work orders for annual calibration of the monitoring gauges on each of the scrubbers (EUNACLREFINERY SC VI.2 and 3). There was one work order for each scrubber that covered all of the monitors for that scrubber. These work orders indicated that each of the monitors had been calibrated. The work orders I reviewed were:

Process	Date	Work Order Number
Salt Dryer Scrubber	11/28/16	4875972
Salt Cooler Scrubber	11/29/16	4876145
Salt Compaction Scrubber	11/28/16	4875976

We proceeded to the plant control room to review control device operating parameter logs and other operating data. The plant houses the turbine, HRSG, and salt refinery. Cargill Salt staff inspect and record monitoring data from the salt cooler scrubber, salt dryer scrubber, and salt compaction scrubber twice per shift (4 times per day). The most recent month's records were available in the control room and additional records are on file.

All observed readings were with the operating parameters specified in the ROP and CAM plan with the exception that the spray nozzle pressure readings for the salt cooler scrubber and salt dryer scrubber were slightly higher than the specified ranges. The monitors are pressure gauges with readout provided by needles that move against a background scale. These needles do not remain steady, so Cargill Salt staff record two or three readings during each observation.

Copies of additional records were requested to be provided following the inspection. Cargill did not want to provide these records at the time of the inspection because each of the forms contains process data Cargill considers confidential business information (CBI) that is not related to air emissions. I requested that Cargill just copy the scrubber operating parameter portion of these log sheets and send me copies from the 15th day of each month in 2016. I also suggested that in the future they separate out the air pollution control device operating parameter logs from the CBI data.

These records were provided on March 14, 2017. The records indicate that the scrubber operating parameters were within the operating ranges identified in the CAM plan and the revised Malfunction Abatement Plant (MAP)(also provided on March 14, 2017) with the exception of the salt dryer scrubber (which had spray nozzle pressures of 20 psi which is above the 7.6 to 17.1 psi range specified in the plans); and the salt compaction scrubber flow rate of 300 gpm (which was greater than 234 – 252 gpm range specified in the CAM plan but within the 234 – 352 gpm range specified in the updated MAP).

Data provided with the May 21-23, 2013 emissions test report indicates that the salt dryer scrubber spray nozzle pressure and salt compaction scrubber flow rate operating parameters during the test were 12psi and 293 gpm respectively. The current operating parameters are much higher than the parameters measured during the emission stack test. This would likely result in equal or higher collection efficiency for the scrubbers. During my review of the revised MAP for approval I will include a request to update the salt dryer scrubber spray nozzle pressure operating range to reflect current operating practices. As required by MI-ROP-N2954-2014d, EUNACLREFINERY will need to be retested by May 23, 2018.

Daily natural gas usage is tracked in the control room and is available on the plant computer system. There are no limits on usage, only a requirement to track usage daily for the salt dryer burner (SC VI.5), turbine (SC VI.2), and duct burner (SC VI.2). An example of daily usage I observed for each was:

Process	Daily Natural Gas Usage (MCF)
Salt Dryer Burner	250
Turbine	1611.4
Duct Burner	292

Ms. Templin and I inspected the remainder of the plant, stopping to observe and record the scrubber monitor readings. My observations were as follows:

Process	Observed Inlet Pressure	Limits (CAM)	Observed Differential Pressure	Limits (CAM)	Observed Nozzle pressure / flow	Limits (CAM)
Salt Cooler Scrubber	9"	8.8" – 13.2"	9.5"	8.8" – 13.2"	12.5	10.2" – 22.9"
Salt Dryer Scrubber	6"	5" – 10.2"	8"	9" – 13.6"	11	7.6" – 17.1"
Salt Compaction Scrubber	11.5"	9.1" – 13.7"	11	11.5" – 17.3"	315	234 gpm – 252 gpm

There were some anomalies in our observed readings from those recorded during normal operation of the salt refining process. The plant operator attributed this to the plant being in the process of returning to full operation after the blackout.

The ROP does not contain any requirements to calculate and record emissions. Continuous compliance with the emission limits is based on stack testing and monitoring of operating parameters established during the most recent stack test. Emissions calculations and estimates are provided each year with the MAERS submittal (example attached).

EUTURBINE and EUHRSG contain emission limits and natural gas fuel quality limits of 0.01% by weight, of sulfur, as well as emissions testing requirements. There aren't any continuous compliance monitoring requirements to demonstrate ongoing compliance with the emission limits other than the fuel quality requirement. Annual gas analysis is conducted and I requested a copy of the most recent report. The report was received on 3/14/2017 and is attached. The report is from the natural gas supplier DTE Gas Company and does not include sulfur content but the fuel is pipeline quality natural gas.

Emissions testing is required every five years and was last conducted on February 9 and 10, 2016. That testing demonstrated compliance with the NOx emission limits for EUTURBINE and EUHRSG.

EUNACLREFINERY SC I.7 prohibits visible emissions from the evaporator building and salt compaction building (these buildings house the crushing/grinding, screening, conveying, and bagging operations subject to 40 CFR 60 Subpart OOO). SCs V.1 and VII.8 contain testing and reporting requirements to demonstrate compliance with this limit. As previously stated, the AQD has received semi-annual reports of the required Method 22 testing that demonstrate compliance with SC I.7.

The Source-Wide Conditions and EUNACLREFINERY contain requirements to maintain and operate in compliance with an approved Malfunction Abatement Plan (MAP). The AQD has a copy of the approved plan dated June 2014 on file. SCs III.3 through 5 of EUNACLREFINERY require that the scrubbers operate with the ranges specified in the MAP. However the MAP does not contain any operating ranges. I discussed this with Ms. Templin and requested she submit a revised MAP with the correct operating ranges for each scrubber. An updated MAP was submitted on March 14, 2017 that includes the specific operating parameters.


During my review of the ROP for this FCE I noted that EUNACLREFINERY SC VI.16 contains a sentence requiring enhanced monitoring as detailed in Appendix 3 if there is an excursion of an unidentified opacity level. This ROP does not contain an opacity limit therefore this condition will need to be corrected in the future through re-opening, modification, or renewal.

Summary

As a result of this inspection it appears that Cargill Salt – Hersey is in compliance with the requirements of MI-ROP-N2954-2014d and the Air Pollution Control Rules with the following exception:

The 2016 first semi-annual report was not submitted. It has been addressed in the ROP annual report

and the second semi-annual CAM report was also submitted by March 15, 2017. These submittals should resolve this issue. These reports were received on March 14, 2017.

NAME  DATE 3-23-17 SUPERVISOR 