

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

A864044942

FACILITY: AK STEEL - DEARBORN WORKS		SRN / ID: A8640
LOCATION: 4001 MILLER ROAD, DEARBORN		DISTRICT: Detroit
CITY: DEARBORN		COUNTY: WAYNE
CONTACT: James E. Earl , Environmental Manager		ACTIVITY DATE: 06/27/2018
STAFF: Katherine Koster	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: FY2018 Targeted Inspection - C Blast Furnace		
RESOLVED COMPLAINTS:		

**Reason for Inspection: Targeted Inspection**

**Level of Inspection: PCE**

**Inspected by: Katie Koster, AQD**

**Personnel Present: Jim Earl, Environmental Manager; Dave Pate, Environmental Engineer**

**Facility phone number: 313-323-1261**

**Facility fax number: 313-337-9395**

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**FACILITY BACKGROUND**

AK Steel – Dearborn Works (formerly Severstal Dearborn, LLC) is an integrated iron and steel mill which primarily produces flat rolled coils. The facility is operating at 4001 Miller Road, Dearborn. The previous address, 3001 Miller Road, has been given to the Ford Motor Company Rouge Plant which is adjacent to the mill. The company was previously operating under the name Severstal Dearborn, LLC until it became AK Steel Dearborn Works in October 2014. Before being purchased by Severstal in 2004, the company was operating as Rouge Steel.

**REGULATORY ANALYSIS**

AK Steel is currently operating under MI-ROP-A8640-2016a and PTI’s 120-16, 84-11, and 8-08A. The facility is operating under Consent Decree Civil Action No. 15-cv-11804 issued on August 13, 2015 and AQD Consent Order 6-2006. One of the underlying permits that was incorporated into the ROP, PTI 182-05C, is the subject of a lawsuit in the Wayne County Circuit Court. As such, this permit was not voided when it was rolled into the ROP.

The C blast furnace process is subject to the Integrated Iron and Steel MACT (Subpart 5F) and the RICE MACT and NSPS JJJJ for emergency generators which operate to service the blast furnace.

**PROCESS DESCRIPTION**

The processes discussed and/or observed during the inspection are described below. This does not include the entire facility.

**C Blast Furnace –** This emission unit consists of the “C” Blast Furnace proper, a group of 4 stoves with a common stack, the cast house emission control system (collection hoods followed by a baghouse and stack), a blast furnace gas dust collector and venturi scrubber for removal of particulate from blast furnace gas generated by the “C” Blast Furnace, a semi-clean bleeder, and two dirty gas bleeders. “C” Blast Furnace is controlled by a baghouse. There is low-NOx technology on the stoves and a mechanical collector and venturi scrubber for blast furnace gas pre-cleaning.

Iron ore is converted to pig iron in the furnace. Raw materials are iron ore, metallurgical coke, limestone, and BOF slag and scrap. Coke provides heat for the reaction and the carbon need to reduce the iron ore. Metallurgical coke also has enough strength to withstand the high pressure and temperature in the furnace and provides structural support to the burden. Pulverized coal is blown into the furnace through the tuyeres as a fuel source. C furnace has two tapholes; east and north. This process is controlled by a baghouse during drilling, casting, slagging, and plugging the furnace. There are hoods over the taphole and the iron and slag tilting runners. Hot metal is cast into torpedo cars and transferred by rail to the Basic Oxygen Furnace building. Operators use natural gas suppression lances during filling so that they

can see the level of material in the torpedo cars and slag pots. Slag is collected in pots and dumped in the slag pits at the corner of Dix and Miller by Edw. C Levy company.

#### INSPECTION NARRATIVE

On June 26, 2018, I arrived at the AK Steel environmental offices around 9:15 a.m. and met Mr. Jim Earl, Environmental Manager, and Mr. Dave Pate, Environmental Engineer. Mr. Pate and I headed to the C Blast Furnace casthouse floor.

The C Blast Furnace has twenty (20) tuyeres and two (2) tapholes, north and east, which are normally alternated with each cast. Emissions are controlled by a 10 module pulse jet baghouse with two fans designed to meet a 98-99.99% control efficiency. On this date, maintenance work was finishing up on the east iron trough, so casting was occurring solely on the north taphole; typically, casts are alternated between tap holes.

C Blast Furnace has three bleeder valves which are emergency relief valves at the top of the furnace to relieve pressure in order to prevent a catastrophic event if pressure inside of the furnace gets too high. There is one semi clean bleeder (on the south side), and two dirty gas bleeders (north and south). Bleeders are programmed to open at certain set points; with the semi clean bleeder opening at a lower pressure than the dirty bleeders. According to the operator, the gas released from the semi clean bleeder has already passed through the dust catcher and partially through the venturi scrubber. There would not be a situation where the dirty gas bleeders would open before the semi clean. I reviewed the log of planned and unplanned bleeder openings (both semi clean and dirty) in the control room and requested a copy of all openings, duration, and reason for the opening for the time period of January 2017 - present.

The dust catcher is emptied every 10 minutes and pressed down with water. Once the bin is full, it is cleaned out with front end loaders. An alarm is sounded for those in immediate area to evacuate as there could be a CO hazard.

Cast times range from 45 minutes to several hours; slag starts flowing within 45 minutes to 1.5 hrs. into the cast. Once the tap hole is plugged, iron can still run for 10 – 15 minutes. According to Stuart, the blast furnace manager, this is why operators leave the dampers open for a period of time even after the tap hole is plugged.

