

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

B430650292

FACILITY: Gerdau Special Steel North America - Jackson Mill		SRN / ID: B4306
LOCATION: 3100 BROOKLYN RD, JACKSON		DISTRICT: Jackson
CITY: JACKSON		COUNTY: JACKSON
CONTACT: Craig Metzger , Regional Environmental Manager		ACTIVITY DATE: 09/05/2019
STAFF: Mike Kovalchick	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: FCE. Non-compliance issues include placing waste such as pallets into slag pile and allowing to burn outdoors which is repeat violation from 2018. Also, small vent from the Castor oil mist system showed some opacity but resolved by 9/24/2019.		
RESOLVED COMPLAINTS:		

Major / ROP Source. Full Compliance Evaluation (FCE) and Inspection (PCE)

Facility Contacts

Craig Metzger (CM), Regional Environmental Manager, 734-818-7113. Craig.metzger@gerdau.com

Alicia Stone, Site Supervisor TMS International

Purpose

On September 5, 2019, I conducted a scheduled, announced inspection of the Gerdau Special Steel North America - Jackson Mill (Company or GJ) facility located in Jackson, Michigan (Jackson County) at 3100 Brooklyn Road. (Note: TMS International's slag handling facility located on GJ's property was also inspected.) I was accompanied on the inspection by Stephanie Weems with Jackson AQD. The purpose of the inspection was to determine the facility's compliance status with applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules, and the conditions of GJ's Renewable Operating Permit (ROP) number MI-ROP-B4306-2015, issued February 12, 2015.

Facility Location

Several residential and commercial properties, including a preschool, are located about 1,000 feet south and southeast of the facility, while US-127 and open / agricultural fields are located west and north, respectively, of the facility.

Arrival & Facility Contacts

No smoke or odors were observed upon our arrival and parking at the facility, at approximately 8:45 am. We proceeded to the facility security office to request access for an inspection of the facility. We then met with Craig Metzger (CM) just before 9:00 am who I had contacted the previous day to accompany me on the inspection since he is based out of the Gerdau-Monroe facility.

Regulatory Applicability

The facility is a Major / ROP source for CO and had also accepted PM, NOx, SO2, CO, and VOC emission limits in order to remain below major source emission thresholds for these pollutants. The facility is regulated by ROP number MI-ROP-B4306-2015. It is also subject to:

Title 40 of the Code of Federal Regulations (CFR), Part 63, Subpart YYYYY (5Y), National Emission Standards for Hazardous Air Pollutants (NESHAP) for Electric Arc Furnace (EAF) Steelmaking Facilities. This MACT includes requirements to limit mercury and other contaminants in the steel scrap, and a PM and PM10 emission limit of 0.0052 gr/dscf of exhaust gases and 6 % opacity limit for the facility's electric arc furnaces (EAFs).

Title 40 of the CFR, Part 63, Subpart ZZZZ, NESHAP for Reciprocating Internal Combustion Engines (RICE) (AKA RICE MACT).

Title 40 of the CFR, Part 64, Compliance Assurance Monitoring (CAM), with the following CAM monitoring parameters for FG-EAF/LMF/VAD: VE readings, bag house pressure drop monitoring, and bag house inspection and maintenance activities.

Title 40 of the CFR, Part 60, Subpart AAa, Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983. This standard does **NOT** apply. See Scheduled Inspection Activity Report dated 6/26/2013 for a discussion on applicability.

A new baghouse has been installed to control particulate emissions from the Caster roof monitor style vent is exempt from PTI requirements per Rule 285 (2) (e). However, under terms of EPA Consent Decree 18-12228, the Company is required to make the language in the Consent Decree enforceable in a PTI. PTI Application 118-19 was received by AQD on July 30, 2019 and was issued on September 23, 2019 shortly after the inspection was conducted.

A ROP renewal application was submitted to AQD on July 25, 2019 to renew ROP MI-ROP-B4306-2015. This application is currently under Technical Review.

The facility reports its emissions to MAERS and is designated as a Fee Category I source.

Emission Unit (EU) / Flexible Group (FG) Details

EMISSION UNIT SUMMARY TABLE

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-HTOV001	30 MMBTU/hr natural gas fired heat treat furnace PTI 24-06	7/1/1981	FG-FACILITY
EU-ROOFMONITOR	This emission unit is comprised of the melt shop roof monitor. The roof monitor is a covered vent at the apex of the roof line of the melt shop. The emissions emitted from the roof monitor are fugitive emissions that escape the roof canopies. PTI 535-96I	1/1/1973	FG-SHOP
EU-AF01	60.2 MMBTU/hr annealing furnace #1 PTI 183-01	9/8/2001	FG-FACILITY
EU-AF02	38.4 MMBTU/hr annealing furnace #2 PTI 183-01	9/25/2001	FG-FACILITY
EU-EAF-01	Electric arc furnace (EAF #1) melts scrap iron in a batch process. It is a refractory-lined cylindrical vessel with bowl shaped hearth and dome-shaped movable roof. The EAF emissions are ducted to a common baghouse (Baghouse No. 3)	1/1/1973	FG-EAF FG-EAF/LMF/VAD FG-SHOP FG-FACILITY
EU-EAF-02	Electric arc furnace (EAF #2) melts scrap iron in a batch process. It is a refractory-lined cylindrical vessel with bowl shaped hearth and dome-shaped movable roof. The EAF emissions are ducted to a common baghouse (Baghouse No. 3).	1/1/1973	FG-EAF FG-EAF/LMF/VAD FG-SHOP FG-FACILITY
EU-LMF	A ladle metallurgy furnace (LMF). Exhaust gases from the LMF are captured by the removable hood and associated canopy hoods and then routed to the melt shop baghouse. (DV-BH03) for PM emission control.	7/7/1989	FG-EAF/LMF/VAD FG-SHOP FG-FACILITY
EU-VAD	A vacuum arc degasser (VAD). Exhaust gases from the VAD are captured by the close fitting hood at the vacuum chamber door and associated canopy hoods and then routed to the melt shop baghouse (DV-BH03) for PM emission control.	7/7/1989	FG-EAF/LMF/VAD FG-SHOP FG-FACILITY
EU-binfilter	This device is a small baghouse atop a silo. Its use is to prevent fugitive emissions from escaping the silo, which stores EAF dust.	3/1/1998	FG-FACILITY
EU-limeBH	This is a small baghouse attached to the lime system. Its purpose is to collect fugitive emissions during lime system operation. It operates about 2 hours per day.	6/1/1999	FG-FACILITY
EU-COLDCLEANERS	Seventeen (17) cold cleaners	11/26/13	FG-FACILITY
EU-ENGINE1	Existing Emergency Compression Ignition Generator < 500 HP (Clean 1 West)	June 1984	FG-RICE
EU-ENGINE2	Existing Emergency Compression Ignition Generator <500 HP (Clean 1 East)	5/23/1997	FG-RICE

EU-ENGINE3	Existing Emergency Compression Ignition Generator < 500 HP (Turn Office)	Before 7/11/2005	FG-RICE
EU-ENGINE4	Existing Emergency Compression Ignition Generator >500 HP. (New Heat Treat)	2001	FG-RICE
EU-ENGINE5	Existing Emergency Spark Ignition Engine < 500 HP (Outside #1 STR)	7/14/1998	FG-RICE
EU-ENGINE6	Existing Emergency Spark Ignition Engine <500 HP (Admin Bldg.)	6/8/2006	FG-RICE

FLEXIBLE GROUP SUMMARY TABLE

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-EAF	Two (2) Electric Arc Furnaces	EU-EAF-01 and EU-EAF-02
FG-EAF/LMF/VAD	Two (2) Electric Arc Furnaces, a ladle metallurgy furnace (LMF), and a vacuum arc degasser (VAD).	EU-EAF-01, EU-EAF-02, EU-LMF and EU-VAD
FG-SHOP (Roof Monitor)	The shop roof monitor is above the EU-EAF-01, EU-EAF-02, EU-LMF, and EU-VAD. Fugitive emissions from all of these processes are emitted through the shop roof monitor.	EU-ROOFMONITOR, EU-EAF-01, EU-EAF-02, EU-LMF and EU-VAD
FG-FACILITY	All equipment at the facility including the FG-EAF, FG-EAF/LMF/VAD and the equipment covered by other permits, grand-fathered equipment and exempt equipment.	EU-EAF-01, EU-EAF-02, EU-LMF, EU-VAD, EU-HTOV001,EU-ROOFMONITOR, EU-AF01, EU-AF02, EU-binfilter, EU-limeBH, and EU-COLDCLEANERS
FG-RICE	Four (4) Compression Ignition Emergency Generators and Two (2) Spark Ignition Emergency Generators subject to the RICE MACT Requirements	EU-ENGINE1, EU-ENGINE2, EU-ENGINE3, EU-ENGINE4, EU-ENGINE5, EU-ENGINE6

