

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

M454728451

FACILITY: FRITZ PRODUCTS		SRN / ID: M4547
LOCATION: 255 MARION, RIVER ROUGE		DISTRICT: Detroit
CITY: RIVER ROUGE		COUNTY: WAYNE
CONTACT: Dave Splan, Vice President		ACTIVITY DATE: 07/31/2014
STAFF: Katherine Koster	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Targeted FY2014 inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Targeted Inspection

INSPECTED BY: Katie Koster, AQD

PERSONNEL PRESENT: Al Sequin, Plant Manager; Dave Splan, Vice President

FACILITY BACKGROUND

Fritz Products, Inc., M4547, is located in the City of River Rouge in Wayne County. Currently, the facility's primary activity is secondary aluminum processing. The facility receives shredded scrap aluminum, mainly die cast as opposed to can stock or aluminum sheet, from its sister facility, Huron Valley Steel-Belleville. The majority of the scrap aluminum is processed through a gas-fired reverberatory furnace with a holding capacity of 130,000 pounds. The facility also has a small rotary copper furnace, electric induction nickel furnace, two small electric induction aluminum furnaces and has begun installing an iron cupola. This facility produces 380 die cast alloy.

REGULATORY ANALYSIS

Fritz Products is currently involved in an ongoing enforcement action with EPA which was initiated in 2010. See file for EPA 114 requests and NOV's.

In July 2011, the facility conducted a test for HCl and D/F on the aluminum furnace. The test was conducted without the use of lime as Fritz stated in a written letter to EPA that lime was not being used for emissions control (only as a filter cake). The facility failed the test for HCl and subsequently installed a lime injection system (operational in November 2012), received an updated permit (PTI 15-01A), and replaced the baghouse with a three baghouse system whereby two baghouses operate at a time. PTI 15-01A also contains opt out limits for HAPs. In August 2013, facility stack tested again and failed the HCl limits (both in the permit and the major source limit in the MACT) and appeared to be a major source based on the PTE.

Also, QA issues with the D/F test rendered it unacceptable to AQD (see emails in orange file between Tom Maza, TPU, the testing company, and Fritz). EPA and AQD cited the facility for being a major source of HAP's and subject to the ROP/Title V program. Facility argued that they were not subject to "once in, always in" because they changed the type of lime used and believed that they were back into compliance with the short term limits. Their belief is that this "one time" event is allowable under EPA policy. The VN response is in the facility file. While AQD does not agree with this interpretation, the facility nevertheless submitted an ROP application in June 2014 and it is AQD's understanding that company intends to comply with major source portions of the MACT for a Group 1 furnace. However, the MACT conditions are missing from the ROP application. Another stack test is pending for August or September 2014 timeframe.

Two Electric Induction Aluminum Furnaces were previously determined exempt from permitting under Rule 282(a)(iv).

The Wayne County permits were not reviewed at this time.

PROCESS OVERVIEW

Fritz Products in River Rouge receives shredded scrap from Huron Valley Steel. Scrap has already been washed and dried and run through a magnetic separator. After receipt, the scrap is placed into a storage area. When needed, it is loaded into a hopper and charged to the reverberatory furnace via an automatic belt conveyor and rotary drum preheater. Charging is virtually continuous. Exhaust from the furnace heats the preheater. Liquid chlorine is injected continuously in the bottom of the aluminum bath as a flux to remove magnesium. The injection rate changes based on the varying Mg content of the scrap. Samples are taken about once an hour to determine the Mg content and to adjust the injection rate. A solid cover flux of "pure salt" is also used. Solid flux is added manually about once an hour and amounts are recorded by hand. Impurities from the scrap adhere to the flux and form a layer on top of the molten metal bath known as dross. The furnace is periodically "dedrossed" where the furnace doors are opened and the surface of the bath is skimmed by an operator into a container. Dedrossing the white dross (from the hearth) and black dross (from the charge well) occurs just prior to pouring. The furnace is "poured" every 5-6 hours resulting in 4 heats per day. According to Al Sequin, plant manager, the amount of aluminum poured per heat is fairly consistent.

Emissions from the furnace and preheater are ducted to a negative pressure baghouse system comprised of three baghouse units and a single stack. Two baghouses are in operation at a time with the third baghouse on "standby". Baghouse combinations are alternated as needed based on pressure drop and the need for cleaning. Baghouses are taken off line via a manual process of opening and closing of dampers. Pressure drop gauges are present for each baghouse and there are electronic readouts along with bag leak detector readings in the control room. There is also a continuous lime injection system upstream of the baghouses located inside of the facility. This system injects powdered lime into the ductwork. An alarm is activated if the level of lime in the hopper gets too low.