A 10 module pulse jet baghouse controls emissions during casting. There is a bag leak detector present in every compartment. It is set to alarm when the reading is above 60% for 45 seconds. According to the facility, the baghouse is always in operations, i.e. fans are running and dampers are open to some degree, regardless of whether casting is occurring.

We proceeded to the casthouse; casting at the north taphole was underway. Iron and slag flow from the taphole into the iron trough. Slag floats on top. Once the molten liquid hits the dam, slag flows one direction into the slag runner; iron flows down the iron runner. There is a tilting runner/spout for pouring iron and slag into one of two vessels.

Cast # CN181849 started at 10:34 a.m. 6000-7000 tons per day is maximum iron production rate at the moment; on a slow day the iron production is around 5500 tons. Bleeder set points were the same as the prior inspection: 23 psi (semi clean), 27 psi (dirty North), 29 psi (dirty South). I observed the cast for about 20 minutes and the smoke appeared to be very well captured by the hood over the taphole. There are also hoods over the torpedo car filling area and the slag pots. The damper positions are manually initiated by the operators by choosing from the following operating modes: idle, drilling, casting, and slagging. Before the baghouse was installed in 2007, natural gas suppression was used for emissions control. Natural gas consumes the oxygen so that the iron cannot react with the oxygen and create a fume. Dampers were in slag mode for the north side and idle for the east side. Runner covers were in place on the north side. I recorded the following operating parameters in the control room:

Wind rate – 120KSCF  
Hot Blast P – 41 psi  
Hot Blast T – 2048F  
Top Pressure – 13.72 psig  
Iron Temp – 2634F

For the baghouse, I recorded the following values. All individual compartment pressure drops were between 2.8 and 4.8. Numbers in parenthesis are values recorded during the last inspection:

	<b>Overall</b>	<b>A</b>	<b>B</b>
Pressure drop	8.1 in w.c. (8.4)		
Fan speed	Did not record as facility is tracking inlet pressure as of January 2015. This is allowed per MACT 5F.		
Compressed air	124.1 (132.1) psi	N/A	N/A
Inlet T	137.4 (122.6)		
Inlet P	-7.5 in w.c. (-3.2)	-7.9	-8

We left the casthouse and walked around the baghouse. I observed the exterior shell, fan housing, ductwork, and stack as well as the dust bins and hose connections to the bins. No leaks were observed. Equipment appeared to be in good condition.

We returned to Mr. Pate's office where we discussed record keeping requirements, and he presented some records that I requested. Next, I accompanied the VE reader, Mr. Robert Bingham, to read the blast furnace roof monitor. I spoke with Mr. Bingham and Mr. Pate. They both stated that any openings in the casthouse were read during the roof monitor readings. This is correct as the opacity limit is based on "any opening" in the casthouse. Also Mr. Pate and I were in agreement that the periodic VE readings that are required in the ROP/Title V permit should be read over an entire cast to observe the drilling up and plugging of the tap hole which are the operations with the potential to generate the most emissions during casting.

We observed raw material handling area from across the boat slip. Hoppers are inside of the building. The front end loader is following the "recipe" received from operations.

I took visible emissions readings of the north casthouse roof monitor from 1:38 p.m. to 2:45 p.m. No visible emissions were observed.

**RULES/PERMIT CONDITIONS EVALUATED**

MI-ROP-A840-2016a

B Blast Furnace Cast House (EUBFURNACE) – NOT APPLICABLE. No plans to rebuild the furnace are underway at the moment.

**EUCFURNACE**

**I. EMISSION LIMITS – IN COMPLIANCE.** Compliance chosen for all limits in the table below. Basis for compliance status is in the Compliance Status column.

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	COMPLIANCE STATUS - COMPLIANCE for all limits in the table
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Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	COMPLIANCE STATUS - COMPLIANCE for all limits in the table
1. Visible Emissions	10% Opacity <sup>2</sup>	6-minute average	EUCFURNACE Baghouse stack	SC V.7, VI.2	No visible emissions were observed during the inspection from the baghouse stack. Also, a review of the monthly M9 readings by the certified VE reader indicates that no emissions have been observed.
2. Visible Emissions	20% Opacity	6-minute average	EUCFURNACE Secondary emissions exiting any opening	SC V.1, V.3, V.4, V.5	Did not observe any emission from the north casthouse during casting and while taking VE readings.
3. Visible Emissions	20% Opacity <sup>2</sup>	6-minute average	EUCFURNACE Roof monitors	SC V.7, VI.3	Did not observe any emission from the north casthouse during casting and while taking VE readings. Also, no exceedances have been observed during the weekly readings
4. Visible Emissions	20% Opacity <sup>2</sup>	6-minute average	EUCFURNACE "C" furnace bleeders	SC VI.4	No visible emissions were observed during the inspection from the bleeders. The bleeders were closed. Also, a review of the M9 readings by the certified VE reader indicates that no VE exceedances have been observed.
5. PM	0.003 gr/dscf <sup>2</sup>	Test Protocol*	EUCFURNACE Baghouse stack	SC V.7	PM emission rate was 0.00009 gr/dscf based on stack test performed in December 2014.
6. PM	0.01 gr/dscf	Test Protocol*	EUCFURNACE Baghouse stack	SC V.1	PM emission rate was 0.00009 gr/dscf based on stack test performed in December 2014.
7. PM	13.87 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Baghouse stack	SC V.7	PM emission rate was 2.08 pph based on stack test performed in April 2017.
8. PM	6.98 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Stove stack	SC V.8	PM emission rate was 0.74 pph based on stack test performed in March 2017.
9. PM10	18.24 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Baghouse stack	SC V.7	PM 10 emission rate was 1.26 pph based on stack test performed in March 2017.
10. PM10	19.72 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Stove stack	SC V.8	PM 10 emission rate was 5.87 pph based on stack test performed in April 2017.
11. PM2.5	18.24 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Baghouse stack	SC V.7	PM 2.5 emission rate was 1.26 pph based on stack test performed in March 2017.
12. PM2.5	19.72 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Stove stack	SC V.8	PM 2.5 emission rate was 5.87 pph based on stack test performed in April 2017.