Facility Background

GJ is a Secondary Steel Producer (Mini-Mill) that employs about 400 persons. The melt shop operates 5 to 6 days a week except Sundays, while the finishing shop operates 7 days a week. Typically, production occurs over three, 8-hour shifts. A heat typically lasts about an hour, and under normal operations, GJ can achieve 24-26 heats per day. Typical production as measured through the caster is 50 to 55 tons per hour. A "heat" refers to a batch of molten steel. In addition, "tap-to-tap" is used to define the start and end of a heat, which includes furnace charging, melting, refining, de-slagging, tapping (pouring of the molten steel to a ladle, etc.), and furnace turn-around. The facility primarily produces small bar steel having a diameter between 0.9 to 4.25 inches.

Scrap is selected from the various piles found in the facility's scrap yard and is loaded in a charge bucket. The charge bucket's bottom opens to load 1 of the 2 EAFs with cold steel and the melting phase begins once the operator strikes an arc on the scrap as the EAF electrodes are lowered into the furnace. The furnace is charged again with additional cold steel. The EAFs alternate operations, as only 1 EAF is charged at one time.

Once the molten steel is to spec, tapping occurs when the EAF is tilted and the steel pours into a ladle to transfer the molten steel to the ladle metallurgy furnace (LMF) for additional fine refining / secondary addition of alloys, and then to the vacuum arc degasser (VAD) for the injection of argon to stir the molten steel for additional refinement and removal of entrained gases using a steam vacuum system. After melting in the EAF's, approximately one percent by weight of carbon, manganese, silicon and a fraction of a percent of aluminum are added as alloys. Emissions from the EAFs, the LMF, and VAD are controlled by a positive pressure baghouse (DV-BH03).

(Note: The EAF's were installed in 1973 and were first permitted under PTI 239-75. PTI 535-96 replaced 239-75 and allowed a production rate increase although the capacity of the EAFs were not increased.)

(Note: Side draft hoods and canopy hoods associated with the EAFs are connected by ducts to a spark-arrestor

that subsequently connects to three separate fans, which are connected to the #3 bag house. The LMF is equipped with a hood that is fitted over a hot metal ladle. It is connected through ductwork to the #3 bag house. The VAD has a hood outside the vacuum chamber that collects fugitive emission released when the vacuum chamber is opened after a ladle is degassed. This hood connected is by ductwork to the #3 bag house.)

Next, the 50-ton ladle is transported to the caster area. (Note: Ladies do not have covers at this facility.) A 2 strand tundish feeds molten steel to a continuous caster. A conveyer transports the molten steel strands to a walking beam furnace for reheat. Then the strands go through 6 roughing mills, which slowly round out the strands. The finishing mills conduct additional rolling and fine adjusting, prior to being cut. The finishing department then polishes, inspects, and conducts heat treatment in the facility's annealing furnaces. The final product is banded and shipped offsite.

FG-EAF/LMF/VAD has a less than 6% opacity limit, except for one 6-minute average of not more than 10%, per SC III.1 and a 6% opacity limit at the FG-Shop (Roof Monitor), per SC III.1. The North roof monitor was sealed in 2011. The casting roof monitor is limited to a 20% opacity limit, per GC 11 but because opacity is entering from EAF area, it also subject to the more stringent requirement of 6%.

The Company reported the following, facility-wide total emissions for 2018: 673 tons CO, 70 tons NO_x, 15 tons PM₁₀, 33 tons SO₂, and 17 tons VOC. The facility reported emissions using CEMS, stack testing, and MAERS EFs. The Company's ROP does not specify facility-wide emission limits, but for comparisons, FG-EAF/LMF/VAD have the following limits, 280 tons per year (tpy) for SO₂, 148.4 tpy for NO_x, 1,400 tpy for CO, and 84 tpy for VOC.

Note: Main EAF bag house (referred to as the #3 bag house) ventilation system was upgraded December 2011. It was originally installed in July 2004. Capacity increased from 600,000 to 800,000 scfm. New fiberglass bags were installed in 2018.) The bag house consists of ten compartments for a total of 264 bags per compartment. Three (3) ID fans capable of moving a total of 828,000 acfm provide suction for capturing and moving the dust laden gases through the fume control system. Note: As part of this project, the North roof monitor was closed.

Summary of the reporting / submittal requirements and include the follow items listed below.

- Annual MAERS report.
- Annual and Semi-Annual ROP Certifications, per ROP requirements. Recent deviations, with additional comments available on the FCE report, include: Records for daily non-Method 9 reading were not taken for 1 day, per FG-SHOP SC VI.2 and no records were produced for daily preventative maintenance work on the baghouse for one day, per FG-Facility SC III.1.
- Quarterly EAF baghouse dust analysis, per FG-EAF/LMF/VAD SC VI.2.
- Quarterly Continuous Emission Monitoring System (CEMs) Excessive Emissions Reports (EER), per ROP Appendix 3. The facility measures SO₂ and CO emissions using CERMS, per ROP requirements.
- Semiannual mercury compliance reporting, per subpart YYYYY requirements.
- Stack testing test plan: every 5 years.

Stack Testing Summary:

May 6-9, 2014 Stack Test:

PM Limit 0.0052 gr/dscf Actual 0.0005 gr/dscf

PM-10 Limit 0.0052 gr/dscf Actual 0.0004 gr/dscf. Limit 24.7 pounds/hour Actual 1.78 pounds/hour.

Mercury Limit 0.026 pounds/hour Actual 0.004 pounds/hour

Manganese Limit 0.39 mg/m³ Actual 0.018 mg/m³. Limit 0.817 lbs./hour Actual 0.044 lbs./hour.

Lead Limit 0.28 pounds/hour Actual 0.006 pounds/hour.

NO_x limit 0.53 pounds/ton Actual 0.27 pounds/ton of scrap charged.

VOC Limit 0.30 pounds/ton Actual 0.11 pounds/ton of scrap charged.

Visible Emissions Limit 15% Melt Shop Roof Monitors/ 6% Bag house Actual 0%.

Mercury dust measured entering baghouse 3.1 mg/Kg

Manganese dust measured entering baghouse 34,117 mg/Kg

Lead dust measured entering baghouse 4852 mg/Kg

Average flowrate through bag house 640,185 dscfm.

June 8-9, 2011 Stack Re-Test for 40 CFR 63 Subpart YYYYYY Compliance

PM Limit 24.7 pounds/hour Actual 0.4 pounds/hour Limit 0.0052 gr/dscf Actual 0.00008 gr/dscf.

Average flowrate through bag house 580, 894 dscfm

January 19-20, 2011 Stack Test for 40 CFR 63 Subpart YYYYYY Compliance after bag house upgrades. Results not valid.

Pre-Inspection Meeting

We held a very brief meeting with CM. I listed to CM where I wanted to inspect which included the new castor roof monitor baghouse, the TMS slag handling facility, former location of their torch cutting operation, the roof adjacent to the Melt shop where the entire facility is visible, the EAF area and Melt Shop open bay.

CM noted that outdoor torch cutting had ceased at the facility permanently on March 20, 2019. He also mentioned that the facility is currently operating EAF #2 and there are no plans to resume operation of EAF #1 due lack of orders for steel and the overall poor recent steel market for the type of steel that they produce.

Onsite Inspection

Below is an evaluation of the compliance requirements for each regulated emission unit evaluated. Attached to the report is a sampling of the records that were reviewed to determine compliance with each emission unit.

Note: Required personal protection equipment to fulfill the safety requirements of the Company includes long pants, steel toed boots or closed toe hard sole shoes, no jewelry, safety glasses with side shields, green fire protection jacket, hearing protection, hard hat with chin strap and high visibility vest.

