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

N788845669

FACILITY: ALLOY RESOURCE CORPORATION		**SRN / ID:** N7888
LOCATION: 2281 PORT CITY BLVD, MUSKEGON		**DISTRICT:** Grand Rapids
CITY: MUSKEGON		**COUNTY:** MUSKEGON
CONTACT: Dennis Flanagan , VP/General Manager		**ACTIVITY DATE:** 08/16/2018
STAFF: Eric Grinstern	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Unannounced inspection		
RESOLVED COMPLAINTS:		

FACILITY DESCRIPTION

The facility is a secondary aluminum processor that utilizes an 80,000-pound holding capacity reverberatory furnace and a 20,000-pound holding capacity rotary furnace to process secondary aluminum scrap.

REGULATORY ANALYSIS

The facility holds one Permit to Install (PTI No. 340-07E) that covers one 80,000-pound holding capacity aluminum reverberatory furnace (EUALREVERB), one 20,000-pound holding capacity aluminum rotary furnace (EUROTARY), one 50,000-pound holding capacity aluminum reverberatory furnace (EUALREVERB50) and various space heaters (EUUTILITIES).

The three furnaces are subject to 40 CFR Part 63 Subpart RRR, Secondary Aluminum Production NESHAP. During the most recent compliance testing, only the 80k reverberatory and 20k rotary furnace were operating. The facility is currently not operating the 50k furnace and would need to re-test with the furnace operating before it can be put back into production.

COMPLIANCE EVAUATION

At the facility AQD staff consisting of Eric Grinstern (EG) met with Dennis Flanigan, VP/GM – ARC, Mark Hartman, Quality/EHS Manager -ARC and Hal Grant, Director, Environmental & Regulatory Affairs, Pace Industries.

Below is an evaluation of the compliance requirements for each regulated emission unit, based upon Permit to Install No. 340-07E and the applicable NESHAP requirements.

EUUTILITIES

Restricts natural gas-fired space heaters to not exceed 10 MMBtu/hour.

During the inspection, staff did not observe any natural gas space heaters that appeared to exceed 10 MMBtu/hour.

FGFURANCES

Flex group includes all three of the aluminum melting furnaces and lime injected baghouse.

Emission/Material Limits/Records

Emissions of VE, PM, PM10, PM 2.5, HCL, HF, CI, and D/F are restricted under FGFURANCES. Compliance with the emissions limits is demonstrated through compliance testing, throughput limitations and baghouse monitoring.

The facility conducted compliance testing in October 2016. The test results demonstrated compliance with the emission limits. The facility tested under two sets of conditions. Condition 1 maximized the aluminum production, under which the maximum amount of dioxin/furan emissions were expected. Condition 2 maximized the amount reactive flux used, under which the maximum amount of HCL emissions were expected. Dioxin/furan was only sampled during Condition1 testing. The facility demonstrated compliance under all conditions.

Pollutant	Emission Limit	Test Result
PM Condition1	0.01 gr/dscf	0.00014 gr/dscf
PM Condition2	0.01 gr/dscf	0.00031 gr/dscf
PM10 Condition1	2.91 lb/hr	0.64 lb/hr
PM10 Condition2	2.19 lb/hr	1.10 lb/hr
PM2.5 Condition1	2.91 lb/hr	0.64 lb/hr
PM2.5 Condition2	2.19 lb/hr	1.10 lb/hr
HCL Condition1	0.34 lb/ton	0.0094 lb/ton
HCL Condition2	0.34 lb/ton	0.010 lb/ton
HF Condition1	0.34 lb/ton	0.0019 lb/ton
HF Condition2	0.34 lb/ton	0.0025 lb/ton
D/F Condition1	2.25x10-7 lb/hr	5.2x10-9 lb/hr

Material throughput for aluminum melt and total reactive flux is limited within the permit. The facility is required to maintain, on a daily basis, a log of the hourly melt/throughput rate, a log of the feed/charge rate, types of material charged, individual flux charge rates, and chlorine injection rate for each furnace. The facility is also required to calculate and record the total weight of material charged to each emission unit in the SAPU for each 24-hour day of operation. Additionally, the facility is required to maintain records of total aluminum production in tons per 12-month rolling time period.