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	COMPLIANCE STATUS - COMPLIANCE for all limits in the table
13. SO <sub>2</sub>	179.65 pph <sup>2</sup>	Calendar day average	EUCFURNACE Baghouse stack	SC VI.6	From January 2017 through June 2018, the highest SO <sub>2</sub> pph on a calendar day average from the baghouse stack, as determined by the CEMS, was 106 pph. See attached.
14. SO <sub>2</sub>	193.6 pph <sup>2</sup>	Calendar day average	EUCFURNACE Stove stack	SC VI.6	From January 2017 through June 2018, the highest SO <sub>2</sub> pph on a calendar day average from the stove stack, as determined by the CEMS, was 106 ppm. See attached.
15. SO <sub>2</sub>	271.4 pph <sup>2</sup>	Calendar day average	EUCFURNACE Stove stack and baghouse stack combined	SC VI.6	From January 2017 through June 2018, the SO <sub>2</sub> pph on a calendar day average from the stove stack and baghouse stack combined was below 271.4 pph as determined by the CEMS. See attached.
16. SO <sub>2</sub>	1,188 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	EUCFURNACE (baghouse and stove stacks combined)	SC VI.29	From January 2017 through June 2018, the highest 12 month rolling SO <sub>2</sub> emissions were 668.9 tpy in January 2017.
17. CO	56.25 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Baghouse stack	SC V.7	CO emission rate was 34.56 pph based on stack test performed in March 2017.
18. CO	1,756 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Stove stack	SC V.8	CO emission rate was 993 pph based on stack test performed in April 2017.
19. NO <sub>x</sub>	5.46 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Baghouse stack	SC V.7	NO <sub>x</sub> emission rate was 2.13 pph based on stack test performed in March 2017
20. NO <sub>x</sub>	106.3 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Stove stack	SC V.8	NO <sub>x</sub> emission rate was 8.3 pph based on stack test performed in April 2017.
21. VOC	9.92 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Baghouse stack	SC V.7	VOC emission rate was 1.14 pph based on stack test performed in March 2017.
22. Pb	0.0077 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Baghouse stack	SC V.7	Pb emission rate was 0.0003 pph based on stack test performed in March 2017.
23. Pb	0.011 pph <sup>2</sup>	Test Protocol*	EUCFURNACE Stove stack	SC V.8	Pb emission rate was 0.0003 pph based on stack test performed in April 2017.
24. Mn	0.042 pph <sup>1</sup>	Test Protocol*	EUCFURNACE Baghouse stack	SC V.7	Mn emission rate was 0.01 pph based on stack test performed in March 2017.

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	COMPLIANCE STATUS - COMPLIANCE for all limits in the table
25. Mn	0.012 pph <sup>1</sup>	Test Protocol*	EUCFURNACE Stove stack	SC V.8	Mn emission rate was 0.004 pph based on stack test performed in April 2017.
26. Hg	0.003 pph <sup>1</sup>	Test Protocol*	EUCFURNACE Stove stack	SC V.8	Hg emission rate was 0.003 pph based on stack test performed in April 2017.

**II. MATERIAL LIMITS**

Material	Limit	Time Period /Operating Scenario	Equipment	Testing / Monitoring Method	COMPLIANCE STATUS
1. Iron Production	8,000 tons per day	Calendar Day	EUCFURNACE	SC VI.24	IN COMPLIANCE. See SO2 records for daily iron produced. All values are below 7000 tons per day. During the inspection, the furnace was producing 6000 tons/day of iron.
2. Natural Gas	118.3 MMSCF per year	12-month rolling time period basis as determined at the end of each calendar month	EUCFURNACE Limited natural gas suppression system	SC VI.25	IN COMPLIANCE. According to 2017 MAERS, the natural gas usage for the suppression system and casthouse heaters was 78.64 MMSCF.

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1&2 The EUCFURNACE shall be operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions. The permittee shall develop and implement a written startup, shutdown and malfunction plan for the EUCFURNACE. The plan shall include proper operating procedures to minimize bleeder emissions. IN COMPLIANCE. Plan has been developed and submitted. Latest revision was submitted in 2017.

3. The permittee shall not operate the stoves in EUCFURNACE unless a malfunction abatement plan (MAP) as described in Rule 911(2) has been submitted to the AQD 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. 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 AQD District Supervisor. IN COMPLIANCE. Stove MAP was due by August 14, 2014 and submitted on August 11, 2014. Plan is in blue folder in facility file.