EU-HTOV001 Status: Compliant

Emission unit includes one 30mmBtu/hr. heat treat furnace known as the "old Salem" furnace. This furnace is located in the main building down line from the rolling mill.

Emission Limits - Monitoring/Recordkeeping

Restricts NOx emissions to 18.4 tons per 12-month rolling time period. Compliance is based upon the requirement to maintain records of natural gas usage on a monthly and 12-month rolling time period basis and calculate NOx emissions based upon an emission factor of 140 pounds per million cubic feet of natural gas burned.

Review of requested records for the past 12-months showed compliance with the NOx emission limit. 1.98 tons was the highest 12-month rolling NOx emissions reported in November 2018.

4.27 MMCF was the highest 12-month rolling natural gas usage reported in Dec 2018.

Other Requirements

Prohibits direct venting of the furnace to the outside atmosphere.

EU-AF01 Status: Compliant

Emission unit includes one 60.2mmBtu/hr. annealing furnace (Furnace #1) located in the detached finishing building, which is south of the main building.

Emission Limits - Monitoring/Recordkeeping

Restricts NOx emissions to 4.92 pounds per 24-hour period and 22 tons per 12-month rolling time period. Also restricts CO to 20 tons per 12-month rolling time period. Compliance is based upon an annual and 24-hour time period natural gas usage restriction. The facility is required to determine hourly gas usage based on a 24-hour average and use established emission factors to calculate and maintain records of NOx and CO emissions,

along with natural gas uses on a monthly basis.

Review of requested records for the past 12-months showed compliance with the NOx and CO emission limits, as well as the natural gas usage limit. Daily NOx emissions are below the 4.92 pounds per hour. 7.34 tons, highest 12-month rolling NOx emissions reported for April 2019. 6.81 tons, highest 12-month rolling CO emissions reported for April 2019.

EU-AF02 Status: Compliant

Emission unit includes one 38.4mmBtu/hr. annealing furnace (Furnace #2) located in the detached finishing building, which is south of the main building.

Emission Limits - Monitoring/Recordkeeping

Restricts NOx emissions to 3.12 pounds per 24-hour period and 13.9 tons per 12-month rolling time period. Also restricts CO to 15 tons per 12-month rolling time period. Compliance is based upon an annual and 24-hour time period natural gas usage restriction. The facility is required to determine hourly gas usage based on a 24-hour average and use established emission factors to calculate and maintain records of NOx and CO emissions, along with natural gas uses on a monthly basis.

Review of requested records for the past 12-months showed compliance with the NOx and CO emission limits, as well as the natural gas usage limit. Daily NOx emissions are below the 3.12 pounds per hour. 3.70 tons, highest 12-month rolling NOx emissions reported for Feb 2019. 3.92 tons, highest 12-month rolling CO emissions reported for Feb 2019.

Other Requirements

Prohibits direct venting of the furnace to the outside atmosphere.

FG-EAF Status: Compliant.

Flex group includes two 50-ton capacity electric arc furnaces that are controlled by positive pressure bag house (DV-BH03). The facility operates the furnaces simultaneously although charging is restricted to one at a time.

The lid of each EAF is equipped with a side-draft hood ducted to the bag house and a canopy hood system above each EAF is ducted to the bag house to control any fugitive emissions emitted from the EAFs.

Material Limits/Recordkeeping

Restricts the metal charge rate to the furnaces to 1,920 tons per day and 560,000 tons per 12-month rolling time period. Compliance is based upon the requirement to maintain charge records based upon a daily average and 12-month rolling time period.

Review of requested records for the past 12-months showed compliance. Daily scrap steel charged to FG-EAF was below 1,920 tons, with a 957 tons / day reported highest for March 2018. 254,00 tons was the rolling average total for the last 12 months.

FG-EAF/LMF/VAD Status: Compliant.

Flex group includes the two EAFs (EU-EAF-01, EU-EAF-02) the ladle metallurgy furnace (LMF) (EU-LMF), and the vacuum arc degasser (VAD) (EU-VAD). All emission units within the flex group are controlled by the No. 3 positive pressure baghouse.

The LMF and VAD are located west of the EAFs with emissions routed to the baghouse via a duct that travels from the processes along the east side of the outside of the building.

Overall inspection impression of the EAF's were that they appeared to be in poor shape with excessive amounts of smoke/flames being generated even when the EAF lid was closed. Side draft hoods appear to poorly control the emissions generated with most emissions instead appearing to be captured by the canopy hoods. (Note: Only EAF #2 was operating during the inspection. EAF #1 is generally no longer being used but is still fully functional.)

Emission Limits

Restricts emissions of PM, PM-10, SO2, NOx, CO, VOC, Pb, Mn and Hg.

Compliance is based upon the requirement to conduct performance emission testing every five years for all

regulated pollutants, except for CO and SO₂, for which the facility monitors via CEMRS.

The ROP requires stack testing once every 5 years, for which the facility conducted in the first quarter of 2014. Stack testing was also conducted in 2008, with additional PM testing associated with Subpart YYYYYY conducted in 2011. Finally, further testing was conducted in January 2019 and more is scheduled in October 2019.

Note: The permit requires the monitoring of the CO and SO₂ emission rate with a CERMS. The Time Period/Operating Scenario contained in the emission limits table has a "daily average" for SO₂ and "Test Method" for CO. The permit requires the facility to calculate and maintain records for SO₂ in pounds per ton on a daily average and CO in pounds per ton on a monthly basis.

NO_x, VOC, Mn and Hg emission rates in tons per 12-month rolling time period are required to be calculated at the end of each calendar month, utilizing emission factors based on testing.

Facility records for the past 12 months demonstrate compliance with the 12-month rolling average.

Restricts opacity from Baghouse No. 3 to a 6-minute average of 6% opacity, except for one 6-minute average per hour of not more than 10% opacity.

The facility conducts and records daily non-certified VE readings. If opacity issues are noted, Method 9 readings are conducted. Facility records do not show any recent opacity issues. Condition VI.4 requires the permittee to conduct non-certified visible emission reading(s) for FG-EAF/LMF/VAD from DV-BH-3 especially during charging at least once per operating day. The intent of this condition is to look for opacity when the most smoke is being generated from the EAF's. I discussed this issue with the EAF operators during a previous inspection. They indicated that for each melt there are 2 charges. The first charge goes into an empty EAF chamber (no initial steel "heat" is used). Significant smoke isn't generated until the second charge with new scrap metal being added to the partially melted metal already in the EAF. It is during the second charge when the most smoke is generated.

Requires the facility to implement and maintain screening and material management plan to control mercury or other toxics and VOC emissions resulting from contaminated scrap.

The facility has a scrap management program as required by Subpart YYYYYY. Compliance with the NESHAP requirements also demonstrates compliance with the ROP scrap management condition.

Design/Equipment Parameter(s)

Requires that the FG-EAF/LMF/VAD not operate unless their associated exhaust capture systems and ventilation hoods and the DV-BH03 are installed and operating properly.

The EAF control room pulpit was visited. The operators indicated that EAF #2 was operating. Attached photos show control screen readout taken during the inspection.

Monitoring/Recordkeeping

Requires the recording of the amount of manganese alloy added to the flex group.

The facility tracks the monthly manganese alloy usage and calculates usage for each process based upon a fixed percentage of the total used.

Requires the analysis of baghouse hopper dust at least once per month to determine the percentage of Pb, Mn and Hg and to submit a record of the concentrations to the District Office within 60 days.

Facility records show compliance with dust analysis requirement.

Requires the operation of a SO₂ and CO CERMS, from which the pounds per ton on a daily average basis and tons per 12-month rolling time period at the end of each calendar month is determined.

The facility had been calculating compliance with the SO₂ pound per ton limit based on a monthly average as opposed to the daily average requirement. However, as part of the CERMS data the facility has records of SO₂ pounds per ton on a daily average. The daily average demonstrates compliance with the limit.

SO₂ records demonstrate compliance. 33.89 tons was the highest 12-month rolling SO₂ emissions reported for March 2019. 668 tons was highest 12-month rolling CO emissions reported for January 2019. During the inspection, instantaneous CO values of 50.87 pounds/ hour and 9.4 pounds/ton of melt were noted. Instantaneous SO₂ values of 13.48 pounds/hour and 0.63 pounds/ton of melt were also noted.