Total aluminum production is limited on a pound per hour basis in the permit to 11,600 pph, however, the permit allows for the facility to establish a new limit based on stack testing. During testing conducted in October 2016, the facility established a new charge limit of 12,380 pph. The facility also established a new total reactive flux injection rate. The permitted limit was 106.4 lb./chlorine/ton of charge. The rate established during testing was 288.3 lb. flux/ton of charge. Based on the chlorine content of the flux, the new limit is 144 lb./chlorine/ton charge. The facility previously used chlorine gas for fluxing, however they discontinued its use prior to performance testing and continue to only use granular flux.

Records (required by Condition VI.3 – daily records) for the previous 60 days were requested and provided by the facility. The records provide the hours of operation for the furnaces on a daily total basis and three-hour block. The records also document the furnace feed/charge rate on a daily and three-hour block, combined and for each individual furnace. Flux usage is documented for each individual furnace and combined.

Review of the records showed compliance with the charge rate for the operating cycling during performance testing (3-hours). The established limit is 12,380 pph. The facility only reached 11,000 pph hour twice for the records reviewed. Generally, the facility's charge rate was well below the established limit.

Review of the flux records showed that they were well below the rate established during performance testing, 288.3 pounds of flux/ 144 lbs. chlorine/ton of charge.

Records (required by Condition VI.4 – 24-hour charge records) for the previous 90 days were requested and provided by the facility. The facility provided 24-hour charge records for each individual furnace and for the combined total for the two furnaces. 24-hour charge records are used in determining the 3-day, 24-hour rolling average emissions of D/F for NESHAP compliance.

Records (required by Condition VI.5 – monthly production records) for the previous 12 months were requested and provided by the facility. The facility provided monthly production records for each individual furnace and the combined total.

The records show production well below the permitted limit of 55,800 tpy on a 12-month rolling average.

Process/Operational Restrictions/Records
Design/Equipment Parameters/Records

Requires the facility to operate under a current SSM Plan. The facility has submitted and is operating under an approved SSM Plan.

FGFURNACES is required to have an installed and properly operating lime and carbon injected baghouse system. The facility is controlling emission from FGFURNACES with a lime and carbon injection baghouse system. Both the lime and carbon injection systems were observed during the inspection. The baghouse is required to operate in accordance with an SSM Plan. The facility has installed and is operating with an SSM Plan

The lime and carbon injection systems are required to operate in a manner that injects lime at a rate equal to or greater than necessary to achieve compliance with the hydrogen chloride limit, as determined during testing. The system is required to inject carbon at a rate equal to or greater than necessary to achieve compliance with the D/F limit, as determined during testing. During testing, the lime injection rate was established at 32.5 pounds per hour and the carbon injection rate was established at 6 pounds per hour. During the inspection, observation of the lime injection system showed lime being fed into the exhaust system to the baghouse. The control panel showed a setting of 18.0 Hz. The baghouse monitoring system readout showed a setting of 18.3 Hz and a feed rate of 36.8 pounds per hour. Observation of the carbon injection system showed carbon being fed to the exhaust system of the baghouse. The control panel showed a setting of 71.8 Hz. The baghouse monitoring system readout showed a setting of 71.3 Hz and a feed rate of 11.2 pounds per hour. During the inspection, the monitoring system showed a three-hour feed rate below the established set points because the system had been shut down a couple hours earlier for baghouse cleaning.

Both the lime and carbon injection systems are required to be equipped with a device to monitor and record the feed rates on a continuous basis. The systems are equipped with monitoring and recording devices.

Records (required by Condition VI.7 – continuous lime feed records) for the previous 60 days were requested and provided by the facility.