4. The permittee shall develop site-specific monitoring plans for “C” Blast Furnace Casthouse Emission Control Baghouse and make the plan available to the permitting authority upon request. The plan shall contain the following information:

Installation of a continuous parameter monitoring system (CPMS) sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions;  
Performance and equipment specification for the sample interface, the parametric signal analyzer, and the data collection and reduction system;  
Performance evaluation procedures and acceptance criteria;  
Ongoing operation and maintenance procedures in accordance with 40 CFR 63.8(c)(1), (3), 4(iii), (7) and (8);  
Ongoing data quality assurance procedures in accordance with 40 CFR 63.8(d);  
Ongoing recordkeeping and reporting procedures in accordance with 40 CFR 63.10(c), (e)(1) and (e)(2)(i).

IN COMPLIANCE. CPMS plan was been submitted to AQD and is in the facility file. The plan appears to contain the required elements.

#### IV. DESIGN/EQUIPMENT PARAMETERS

1. The EUCFURNACE shall not be operated unless the baghouse is installed, maintained and operated in a satisfactory manner. IN COMPLIANCE. Based on my visual observation, certified VE readings, bag leak detector events, recent stack testing results, and inspection and maintenance records, the baghouse appears to be in compliance. See attached records for VE readings, bld alarms, and inspections.
2. The permittee shall keep on file a copy of the EUCFURNACE baghouse capture system design plans and a signed certification from the designer, certifying that the baghouse capture system is designed to achieve no less than 98% collection efficiency for the EUCFURNACE emissions. IN COMPLIANCE. Certification was produced during permitting for 182-05C and is maintained.
3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the SO<sub>2</sub> emissions and flow from each EUCFURNACE baghouse stack and stove stack on a continuous basis. IN COMPLIANCE. The SO<sub>2</sub> and flow CERMS is installed and passed RATA most recently in May 2018.
4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the natural gas usage rate of the natural gas suppression system for EUCFURNACE. IN COMPLIANCE. There is a natural gas meter for the casthouse. Calibration records are attached.
5. The permittee shall not operate EUCFURNACE with more than two tapholes. IN COMPLIANCE. There are only two tapholes at C furnace as observed during the inspection.
6. The permittee shall not operate the stove of EUCFURNACE unless the low-NO<sub>x</sub> technology is installed, maintained, and operated in a satisfactory manner. IN COMPLIANCE. Burners are installed and inspected once every six months. Inspection records indicate proper functioning. See attached inspection reports.
7. The permittee shall not fire blast furnace gas in the stove of EUCFURNACE unless the venturi scrubber and mechanical collector for pre-combustion gas cleaning are installed, maintained, and operated in a satisfactory manner. IN COMPLIANCE. Records indicate required inspection frequency is being met. Inspection records indicate proper functioning.
8. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the natural gas usage rate of the stoves. IN COMPLIANCE. Monitor was calibrated in 2017. See attached record.
9. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the blast furnace gas usage rate of the stoves. IN COMPLIANCE. Monitor was calibrated in 2017. See attached record.

#### V. TESTING/SAMPLING

Note: Conditions 1-4 refer to the Integrated Iron and Steel MACT (Subpart FFFFF) testing requirements.

1. The permittee shall conduct performance tests for particulate matter emissions and opacity at least once every five years. **IN COMPLIANCE.** Test was performed in December 2014. This condition refers to the Integrated Iron and Steel MACT (Subpart FFFFF) testing. The next test is required by 2019.
2. The permittee shall sample for an integral number of furnace tapping operations to obtain at least one hour of sampling for each test run. **IN COMPLIANCE.** A review of the December 2014 test indicates that sampling was performed over an integral number of tapping operations totaling at least one hour per run.
3. Performance tests for visible emissions shall be conducted such that the opacity observations overlap with the performance tests for particulate. **IN COMPLIANCE.** A review of the December 2014 test indicates that visible emissions observations (30 6-minute observations) were conducted during the performance test.
4. The permittee shall demonstrate compliance with the opacity limitation in SC I.2 with a certified observer of Method 9 visible emissions using Method 9. The performance test for visible emissions shall consist of 30 6-minute block averages during tapping of the furnace. **IN COMPLIANCE.** A review of the December 2014 test and associated VE readings indicates that there were no exceedances of the 20% 6 minute average opacity limit for blast furnace roof monitors.
5. The permittee shall certify that the baghouse capture system operated during the performance test at the site-specific operating limits established in the operation and maintenance plan using the following procedures:
  - a. Concurrent with all opacity observations, measure and record values for each of the operating limit parameters in the capture system operation and maintenance plan according to the monitoring requirements specified in §63.7830(a).
  - b. For any dampers that are manually set and remain at the same position at all times the capture system is operating, the damper position shall be visually checked and recorded at the beginning and end of each opacity observation period segment.
  - c. Review and record the monitoring data and identify and explain any times the capture system operated outside the applicable operating limits.
  - d. Certify in the performance test report that during all observation period segments, the capture system was operating at the values or settings established in the capture system operation and maintenance plan.**NOT APPLICABLE.** The December 2014 test was used to establish site specific operating limits as the company reported that they were not properly established initially. At this time, this condition is not applicable until the next performance test.
6. The permittee may change the operating limits for the baghouse capture system if the following requirements are met
  - a. Submit a written notification to the Administrator requesting to conduct a new performance test to revise the operating limit.
  - b. Conduct a performance test to demonstrate compliance with the applicable operating limitation.
  - c. Establish revised operating limits according to the applicable procedures in 40 CFR 63.7824, paragraphs (a) through (c) for a capture system.**NOT APPLICABLE.** Facility has not changed the operating limits since the December 2014 test.
7. Within three years of May 12, 2014, the permittee shall verify visible emissions, PM, PM10, PM2.5, CO, NOx, VOC, Pb, and Mn emission rates from EUCFURNACE baghouse stack by testing at owner's expense, in accordance with Department requirements. Subsequent testing will be required once every three years from the completion of the previous stack test. In addition, at the time of the first testing after May 12, 2014, the permittee shall obtain Pb and Mn dust concentrations in the EUCFURNACE baghouse hoppers. Subsequent Pb and Mn sampling of the baghouse dust is not required. No less than 45 days prior to testing, a complete test plan shall be submitted to the AQD Technical Programs Unit and the District Office. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results, including baghouse dust analysis for Mn and Pb, to the AQD within 60 days following the last date of the test. **IN COMPLIANCE.** Testing was conducted in April 2017 and was within three years of May 12, 2014. Baghouse dust was sampled for Pb and Mn and results were included in the test report. Report was submitted on time as was the test protocol.