41.3 tons was the highest 12-month rolling NOx emissions reported in November 2018. 16.83 tons was the highest 12-month rolling VOC emissions reported in Jan 2019. 0.14 tons was the highest 12-month rolling Mn emissions reported in September 2017. 0.011 tons was the highest 12-month rolling Hg emissions reported in Jan 2019.

Requires the facility to conduct daily non-certified VE observations as well as continuous pressure drop monitoring across the baghouse.

Staff observed records documenting compliance with the VE and pressure drop requirements. Baghouse pressure data were within the CAM limits of 2.5 through 15 inches of water. During the inspection, an averaged pressure drop across the ten compartments of 4.7" W.C. was noted.

CAM Status: Compliant

Within the flex group, EU-EAF-01 and EU-EAF-02 are subject to CAM for PM, which is also a requirement under Subpart YYYYYY.

CAM requires monitoring of both the control and capture system. CAM monitoring for the control device is accomplished through daily VE observations, pressure drop across the baghouse and baghouse operational inspections.

In regard to capture, the permit does not currently specifically address CAM; however, the facility monitors the flow rate as part of the CERMS. Upon renewal of the ROP, flow rate monitoring should be specified as CAM for furnace capture.

Under CAM the facility is required to submit a semiannual Excursion/Exceedance Report and a Monitor Downtime Report.

FG-SHOP (Roof Monitor) Status: Compliant

Flex group includes the shop roof monitor above EU-EAF-01, EU-EAF-02, EU-LMF, EU-VAD, and other shop processes.

The requirements of FG-SHOP are different than those of Subpart YYYYYY for emissions from the melts shop since the opacity limit in Subpart YYYYYY does not include emissions from the LMF or VAD.

The facility evaluates compliance with the opacity limit under FG-SHOP via observation of the Melt Shop roof. All roof monitors in the Melt Shop building are now sealed as of Fall of 2019 so little if any opacity is expected going forward.

Process/Operational Restrictions

Restricts opacity from the Roof Monitor to a 6-minute average of 15% opacity, except for on 6-minute average per hour of not more than 20% opacity.

Compliance is based upon the requirement to make daily non-certified observations and record those observations if VE is observed and Method 9 readings are taken.

The facility conducts daily non-certified VE observations and records the observations. The last time that Method 9 readings were made was August 2011, which was associated with Subpart YYYYYY testing.

FG-FACILITY Status: Compliant

EU-EAF-01, EU-EAF-02, EU-LMF, EU-VAD, EU-HTOV001, EU-AF01, EU-AF02, EU-binfilter, EU-limeBH and EU-COLDCLEANERS, EU-ROOFMONITOR. (Note: EU-COLDCLEANERS should be a separate emission unit with its own requirements in the next ROP. EU-binfilter is associated with the silo that stores the dust collected by the EAF/LFM/VAD bag house. The silo is briefly mentioned in the MAP required by FG-FACILITY. The silo bin vent is not listed as an exempt device in the ROP Staff Report and is subject Rule 331(1)(a) Table 31 (J). EU-binfilter requirements should be addressed in the latest ROP renewal application which has been received but not reviewed yet.)

Process/Operational Restrictions

Requires the facility to have a malfunction abatement plan (MAP) for the FG-EAF/LMF/VAD.

I previously requested that the facility submit the most recent MAP for FG-EAF/LMF/VAD to the district. The

facility supplied the MAP for FG-EAF/LMF/VAD dated March 24, 2013 and revised on May 5, 2017.

Requires the facility to have a fugitive dust program for plant roadways, plant yard and material storage piles.

I previously requested that the facility submit the most recent fugitive dust program to the district. The facility supplied the fugitive dust program dated February 1, 2013 and last revised July 22, 2013. Little or no dust was noted during the inspection. TMS International is responsible for conducting the fugitive dust control actions at the facility.

FG-RICE Status: Compliant

Four (4) compression ignition emergency generators and two spark ignition emergency generators subject to the requirements applicable to area source RICE MACT.

Process/Operational Restrictions

Requires non-resettable hour meters on each engine and maintenance records. Review of records shows compliance.

Subpart YYYYY – Area Source Electric Arc Furnace Steelmaking NESHAP: Status: Compliant

Currently the ROP only contains high level citations of applicability. Upon renewal of the permit, specific Subpart YYYYY emission unit should be added.

The facility is subject to Subpart YYYYY, which regulates scrap charged to the EAF, emissions from the EAF and opacity from the melt shop.

The facility is considered an existing source under Subpart YYYYY.

Subpart YYYYY contains provisions for a time extension to comply with the melt shop opacity limits. Under an extension, the compliance deadline can be delayed from June 30, 2008 to as late as December 28, 2010. The compliance testing deadline would then shift from December 27, 2008 until June 28, 2011. The facility requested and was granted a compliance extension. Due to the facility temporarily ceasing operations (January 18, 2009–September 14, 2009), the facility was granted an additional one-year extension to delay complying with the opacity limit until December 28, 2011.

The facility tested and demonstrated compliance with the MACT opacity limit in August 2011.

The facility conducted compliance testing for PM on March 26-27, 2008, at which time compliance was demonstrated (0.0003 gr/dscf). Retesting was conducted subsequent to the capture system modifications in January 2011. Testing showed a violation of the MACT limit and a VN was issued. Retesting was conducted in June 2011, at which time compliance was demonstrated. The January 2011 exceedance was attributed to testing issues in which the baghouse doors were open. Test ports were subsequently installed for the June 2011 testing.

Emission Limits

The EAF is subject to a PM emission limit of 0.0052 gr/dscf and the melt shop is subject to a fugitive opacity limit of 6%.

The facility has tested and demonstrated compliance with the PM and opacity limits.

Material Limits/Process

Contaminants in scrap, other than mercury:

Requires metallic scrap charged to the EAF to comply with either the Pollution Prevention Plan option regarding selection and inspection to minimize contaminants or Restricted Metallic Scrap option described in Subpart YYYYY.

Contaminants other than mercury

The facility is operating under an approved plan in accordance with Subpart YYYYY. The plan addresses the use of scrap under the selection and inspection option as well as Restricted Metallic Scrap. The facility inspects and maintains records of each load of incoming scrap. The facility's scrap plan addresses actions to be taken if a non-conforming scrap is brought onsite.

Mercury

The facility's plan addresses participation in the approved program option (NVMSRP). The facility maintains records of all scrap providers participation in NVMSRP and verifies compliance through onsite inspections of providers as well as verifying participation in the ELVS program semi-annually. The facility also purchases scrap from Canadian scrap suppliers that not part of the NVMSRP. The two Canadian suppliers are Whitby Recycling and Triple M Recycling. Both providers have a site-specific plan in plan. However, the facility did not purchase shredded car scrap from the Canadian facilities in 2017.

Reporting

Subpart YYYYY requires the submittal of semi-annual compliance certifications.

Review of the facility's file shows that they have been submitted semi-annual certification in accordance with Subpart YYYYY.

TMS International-Slag handling facility (Operated by TMS but on Gerdau's property.) Status: TMS International Compliant; Gerdau Non-Compliant.

No dust was noted during this inspection although it was not in operation during the time of inspection. Production here is down due to operation of only one EAF which is cutting down on

Some white smoke was seen coming from a pile of slag. As noted during previous inspection, Gerdau employees have been adding wood pallets, plastics and other trash from the Melt Shop floor into the slag just prior to being removed from the facility and delivered to TMS. Due to the intense heat of slag, the trash catches fire or smolders while in a pile waiting to be processed. She indicated that they have no control over what Gerdau puts into the slag. This dispose method is considered open burning. **Non-Compliance.**

TMS International PTI 146-19 was also reviewed for compliance. The following tables shows the amount of production in 2019:

January 2019	Plant Processed	5,583.00	Tons
February 2019	Plant Processed	5,479.00	Tons
March 2019	Plant Processed	6,505.00	Tons
April 2019	Plant Processed	5,825.00	Tons
May 2019	Plant Processed	6,415.00	Tons
June 2019	Plant Processed	5,686.00	Tons

Cutting Area: Status:

The Company use to have 4 permanent torch cutting stations each station equipped with multiple torches. The cement bunker like stations were still there but they didn't contain any torches. All outdoor torching cutting ceased in March 2019 and is not expected to resume again.