Due to the volume of records associated with the request, the facility provided sample records and offered on-site review of lime records. The facility continuously (every minute) records the lime injection rate via the lime weight scale and lime feed Hz. The set point for the feed rate is 18 Hz, which is above the minimum of 13Hz established during stack testing.

Records (required by Condition VI.8 – maintenance records for lime feed system) for the previous 60 days were requested and provided by the facility.

Due to the volume of records associated with the request, the facility provided sample records of "Daily Inspection/PM record" as well as the June and July 2018 lime and carbon tests.

The facility's Semiannual Reports have documented several events involving lime feed malfunctions. At this time, it appears that the facility has taken appropriate actions to address the events in accordance with the SSMP.

The facility is required to maintain a list of the current flux material used.
Records (required by Condition VI.6 –flux SDS records) were requested and provided by the facility. The facility is using one flux- Amcor A-538-2.

The baghouse is required to be equipped with a device to monitor and record the pressure drop on a continuous basis. The facility has a device that continuously monitors and records the pressure drop. During the inspection the pressure drop reading was 5.86 inches. Which is the average across all of the baghouse cells. During stack testing the facility established a pressure drop range as 3-8 inches.

The facility supplied copies of pressure drop trend from the CMS. Due to the volume of data, the facility requested that further review be conducted on-site.

The facility is restricted to burning only pipeline quality natural gas. No other type of gas sources has been observed at the facility.

Testing/Sampling

Performance testing for FGFURNACES was required within 180 days of startup of EUROTARY. The facility tested in October 2016, which was within 180 days of startup.
Test results demonstrated compliance with both the permit limits as well as the NESHAP limits. Additionally, testing to verify the lime and carbon injection rates was required within 180 days of the startup of EUROTARY. The injection rates were verified during the performance test.

FGMACT-RRR

The three furnaces, EUALREVERB, EUALREVERB50 and EUROTARY are subject to the Secondary Aluminum Production NESHAP, Subpart RRR. The facility is an area source; therefore, the affected sources are only subject to emission limits for dioxin/furan. Additionally, the facility is subject to applicable process, operating, testing and monitoring requirements.

Emission/Material Limits

The furnaces are subject to a dioxin/furan limit of 0.00021 grain per ton of feed/charge.
The facility last tested the SAPU, which included the operation of EUALREVERB and EUROTARY, in October 2016. Dioxin/furan emissions were reported as 5.7x10-6 (demonstrating compliance with the NESHAP limit)

Process/Operational Restrictions/Design Parameters/Records

Subpart RRR requires capture and collection systems meet specified standards.
When the system was originally installed, the facility provided documentation of compliance with proper capture and collection standards. The facility is required to inspect the capture/collections and closed vent system at least once each calendar year in accordance with 40 CFR 63.1506(c). Addressed below under Monitoring/Recordkeeping.

The facility is required to submit an OM&M plan for each subject emission unit. The facility submitted an OM&M plan within 90 days of conducting the required performance test.

The facility is required to install and operate a device to measure and record the weight of feed/charge for each operating cycle. The facility has installed a device to measure the feed charge for each cycle.

In accordance with Subpart RRR, the facility has installed a lime-injected baghouse that controls emissions from the affected furnaces. The baghouse is equipped with a bag leak detection system and a device that continuously monitors and records the baghouse inlet temperature.

Testing/Sampling

The facility conducted performance testing within 180 days of the installation of EUROTARY to demonstrate compliance with the dioxin/furan limits, are required by Subpart RRR.

Monitoring/Recordkeeping

Summary of monitoring and recordkeeping requirements under Subpart RRR:

Bag leak detection system:

The baghouse is equipped with a bag leak detection system. The facility provided a written procedure to testing and establishing the set-point for the BLD system. The facility also provided screen shots of the BLD system continuous readout. The facility provided the alarm report for June, July and August 2018. The facility did not document any valid BLD system alarms for excess particulate. The facility did document several false alarms.