8. Within three years of May 12, 2014, the permittee shall verify PM, PM10, PM2.5, NOx, CO, Pb, Mn, and total Hg emission rates from the EUCFURNACE stove stack, by testing at owner's expense, in accordance with Department requirements. Subsequent testing will be required once every three years from the completion of the previous stack test. Testing must be performed at normal operating conditions for EUCFURNACE stove stack. No less than 45 days prior to testing, a complete test plan shall be submitted to the AQD Technical Programs Unit and the District Office. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. IN COMPLIANCE. Testing was conducted in March 2017 and was within three years of May 12, 2014. Baghouse dust was sampled for Pb and Mn and results were included in the test report. Report was submitted on time as was the test protocol.
9. At least annually, verification of the slag silt content, by testing at owner's expense, in accordance with Department requirements will be required. The permittee shall submit a complete copy of the test results to the AQD within 60 days following the date of the test. IN COMPLIANCE. Results have been submitted annually. The sampling procedure is attached.

## **VI. MONITORING/RECORDKEEPING**

2. The permittee shall perform a Method 9 certified visible emission observation for the blast furnace EUCFURNACE baghouse stack at least once every month during blast furnace processing activity for a minimum of one hour. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written record of each required observation and corrective action taken. IN COMPLIANCE. Spot check of records indicates that VE observations are occurring at the required frequency. No exceedances were observed.
3. The permittee shall perform a Method 9 certified visible emission observation for the EUCFURNACE roof monitors at least once a week during casting for a minimum of at least one hour. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written record of each required observation and corrective action taken. IN COMPLIANCE. Spot check of records indicates that VE observations are occurring at the required frequency. AQD would like this to occur over an entire cast to include opening and closing of the tap hole. Mr. Pate agrees and will ensure the VE reader is covering an entire cast.
4. The permittee shall perform a non-certified visible emission observation for a minimum of 15 minutes for the EUCFURNACE bleeders at least once per month during planned blast furnace start up or shut down activities and a Method 9 certified visible emission observation of the EUCFURNACE bleeder at least once per quarter during planned blast furnace start up or shut down activities. Additionally, the permittee shall perform a Method 9 certified visible emission observation of the EUCFURNACE bleeder during all unplanned openings that last for more than thirty minutes. The permittee shall record each occurrence of bleeder stack opening, and the record shall include the date, start and stop time, and reason for each opening. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written record of each required observation and corrective action taken including date, start time and stop time. IN COMPLIANCE. Bleeder VE observations and the log of openings was obtained and is attached. The log contains all bleeder openings of any duration which is what the condition requires.
5. The permittee shall perform a Method 9 certified visible emission observation for the EUCFURNACE stove stack at least once a week during operation for a minimum of at least one hour. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written record of each required observation and corrective action taken. IN COMPLIANCE. Spot check of records indicated that VE observations are occurring at the required frequency. No exceedance observed.
6. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the SO<sub>2</sub> emissions and flow from EUCFURNACE baghouse stack and stove stack on a continuous basis. The permittee shall install and operate each CERM system to meet the timelines, requirements and reporting detailed in Appendix 1.3.2 and shall use the CERM data for determining compliance with Special Conditions SC I.12, I.13, and I.14. IN COMPLIANCE. A CERMS and flow monitor

is installed on the baghouse stack. The initial RATA was passed in April 2015, and the RATA has been passed in subsequent years.

7. The permittee shall prepare and operate at all times according to a written operation and maintenance plans for "C" Blast Furnace Casthouse Emission Control Baghouse. Each plan must address the following:

Monthly inspections of the equipment that is important to the performance of the total capture system (e.g., pressure sensors, dampers, and damper switches). This inspection must include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). The operation and maintenance plan also must include requirements to repair any defect or deficiency in the capture system before the next scheduled inspection.