Roof/Melt Shop Perimeter Inspection Status: Non-Compliant.

The roof to the building that is attached/just East of the Melt Shop building was accessed. This roof is considerably lower than Melt Shop roof. A caged ladder access to the Melt Shop roof from the adjacent building is located just to the East of the continuous caster machine area.

No smoke was observed from the Melt Shop Roof. No dust or fallout was noted although the Melt Shop roof could not be accessed.

Smoke was observed coming from a small vent hidden behind a much larger abandon vent pipe that had been sealed. Later investigation revealed that this small vent was coming from an oil mister process associated with Castor. The emissions consist of burned oil. Opacity was estimated to be easily in excess of 20%. CM promised quick action to resolve this issue. An obvious solution would be to simply redirect emissions to inside the Melt Shop where they would be captured by the Castor baghouse.

(On September 24, 2019, received the following email from CM:

"The pipe vent of the caster oil mist system has been removed and run to the canopy to be captured by the

Caster Baghouse, please see the attached photo.

The way the system was explained to me, there is a clamping mechanism to hold the billets from the caster in place while being cut. This clamp has an oil/mist system to ensure that the clamp does not lockup on the billet. There is a vent for this application which is what you saw at the beginning of the month. We have removed that vent pipe and moved it to evacuate into the caster baghouse.")

EPA Consent Decree 18-1228: Compliant

This Consent Decree required installation of the new Caster Monovent Baghouse. Inspection of the baghouse showed that it appeared to be operating properly with no opacity noted coming out the stack. Baghouse fines were being collected in a single dumpster like bin with no spillage of material noted on the ground. CM provided the Operating/Service Manual for this baghouse which is attached to this report. It contains the specific design details of the baghouse.

The EPA Consent Decree was reviewed to determine if the Company is in compliance with all the requirements. They provided to me the latest EPA progress report which shows compliance. It is part of the attachments included with this report.

Post-Inspection Meeting

We returned to a conference room and held a brief post-inspection meeting.

I indicated that I had concerns about open burning that was observed and the smoke coming from the oil mist system associated with the Castor. We thanked CM for his cooperation and assistance and departed the facility at approximately 11:30 am.

Compliance Summary

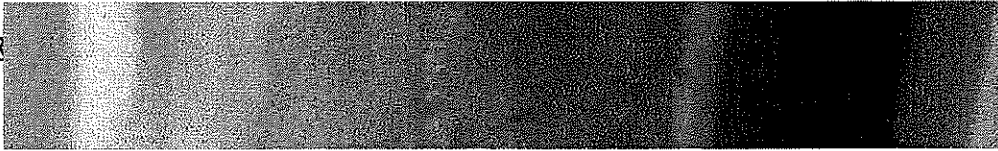
Based upon the visual observations and the review of the records, the Company appears to be in substantial compliance with the requirements of their ROP. However, there are two outstanding compliance issues.

- 1) Open burning associated with the slag handling operation is in violation of Rule 310.
- 2) Opacity in excess of 20% coming from a small vent associated with the Castor oil mist system. which is a violation of Rule 301.

A Violation Notice (VN) will be sent to the company and they will be given 21 days to respond.



Image 1(F



the caster.



Image 2(New stack-blower) : New stack-blower associated with new castor monovent baghouse.

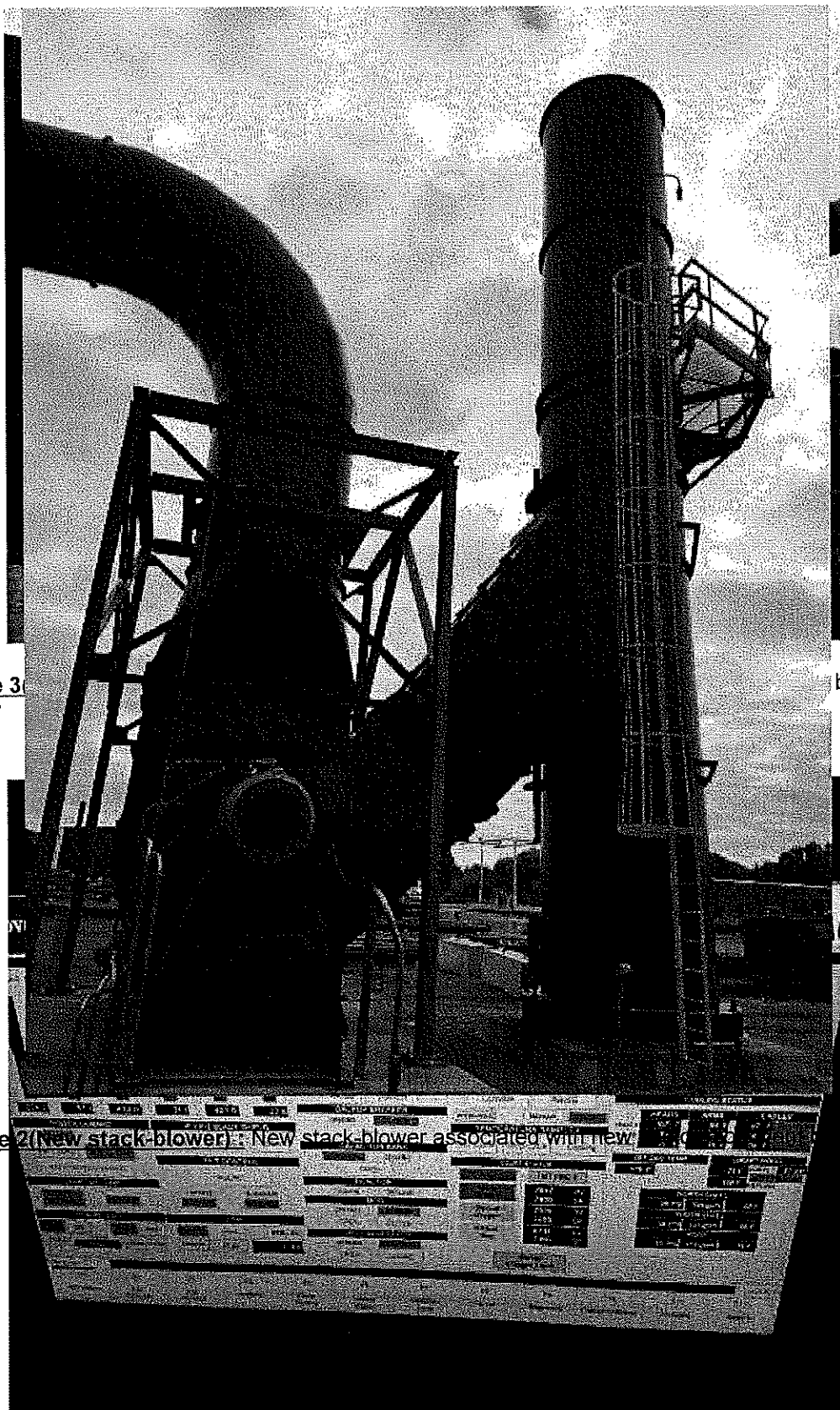


Image 3

building.

Image 2(New stack-blower) : New stack-blower associated with new

house.

Image 4(EAF 2 Screen) : Control panel screen shot of EAF 2.