Annual inspection of capture and collection system:

A complete evaluation was conducted in December 2016 and submitted with the NOCSR. In August 2017 an evaluation was conducted by BTS. The evaluation verified no change in total flow rate. The evaluation also documented no changes to the hoods, ductwork, fan settings and controls. The facility is using a contractor to conduct the annual inspection in 2018.

Lime injection system:

Inspection of the feed hopper or silo is required at least once each 8-hour period.
The facility provided screen shots of the continuous weight monitoring system that provides verification that lime is flowing. Additionally, the facility conducts an inspection of the feeder twice a day. The facility provided sample records of the inspections that document flow and scale readings. These records also document the lime feeder setting. The facility also manually records the hourly lime scale weight and logs whether lime is manually fed.

3-day, 24-hour rolling average emissions of D/F:

The facility provided records of the 3-day, 24 hour rolling average emissions for D/F.
The intent of the 24-hour rolling average is to allow for averaging of multiple emission units within a SAPU. Since the facility tested and demonstrated compliance with both emission units in the SAPU operating at the same time, averaging does not appear to be necessary, or applicable. Subpart RRR contains and alternative under 63.1510(t) to demonstrate compliance based on each individual emission unit. This appears to be applicable based on the testing of the two furnaces operating simultaneously.

Baghouse inlet temperature:

The NESHAP requires the facility to maintain 15-minute and 3-hour block average baghouse inlet temperatures. The inlet temperature is required to remain below the maximum temperate established during compliance testing, plus 25 degrees F.
The maximum temperature for the inlet has been established at 212 degrees F. The facility provided samples of records documenting the continuous monitoring and recording of the inlet temperature.

The facility documented via Semiannual Reports and SSMP logs that they had two temperature exceedance events since January 2017. An event on October 2017 was documented to have lasted a maximum of 30 minutes. Another event occurred on June 27, 2018. The excess temperature event on June 27, 2018 does not appear to have been handled according to the SSMP. The facility provided documentation regarding actions to prevent a reoccurrence.

Total reactive flux usage records:

The facility is required to track and record flux usage to demonstrate compliance with the flux limit established during performance testing. Since the facility currently only adds solid flux intermittently, they record usage to document compliance during a 3-hour block time period. Performance testing established a flux usage limit of 288.3 pounds per ton of charge. Review of the previous three months of records showed flux rates well below 288.3 pounds per ton of charge. The flux rate established during the most recent round of performance testing occurred during testing to maximize the emissions of HCL/HF. During the testing that established the maximum flux rate, D/F was not evaluated. Subpart RRR is not clear in regard to whether the maximum flux rate is required to be established during D/F testing at an area source. The facility maximized fluxing during HCL/HF testing to provide the worst case for emissions. The facility is not subject to HCL/HF under the NESHAP but needs to test to verify they are an area source under Subpart RRR.

Feed/charge records:

Records of the charge rate are required to demonstrate compliance with the maximum throughput rate established during compliance testing. The facility provided records for the last 90 days demonstrating compliance.

Reports

The facility has submitted semiannual compliance reports, as required by Subpart RRR.
Reported events for the past year and a half primarily address lime feed issues along with a couple baghouse inlet temperature exceedances. It appears that the facility took proper action to address the upsets in accordance with the SSMP. The excess temperature event on June 27, 2018 does not appear to have been handled according to the SSMP. The facility provided documentation regarding actions to prevent a reoccurrence.

FGFACILITY
FGFACILTY establishes opt-out limits for HAPs and requires records documenting compliance with the emission limits.

Records from 2016 until current were provided to document compliance the 12-month rolling total HAP limit. Based on the records provided the facility is below the single and aggregate HAP limits.

Miscellaneous
During the inspection, observation of the SE area of the facility should a large amount of powdery material on the surface lot. The material has the potential to become fugitive dust. EG requested that the facility evaluate a solution to address the material and provide a schedule.

Summary
Based on the information obtained and observations made through this inspection, the facility appears to be in compliance with applicable air quality rules and regulations.

NAME _____ DATE 9/25/18 SUPERVISOR _____