Preventative maintenance for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

Operating limits for the "C" Blast Furnace Casthouse Emission Control System. The permittee must establish the operating limits according to the following requirements:

(i) Select operating limit parameters appropriate for the capture system design that are representative and reliable indicators of the performance of the capture system. This shall, at a minimum, include appropriate operating limit parameters that indicate the level of the ventilation draft and the damper position settings for the capture system when operating to collect emissions, including revised settings for seasonal variations. Appropriate operating limit parameters for ventilation draft include, but are not limited to, volumetric flow rate through each separately ducted hood, total volumetric flow rate at the inlet to the control device to which the capture system is vented, fan motor amperage, or static pressure.

(ii) For each operating limit parameter selected, the value or setting for the parameter at which the capture system operates during the process operation shall be designated. If the operation allows for more than one process to be operating simultaneously, designate the value or setting for the parameter at which the capture system operates during each possible configuration that may be used.

(iii) Include documentation in the plan to support the selection of the operating limits established for the capture system. This documentation must include a description of the capture system design, a description of the capture system operating during production, a description of each selected operating limit parameter, a rationale for why the parameter was chosen, a description of the method used to monitor the parameter according to the requirements of 40 CFR 63.7830(a), and the data used to set the value or setting for the parameter for each process configuration.

**IN COMPLIANCE.** Operating limits were established in the December 2014 stack test. The company is now monitoring baghouse inlet static pressure as opposed to fan amps. Damper positions are also being monitored. A table with all of operating scenarios and corresponding damper positions and inlet pressure is part of the MACT O&M plan. See blue facility folder for the C furnace baghouse MACT O&M plan. The plan includes requirements outlined in a. and b. and c. above. Damper positions are tracked and recorded. Positions that are out of range are flagged and investigated. See attached example for the month of May 2018. Damper positions are also calibrated quarterly.

Corrective action procedures for the "C" Blast Furnace Casthouse Emission Control Baghouse. In the event a bag leak detection system alarm is triggered, corrective action must be initiated to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Corrective actions may include, but are not limited to:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repair the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions

**IN COMPLIANCE.** Log of bag leak detection alarms and corrective actions was provided and is attached. Corrective actions appear to have been initiated within the required time period. Most of the alarms

were false alarms and were triggered when work was being performed in a certain baghouse compartment and the compartment had already been isolated. Other alarms were false due to calibration activities. The legit alarms appear to have been addressed in a timely manner. Each compartment has a bag leak detector. Procedure for what conditions trigger an alarm is attached.

8. If applicable, the permittee shall install, maintain, and operate a Continuous Parametric Monitoring System (CPMS) for the baghouse capture system according to the requirements of 40 CFR 63.7830(a) and 40 CFR 63.7831(e). **IN COMPLIANCE.** CPMS system (damper position and inlet pressure monitoring) is installed and operating. Historical trend data is maintained. A sample was provided and is attached.

9. The permittee shall conduct inspections of the C Blast Furnace Casthouse Baghouse at the specified frequencies according to the requirements in paragraphs (a) through (h) below. The permittee shall maintain records needed to document conformance with these requirements.

a. Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual.

b. Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.

c. Check the compressed air supply for pulse-jet baghouses each day.

d. Monitor cleaning cycles to ensure proper operation using an appropriate methodology.

e. Check bag cleaning mechanisms for proper functioning through monthly visual inspection or equivalent means.

f. Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (knead or bent) or laying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices.

g. Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.

h. Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

**IN COMPLIANCE.** Pressure drop and compressed air supply is continuously monitored. A snapshot of these values is taken at midnight and recorded. Dust is removed from the hoppers weekly by a contractor and a receipt is generated. The bag cleaning mechanism is checked monthly, no tension bag checks are needed as this is a pulse jet, and the fans and physical integrity of the interior is checked quarterly. Also, a daily report is generated that lists the cleaning cycles for each compartment. This is reviewed for normal operation. The normal number of cleaning cycles is listed in the attached procedure. Pressure drop is reviewed daily and parameters out of range are investigated and the cause is documented. Spreadsheet is attached. Most out of range values are due to baghouse compartment cleaning. Criteria for what triggers a baghouse alarm is attached. See attached baghouse records.

10. The permittee shall operate and maintain the capture system CPMS in continuous operation according to the site-specific monitoring plan. Unless otherwise specified, the CPMS shall:

a. Complete a minimum of one cycle of operation for each successive 15-minute period and collect a minimum of three of the required four data points to constitute a valid hour of data;

b. Provide valid hourly data for at least 95 percent of every averaging period; and

c. Determine and record the hourly average of all recorded readings.

**IN COMPLIANCE.** 15 minute and hourly averages for the CPMS system are being maintained.

11. Except as allowed in SC VI.13, the permittee shall install, operate, and maintain a bag leak detection system meeting the following specifications on the baghouse control:

a. Certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic foot (0.0044 grains per actual cubic foot).

b. Provides output of relative changes in particulate matter loadings.

c. Is equipped with an alarm, located such that it is heard by appropriate plant personnel, which sounds an alarm when an increase in relative particulate loadings is detected over a preset level.

d. Initially adjusted by establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device and setting the alarm set points and alarm delay time.

**IN COMPLIANCE.** See attached.

12. Following the initial adjustment of the bag leak detection system, the permittee shall not adjust the sensitivity or range, averaging period, alarm set points or alarm delay time except as specified in the operation and maintenance plan. This requirement does not apply if the permittee installs COMS as

specified in SC VI.13. UNKNOWN. Facility is not able to definitively state that there have been no adjustments since the initial adjustment. However, facility provided an explanation of how they know the system has not been adjusted since March 2015 and maintenance personal reports that they have never taken apart the BLD which would have to be done to adjust the sensitivity. As such, discretion is used in this instance.