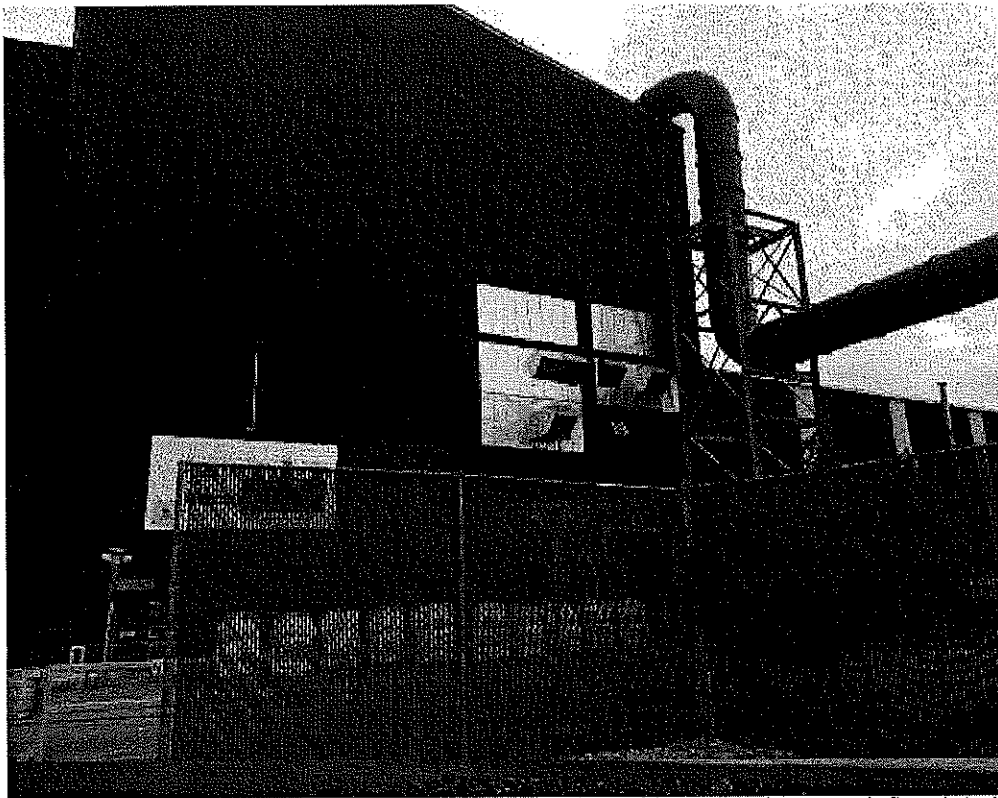


Image 3(Southside-new siding) : New panels installed on side wall to improve inflow into building.

Image 5(Dust dumpster) : Dust bin associated with new caster monovent baghouse.

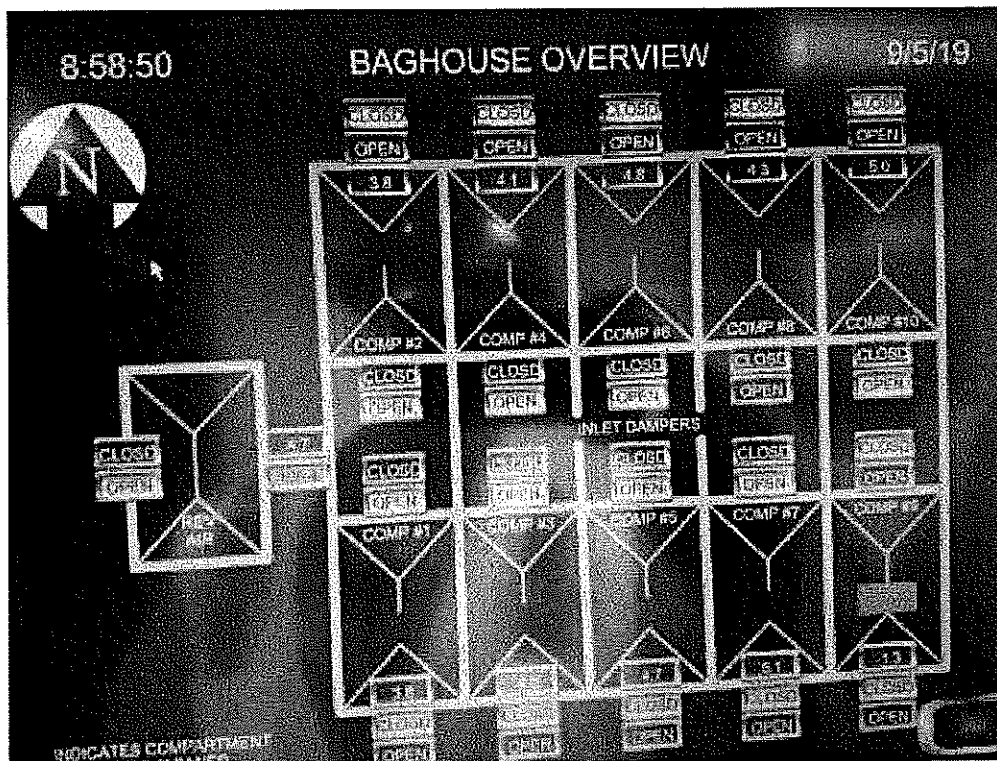


Image 6(Baghouse overview) : Control panel screen shot of EAF baghouse showing pressure differentials by compartment.



Image 5(Dust dumpster) : Dust bin associated with new caster monovent baghouse.

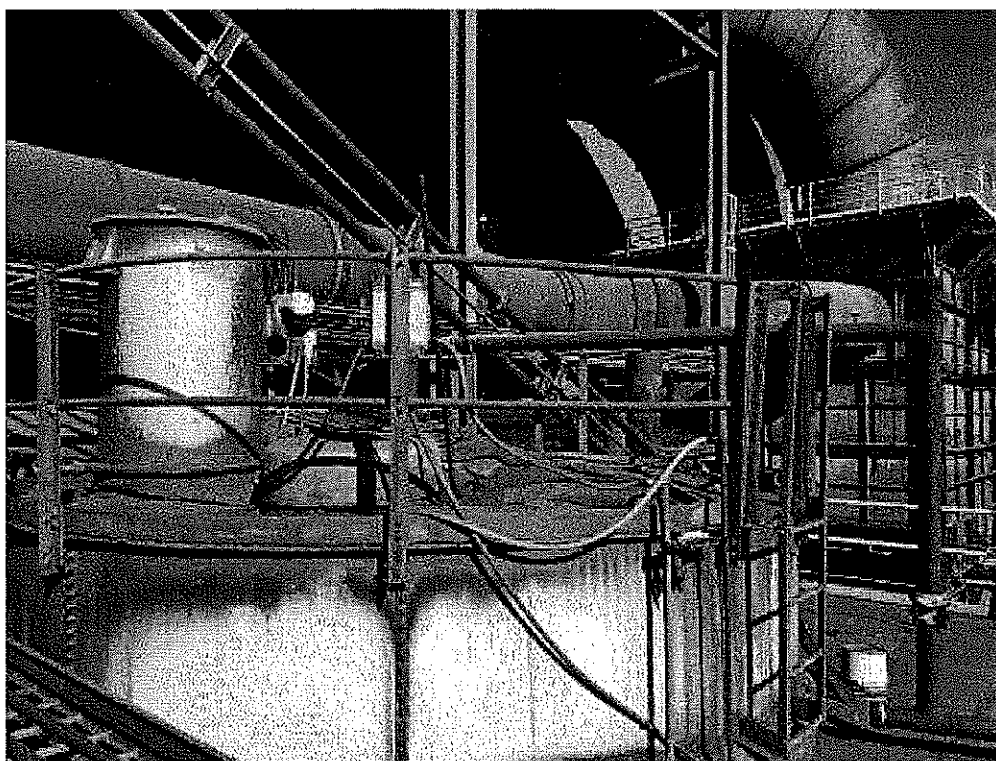


Image 7(Carbon bin) : Carbon bin on roof with some accumulated solids.