INSPECTION NARRATIVE

AQD staff, Katie Koster, arrived at the facility on July 31, 2014. I observed the facility from Marion Street and did not notice any visible emissions, fugitive or otherwise. I entered the facility and met with Mr. Al Sequin, Plant Manager. I was informed by Mr. Sequin that they were in the process of switching the operating baghouses but were having problems fully closing the damper on No. 2 baghouse due to material buildup in the ductwork (mostly likely lime).

In the main office, Mr. John Splan presented the electronic monitoring and recordkeeping system recently installed. The monitor displayed the baghouse inlet temperature, overall and individual baghouse pressure drops, bag leak detector readings, chlorine injection rate, natural gas usage, and aluminum feed and aluminum output amounts. I recorded the following values: lime feed was 10.6, BH No. 1 and 3 were in operation, baghouse inlet temperature was 161F and the three hour average was 140, the chlorine injection rate was 25 lb/hr, and the pressure drops were 4.5, 6, and 2. A pressure drop of 6 and above indicates the need for cleaning which was why No. 2 BH was being taken out of service. The BLD system output is set to alarm at 55 picoA; No.1 BH was reading 1.8 and No.3 was at 4.4 which are both well below the 55 picoA threshold that would indicate a potential leaking bag.

Next, we walked through the facility. I did not observe any fugitive emissions from the reverberatory furnace or the baghouse stack. The furnace was being tapped and the aluminum molds were being filled. I viewed the baghouse inlet temperature gauge which was consistent with the temperatures I had recorded from the electronic system inside of the office. The lime injection system is near the furnace and will alarm when the lime level in feeder is too low. The hopper is manually filled; ideally before the alarm is activated. Outside, an employee was attempting to manually close the dampers for No. 2 baghouse. We entered the control room and I viewed the pressure drop and BLD readouts which were also consistent with values I recently recorded in the main office.

We returned to the main office and discussed the upcoming stack test. I informed the facility that I would be following up with a records request via email.

APPLICABLE RULES/PERMIT CONDITIONS EVALUATED

At this time, I evaluated compliance with the following conditions from PTI 15-01A. The reverberatory furnace was the only furnace in use during the inspection. The iron cupola installation has not been completed.

EUReverbFurnace1 - Aluminum reverberatory furnace

II. MATERIAL LIMITS

1. The permittee shall not load more than 50 pounds of liquid chlorine per 1 ton of aluminum processed to the EUReverbFurnace1. **IN COMPLIANCE** – Based on a monthly average in the attached record, the facility is in compliance for the time period of January – July 2014 as the highest lb chlorine/ton of aluminum feed was 47.48 in January. However, calculations on an hourly or daily lb/ton basis may show noncompliance. At this time, AQD does not have enough information to conduct that analysis. Facility believes averaging is allowed on a monthly basis although AQD staff has expressed the view that it appears to be hourly or at least daily per Condition VI.1. The permit language is unclear in this matter. Further evaluation is needed to determine whether this is a potential issue.

III. PROCESS/OPERATIONAL RESTRICTIONS

1. Doors over charge bin of EUReverbFurnace1 must be closed when active loading is not taking place. **IN COMPLIANCE**. Doors were closed during inspection.
2. Doors over fluxing well of EUReverbFurnace1 must be closed when fluxing is not currently being performed. **IN COMPLIANCE**. Doors were closed during inspection.
3. Applicant shall not operate the melting furnace unless the baghouse and cyclone are installed and operating properly. **UNABLE TO DETERMINE**. Facility failed stack testing for HCl in August 2013. However, facility

changed the type of lime in use and claims that based on preliminary findings, they are now in compliance with the HCl limits. Another stack test is pending for August/September timeframe. Therefore, AQD cannot determine whether the baghouse is operating properly at this time.

VI. MONITORING/RECORDKEEPING

1. The permittee shall monitor and record the amount of Liquid Chlorine used per hour and per day on a daily basis. The permittee shall keep the records on file at the facility and make them available to the Department upon request. **DID NOT EVALUATE** - Chlorine tanks are on scales and the weight is recorded periodically. AQD did not request these records at this time.
2. The permittee shall monitor and record the amount of Liquid Chlorine used on a pound per ton feed basis. The permittee shall keep the records on file at the facility and make them available to the Department upon request. **IN COMPLIANCE** – Based on a monthly averaging period from Jan – July 2014, records provided indicate compliance (attached).