13. If permittee does not install and operate a bag leak detection system, the permittee shall install, operate, and maintain a COMS according to the requirements in 40 CFR Sec. 63.7831(h) and monitor the hourly average opacity of emissions exiting each control device stack according to the requirements in 40 CFR 63.7832. NOT APPLICABLE. Bag leak detector is installed at this time.

14. The permittee shall monitor the process as required by 40 CFR 63, Subpart FFFFF, except during monitoring malfunctions, out-of-control periods, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments). IN COMPLIANCE. Process is continuously monitored.

15. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used in data averages and calculations used to report emission or operating levels or to fulfill minimum data availability requirements. IN COMPLIANCE. This data is not being used.

16. The permittee shall operate the baghouse capture system at or above the lowest value or settings established for the operating limits in the operation and maintenance plan and collect, reduce, and record the monitoring data for each of the operating limit parameters. IN COMPLIANCE. Company transitioned from fan amps to inlet pressure in January 2015. Data is continuously monitored. An example is attached. MACT deviations are submitted in the semiannual reports. For 2017, and Jan – June 2018, there were minimal deviations. Since these parameters are continuously monitored, this represent a very small fraction of the overall operating time (the furnace operates continuously), as such, facility is substantively in compliance with this condition. Additionally, corrective action taken appear to be sufficient at this time.

17. If the sensitivity of the bag leak detection system is changed beyond the limits established pursuant to 40 CFR 63.7831(f)(6), a copy of a written certification by a responsible official shall be included in the semiannual compliance report for that period. This requirement does not apply if the permittee installs COMS as specified in SC VI.13. UNKNOWN. See explanation for Condition 12.

18. The permittee shall maintain a copy of each notification and report submitted under 40 CFR Part 63, Subpart FFFFF, including all documentation supporting the initial notification or notification of compliance status submitted according to 40 CFR 63.10(b)(2)(xiv)).

19. The permittee shall maintain the records required for startup, shutdown and malfunction under 63.6(e)(3)(iii) through (v).

20. The permittee shall maintain records associated with performance tests, and performance evaluations as required by 40 CFR 63.10(b)(2)(viii).

21. The permittee shall maintain records of visible emissions observations in SC I.2 required by 40 CFR Part 63, Subpart FFFFF. DID NOT EVALUATE – 18, 19, 20 and 21 – Did not review all of the company's files to determine whether company was internally maintaining these records. AK Steel indicated that they believed they did and no deviations have been reported. AQD has copies of these records that were submitted by the company.

22. The permittee shall maintain records of the time corrective action was initiated, the corrective action taken, and the date when corrective actions were completed in response to a bag leak detection system alarm. IN COMPLIANCE. Records were produced during the inspection and are attached to this report.

23. Records required under 40 CFR Part 63, Subpart FFFFF shall be retained for five years. The records must be maintained onsite for the two most recent years of the five year period. Records from the remaining three years of the five year period may be keep offsite. DID NOT EVALUATE. Did not evaluate whether company was internally maintaining these records for the prior 5 years.

24. The permittee shall monitor and record, in a satisfactory manner, the iron production for EUCBCASTHOUSE on a daily, monthly, and 12-month rolling time period basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request. IN COMPLIANCE. See attached.
5. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for the natural gas suppression system of EUCFURNACE on a monthly, and 12-month rolling time period basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request. IN COMPLIANCE. See attached spreadsheet.
26. The permittee shall periodically inspect the installed stove burners of the EUCFURNACE stove, and the venturi scrubber and mechanical collector for pre-combustion gas cleaning of the stoves to determine its operational and physical condition at least once every six months. Written records of each inspection and corrective action taken, if any, shall be maintained. IN COMPLIANCE. Inspections meeting the six month frequency were provided and are attached.
27. The permittee shall monitor and record, in a satisfactory manner, blast furnace gas and natural gas usage records for EUCFURNACE stove on a monthly, and 12-month rolling time period basis. The permittee shall keep, in a satisfactory manner, all records on file at the facility and make them available to the Department upon request. IN COMPLIANCE. See attached spreadsheet.
28. The permittee shall maintain records of all information necessary to demonstrate compliance with the emission limits of this permit. IN COMPLIANCE. At this time, records that AQD requested for this inspection were provided and were sufficient.
29. The permittee shall keep, in a satisfactory manner, hourly, calendar day average, monthly and previous 12-month rolling time period records of SO<sub>2</sub> emission calculations for EUCFURNACE, using actual emissions data obtained from the CERMS installed on EUCFURNACE stove stack and baghouse stack. The permittee shall keep all records on file at the facility and make them available to the Department upon request. IN COMPLIANCE. Based on a sample of records requested and reviewed (see attached), the SO<sub>2</sub> emissions are being maintained as required.
30. The permittee shall perform preventative maintenance on the EUCFURNACE baghouse as specified in the operation and maintenance plan for the baghouse. IN COMPLIANCE. Preventative maintenance appears to be performed at the frequency and type specified in the O&M plan. See attached records.

## **VII. REPORTING**

IN COMPLIANCE for 1-3 below. Timely reports have been submitted.