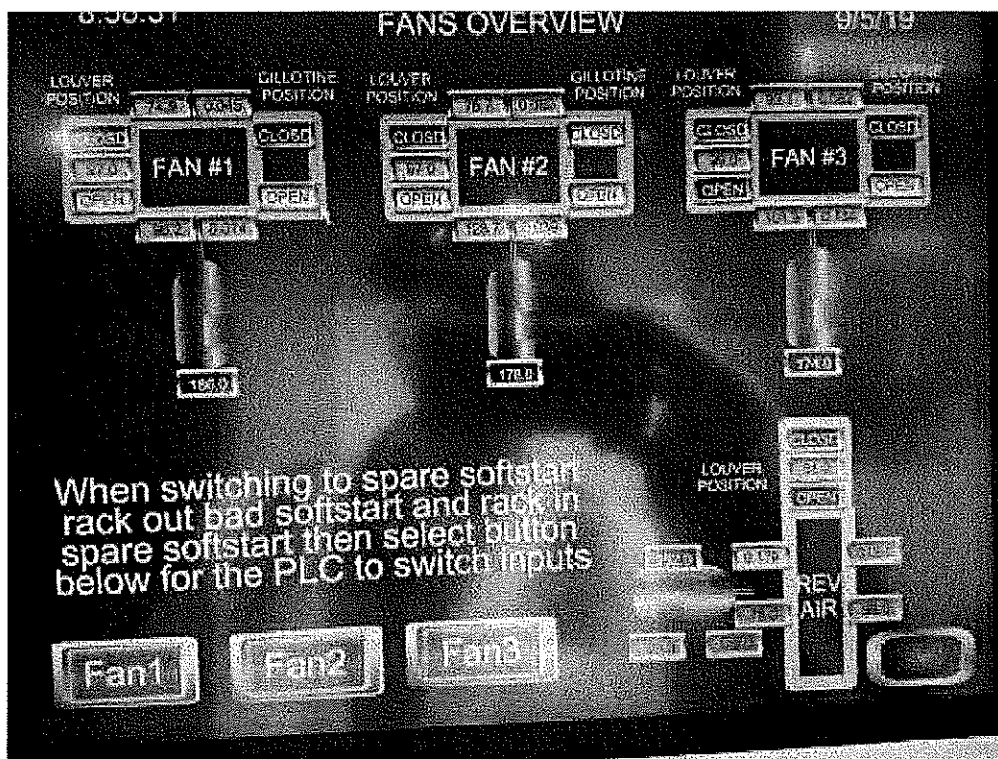


Image 8(EAF Baghouse fans) : Screen shot of control panel for EAF baghouse showing all three fans on.



Image 9(Lime area) : Door to lime bin showing minor amounts of lime spread beyond door.

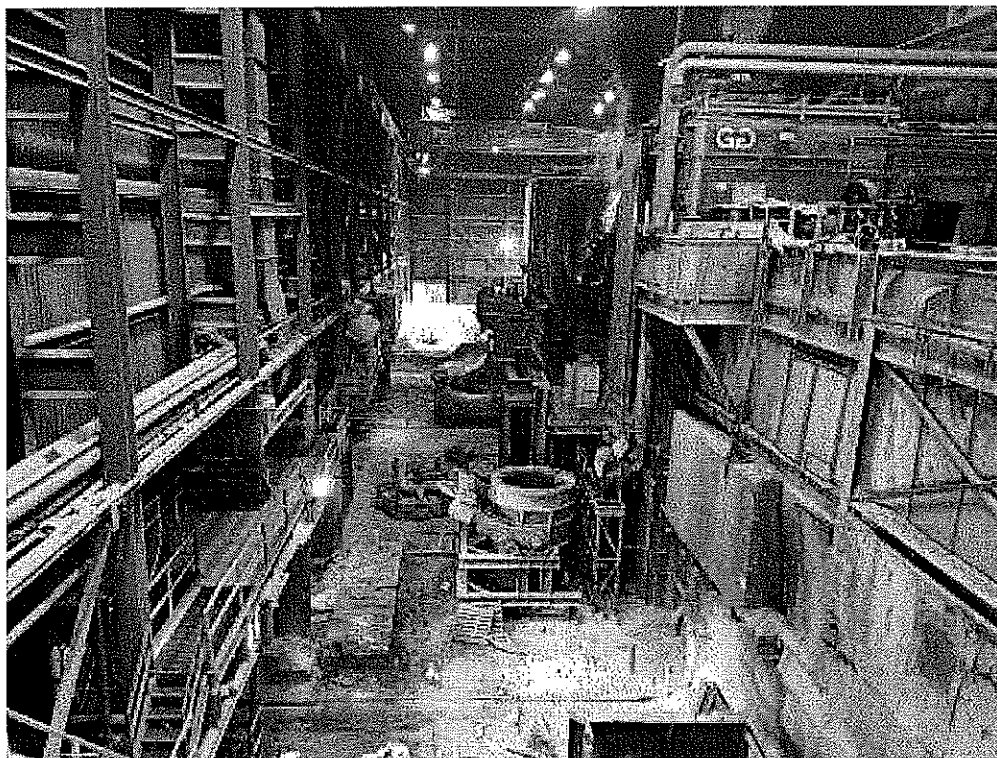


Image 10(Melt Shop bay) : Melt Shop main bay showing good visibility.



Image 11(Slag pile) : Slag pile near TMS slag processing facility with minor fire due to burning wood.



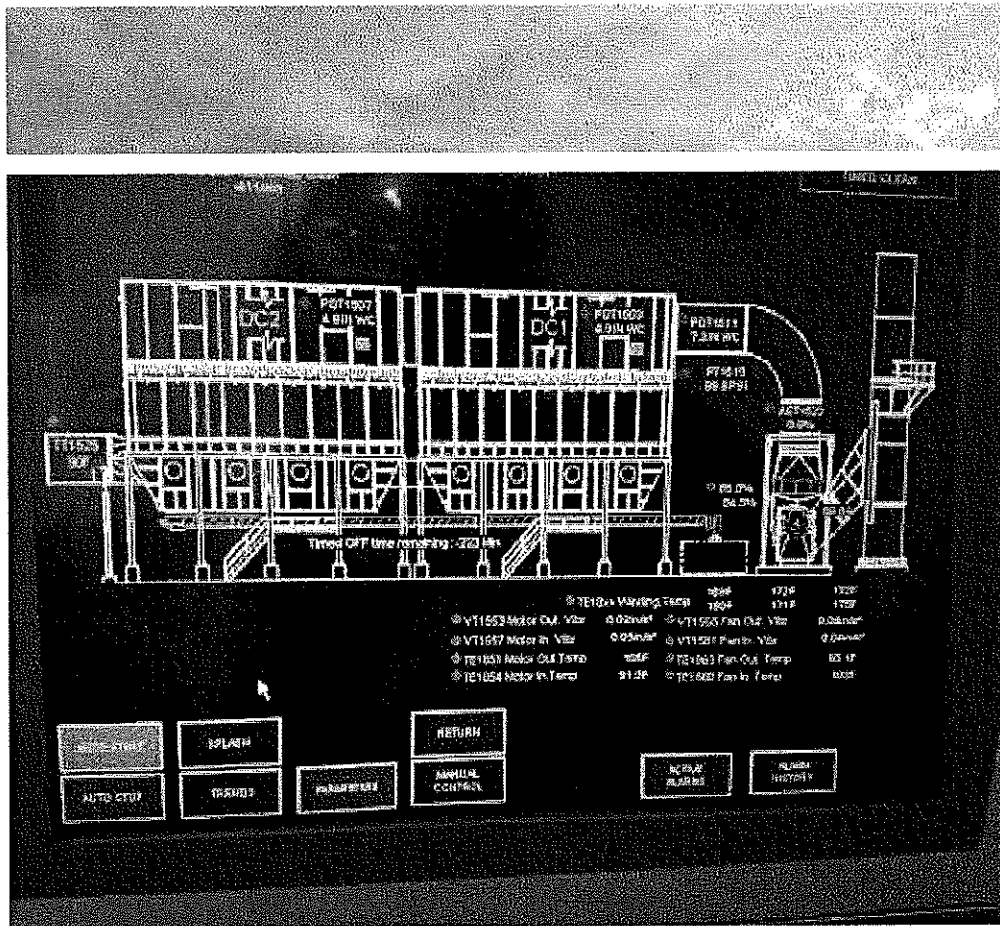


Image 13(Caster baghouse) : Caster baghouse control panel showing differential pressures.