VIII. STACK/VENT RESTRICTIONS – **DID NOT EVALUATE** stack height at this time. However, exhaust is released unobstructed vertically upward.

The following conditions apply to: FGAluminumMelt

I. EMISSION LIMITS

1. PM limit of 0.0095 lb/1000 lbs exhaust gas. **UNABLE TO DETERMINE**. August 2013 stack test was inconclusive as one combination of baghouses did not pass. See file for full report. Pending further stack testing to occur in August/September 2014.

2&3. HCl – 2.0 pph and 8.8 tpy. **NOT IN COMPLIANCE**. Stack test results from August 2013 test indicated an exceedance of the hourly limit. AQD then calculated the potential to emit using the hourly average value from the stack testing and 8760 hours of operation and arrived at a yearly value above 8.8. Additionally, calculating the tpy using the lb/ton aluminum produced emission factor also results in a value higher than 8.8 tons. Company changed the type of lime being injected and claims this will bring them back into compliance. Pending further stack testing to occur in August/September 2014.

4&5. 5% 6 minute average visible emissions from baghouse stack and fugitives. **IN COMPLIANCE**. No fugitive visible emissions (VE's) or VE's from the baghouse stack were observed during the on site inspection.

II. MATERIAL LIMITS

1. Aluminum throughput 60,000 tons per 12 month rolling time period. **IN COMPLIANCE**. According to the records provided from Jan – July 2014, highest 12 month rolling aluminum throughput was 34,957 tons.
2. Natural gas usage rate is limited to 96.36 MMSCF/yr per 12 month rolling time period. **IN COMPLIANCE**. According to the records provided from Jan – July 2014, highest 12 month rolling natural gas usage was 66.91 MMSCF/yr.
3. Fluoride content of solid flux no more than 5% by weight. **DID NOT EVALUATE**. However, company claims flux has not changed since permitting for 15-01A and information demonstrating compliance was submitted with the application.

III. PROCESS/OPERATIONAL RESTRICTIONS

1. Applicant shall not operate the FGAluminumMelt unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix A has been implemented and is maintained. **DID NOT EVALUATE AT THIS TIME**. However, based on my observations while on site, fugitive dust does not appear to be an issue at this time,
2. The permittee shall not operate FGAluminumMelt unless a malfunction abatement plan (MAP) as described in Rule 911 (2), for the lime injection system and baghouse, has been submitted within 60 days of permit issuance, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits.

NOT IN COMPLIANCE - A MAP was submitted to AQD in October 2013 via email after my verbal request. It was due in December 2012. However, as the baghouse replacement and lime injection system were pending along with a new stack test to set new/revised operating limits, AQD applied discretion regarding the issuance of a violation notice. The MAP was submitted after stack testing was completed in August 2013.

IV. DESIGN/EQUIPMENT PARAMETERS

1. Applicant shall not operate the FGAluminumMelt unless the baghouse associated with the flexible group is installed, operating, and maintained in accordance with manufacturers operation and maintenance manual and in accordance with the approved MAP. A pressure gauge must be installed which measures pressure drop across the baghouse and sounds an alarm when the pressure drop exceeds 6.0 inches W.G. **IN COMPLIANCE.** At the time of the inspection, pressure gauges were installed and appeared to be operating properly.
2. The permittee shall not operate FGAluminumMelt unless the automatic lime injection system associated with the baghouse is installed, operating and maintained in accordance with manufacturer's instructions and in accordance with the approved MAP. Proper operation includes operation of the lime injection system such that the lime feed rate is greater than necessary to achieve 95% control of the hydrogen chloride emissions, as determined during stack testing. **NOT IN COMPLIANCE.** Lime injection system is in use. However, a valid stack test has not been conducted that indicates compliance with the HCl limit so AQD cannot evaluate whether the system is operating properly. Additionally, based on the attached records it appears that the lime injection system was not in use during the morning hours of 7/31 and for a portion of the morning on 8/1 which may be associated with issues with closing the dampers. This needs further evaluation over a longer time period to determine whether this is a frequent occurrence.
3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the natural gas usage from FGAluminumMelt on a continuous basis. **IN COMPLIANCE.** Natural gas meter and electronic records were presented during the inspection.
4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the lime injection system feed rate for FGAluminumMelt on a continuous basis. **IN COMPLIANCE.** Lime injection rate is continuously monitored and recorded.
5. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the pressure drop across the baghouse for FGAluminumMelt on a continuous basis. **IN COMPLIANCE.** Pressure drop continuously monitored and recorded.