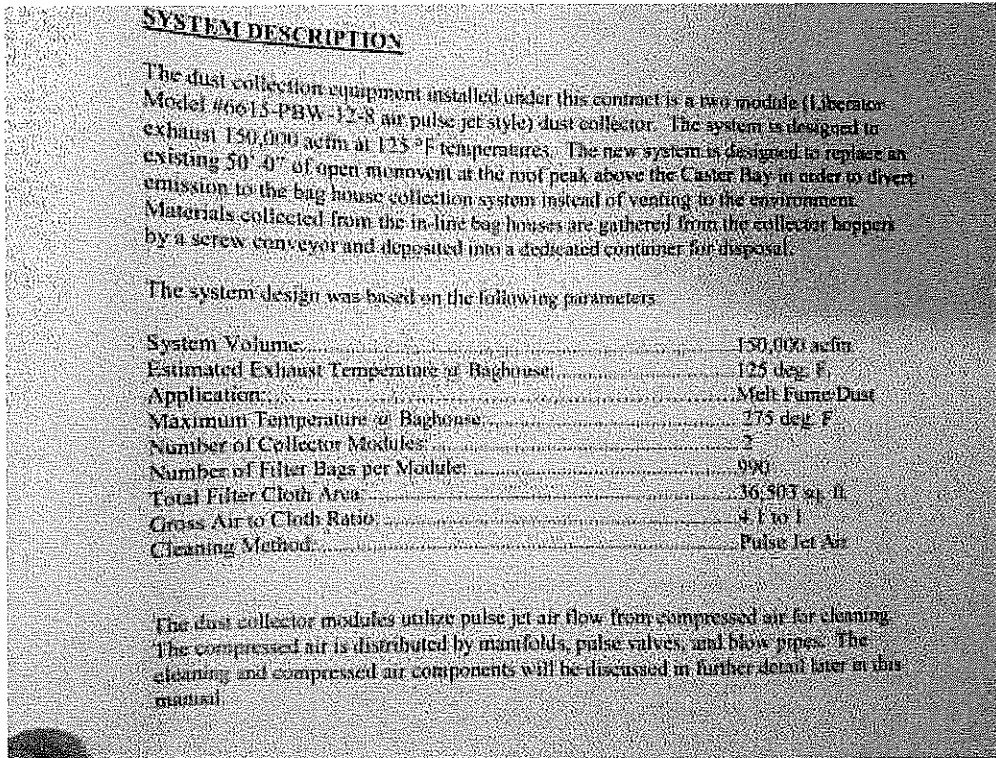


Image 14(Caster baghouse) : Spec sheet for new caster baghouse.

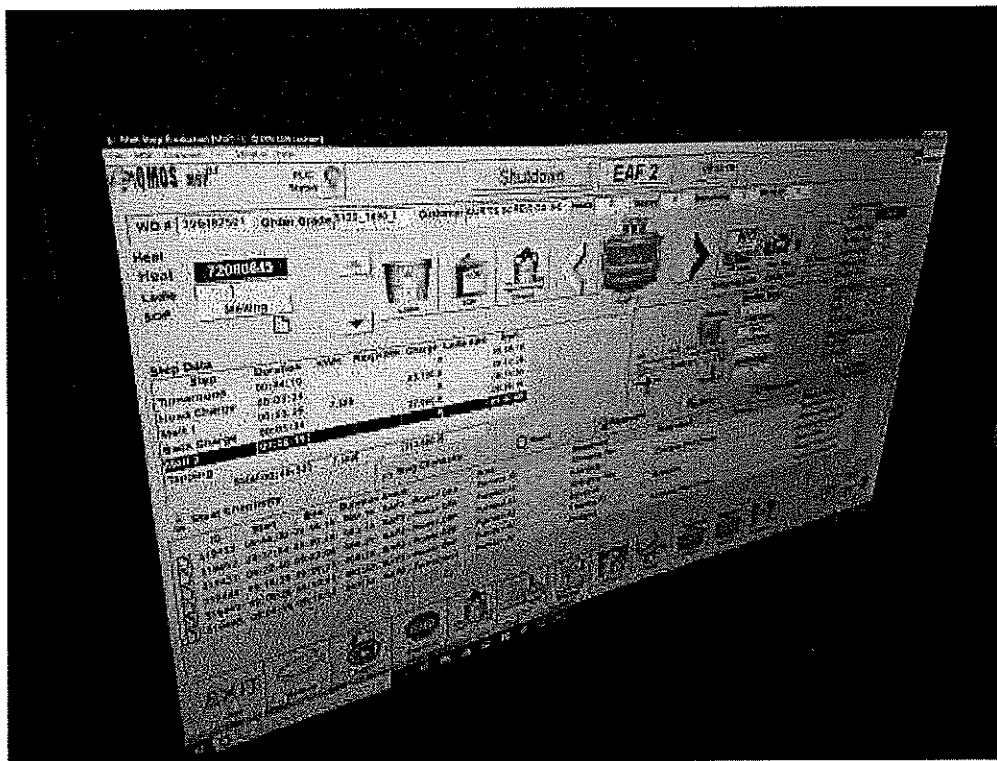


Image 15(EAF 2 Control Panel) : Screen shot of EAF 2 control panel showing back charge in progress.



Image 16(EAF 2) : EAF 2.

MAIN					
FAN SPEEDS 0-100%			AVERAGE FAN SPEED	CASTE	
FAN #1	100		100	24	
FAN #2	100				
FAN #3	100				
			CALCULATED SCFM		
			545170		
DATE TIME STAMP					
		SO2	CO	DATE	TIME
CURRENT RAW	2.37	45.55	9/5/2019	9:23:44	
CURRENT VALID	2.32	23.60	9/5/2019	9:23:44	
5 MINUTE AVERAGE	2.25	20.62	9/5/2019	9:23:29	
15 MINUTE AVERAGE	2.09	20.44	9/5/2019	9:12:08	
30 MINUTE AVERAGE	1.80	22.76	9/5/2019	8:59:29	
1 HOUR AVERAGE	2.98	60.99			
LB/HOUR (SCFM)	13.48	50.87			
Monthly Charge Tons	1110.3	10468.7	9.4	539.71	0.63
Monthly CO lbs					
Monthly CO lbs / Ton					
Monthly SO2 lbs Total					
Monthly SO2 lbs / Ton					
CALIBRATION CALIBRATION MAINTENANCE LOW AIR FLOW SYSTEM AT A					

Image 17(EAF CEMS) : EAF CEMS report.

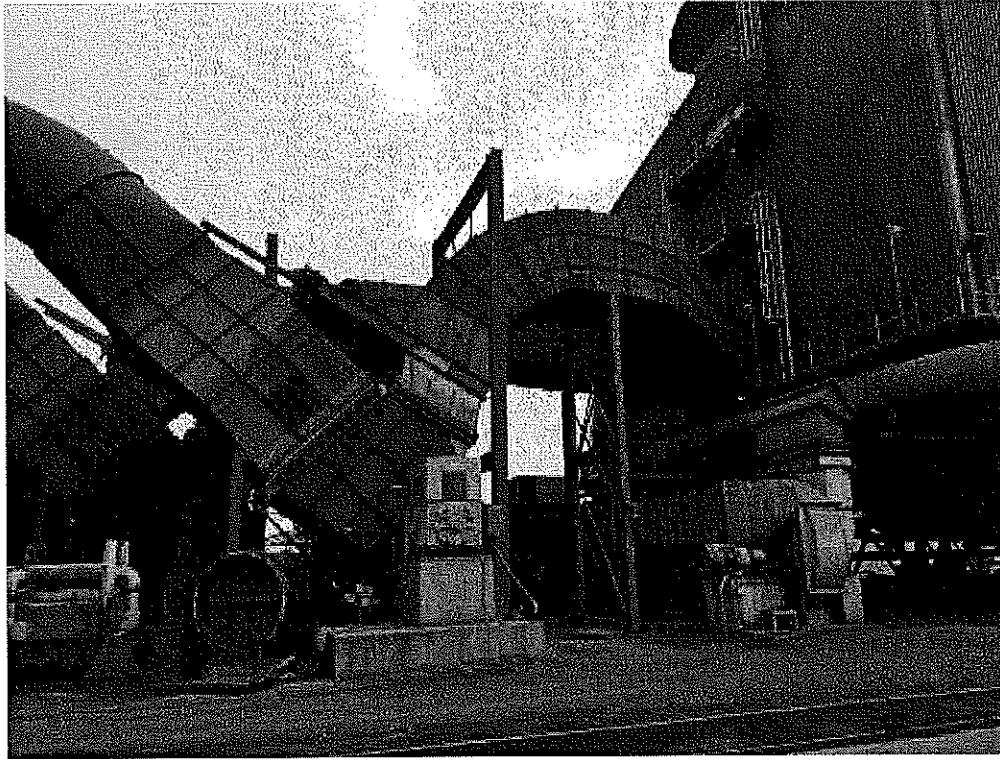


Image 18(EAF Main baghouse) : EAF main baghouse.

NAME M. Kowalchuk

DATE 9/24/19

SUPERVISOR [Signature]