V. TESTING/SAMPLING

1. Within 180 days after commencement of trial operation of the lime injection system, the permittee shall verify PM and HCl emission rates and the control efficiency of the lime injection system and baghouse from FGAluminumMelt by testing at owner's expense, in accordance with Department requirements. No less than 60 prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **IN COMPLIANCE.** Permit was issued in October 2012. Stack test was due in April 2013. An extension was granted by AQD as facility had planned a replacement of the baghouses near the time when the testing was to occur. Testing occurred in August 2013 as allowed by AQD. See letter in orange facility file.

VI. MONITORING/RECORDKEEPING

- 2,3,&7 – **IN COMPLIANCE.** Facility is monitoring and recording aluminum throughput, natural gas usage, and pressure drop on a continuous basis. See attached records.
4. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period HCl emission calculation records for FGAluminumMelt. The permittee shall use the control efficiency as determined per SC V.1, or subsequent stack tests, for all HCl emission calculations used to determine compliance with SC I.3. All records shall be kept on file and made available to the Department upon request. **NOT IN COMPLIANCE.** First, facility claims there is no way to conduct a "control efficiency" test and is only able to obtain an outlet value. See attached emails. AQD is not sure why the facility did not point this out during permit negotiations. Also, monthly and 12 month rolling records were submitted (see attached). However, facility is not using the August 2013 stack test value to calculate all of the emissions as they believe the lime change has impacted the tested value. At this time, AQD has accepted this approach unless upcoming stack test shows otherwise since the facility has already been cited for exceeding the HCL limits. At this time, no violation notice will be issued for this condition.
5. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each flux material used, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's

formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.
DID NOT EVALUATE AT THIS TIME.

6. The permittee shall monitor and record the lime slurry feed rate of the lime injection system on a continuous basis in a manner and with instrumentation acceptable to Air Quality Division. The monitors and associated monitoring data shall be used for compliance demonstration purposes for the control efficiency of the lime injection system. The permittee shall keep all records on file and make them available to the Department upon request. **UNABLE TO DETERMINE. Lime feed rate is continuously monitored. See attached records. However, a valid stack test showing compliance with the HCl limits and the corresponding adequate lime feed rate is pending. Furthermore, some zeros are present in the attached data. A more comprehensive review needs to be performed to determine whether this is a routine occurrence and why.**
8. The permittee shall keep records of the maintenance of the lime injection system and the baghouse and shall keep calibration records for all monitors associated with the lime injection system and baghouse in a manner acceptable to the Air Quality Division. The permittee shall keep all records on file and make them available to the Department upon request. **DID NOT EVALUATE AT THIS TIME.**

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted: **DID NOT EVALUATE STACK HEIGHT** although gases are discharged unobstructed vertically upwards.

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and RRR, as they apply to FGAluminumMelt. **(40 CFR Part 63 Subparts A & RRR) NOT IN COMPLIANCE – A high level citation for MACT RRR was the only condition included in PTI 15-01A as there is an ongoing enforcement case between EPA and Fritz related to the “applicable” conditions of this MACT. Until that is resolved, AQD chose to reference the MACT in this manner. At the time of inspection, the facility had failed the most recent stack test for HCl and the D/F test was unacceptable. The D/F limit in the MACT is the same for area and major sources. The HCl limit is for major sources and the facility exceeded that limit although they are claiming that they are not a major source at this time and that once in always in does not apply. The MACT requires that several operating limits be determined through stack testing and monitored for compliance moving forward. This has not occurred as a successful test has not been performed. For these reasons, non-compliance was chosen.**

COMPLIANCE DETERMINATION

Based upon the information and observations made during this inspection and information provided by the facility, the facility is out of compliance with PTI No. 15-01A and Subpart RRR, the Secondary Aluminum Production NESHAP, as detailed above. Facility has already been cited for the exceeding HCl limits and for non-compliance with Subpart RRR and for failure to submit a timely Title V application. As such, another violation notice is not warranted at this time.

Follow up items:

1. Lime injection rate and buildup of lime in ductwork/maintenance and cleaning schedule
2. Subpart RRR – applicable requirements
3. Lb chlorine/ton aluminum limit averaging period
4. Review active Wayne County permits for potential voids

NAME

Kate Kiste

DATE

2/05/15

SUPERVISOR

W.M.