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A.
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30.
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year.
4. Permittee shall submit a notification of intent to perform any performance testing under 40 CFR Part 63, Subpart FFFFF at least 60 calendar days before testing is to begin. IN COMPLIANCE. Notification received on 9/8/2014 and test performed on 12/9/2014.
5. Any time an action taken by the permittee during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) is not consistent with the procedures in the startup, shutdown, and malfunction plan, the permittee shall comply with all requirements of 63.10(d) (5)(ii). NOT APPLICABLE. No SSM reports related to this condition have been received.

## **VIII. STACK/VENT RESTRICTIONS**

**IN COMPLIANCE - All stacks exhaust unobstructed vertically. Heights and diameters in the permit were provided by the facility and should be correct.**

**IX. OTHER REQUIREMENTS**

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart FFFFF for Integrated Iron and Steel Manufacturing by the initial compliance date. **NO LONGER APPLICABLE.** Initial compliance date was 10 years ago (May 22, 2006).
2. The permittee shall maintain a current copy of the operation and maintenance plan required under III.3 onsite and available for inspection upon request. **IN COMPLIANCE.** Plan was available and given to AQD during the inspection. See facility file.
3. The permittee shall retain copies of old operation and maintenance plans for the life of the source subject to 40 CFR Part 63, Subpart FFFFF or until the source is no longer subject to the requirements of 40 CFR Part 63, Subpart FFFFF. **DID NOT EVALUATE.** AQD did not request copies of all prior O&M plans at this time. Facility reportedly has them on file.

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**FGB&CFURNACES**

**DESCRIPTION - B & C Blast Furnace casthouses and stoves**

**Emission Units: EUBFURNACE, EUCFURNACE**

**POLLUTION CONTROL EQUIPMENT**

**Casthouse: Baghouse; Stoves: Low-NOx technology, venturi scrubber and mechanical collector for blast furnace gas precleaning**

**I. EMISSION LIMITS**

**Note: Since B Furnace is not in operation, all emissions values are from C furnace. See attached spreadsheet for calculations.**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	COMPLIANCE STATUS  COMPLIANCE is the status for all limits in this table. The tons per year listed is the highest 12 month rolling value during the time period of January 2017 – June 2018. Spreadsheet is attached.
1. PM	87.4 tpy <sup>2</sup>	12-month rolling time period basis as determined at the end of each calendar month	FGB&CFURNACES  Baghouse stacks	SC VI.3	2.75 tons
2. PM	27.75 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES  Roof monitors	SC VI.4	17.62 tons

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	COMPLIANCE STATUS
					<b>COMPLIANCE is the status for all limits in this table. The tons per year listed is the highest 12 month rolling value during the time period of January 2017 – June 2018. Spreadsheet is attached.</b>
3. PM	35.0 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES  Stoves	SC VI.5	9.02 tons
4. PM10	87.01 tpy <sup>2</sup>	12-month rolling time period basis as determined at the end of each calendar month	FGB&CFURNACES  Baghouse stacks	SC VI.3	8.29 tons
5. PM10	15.04 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES  Roof monitors	SC VI.4	9.5 tons
6. PM10	99.1 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES  Stoves	SC VI.5	25.64 tons
7. PM2.5	87.01 tpy <sup>2</sup>	12-month rolling time period basis as determined at the end of each calendar month	FGB&CFURNACES  Baghouse stacks	SC VI.3	8.29 tons
8. PM2.5	7.27 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES  Roof monitors	SC VI.4	4.62 tons
9. PM2.5	99.1 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES  Stove stacks	SC VI.5	25.64 tons
10. SO <sub>2</sub>	1,188 tpy <sup>2</sup>	12-month rolling average as determined at the end of each calendar month	FGB&CFURNACES  Baghouse stacks and Stove stacks	SC VI.6588	588 tons

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	COMPLIANCE STATUS
					COMPLIANCE is the status for all limits in this table. The tons per year listed is the highest 12 month rolling value during the time period of January 2017 – June 2018. Spreadsheet is attached.
11. NOx	25.74 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Baghouse stacks	SC VI.3	13.5 tons
12. NOx	439.2 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Stove stacks	SC VI.5	59.59 tons
13. CO	8,760 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Stove stacks	SC VI.5	4143.4 tons
14. VOC	49.42 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Baghouse stacks	SC VI.3	8.01 tons
15. Pb	0.05 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Baghouse stacks	SC VI.3	.003 tons
16. Pb	0.044 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Roof monitors	SC VI.4	.028 tons
17. Pb	0.06 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Stove stacks	SC VI.5	.0023 tons
18. Mn	0.24 tpy <sup>1</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Baghouse stacks	SC VI.3	.0373 tons

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	COMPLIANCE STATUS
					COMPLIANCE is the status for all limits in this table. The tons per year listed is the highest 12 month rolling value during the time period of January 2017 – June 2018. Spreadsheet is attached.
19. Mn	0.26 tpy <sup>1</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Roof monitors	SC VI.4	.1635 tons
20. Mn	0.06 tpy <sup>1</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Stove stacks	SC VI.5	.0157 tons
21. Total Hg	0.0146 tpy <sup>1</sup>	12-month rolling time period as determined at the end of each calendar month	FGB&CFURNACES Stove stacks	SC VI.5	0.0014 tons

**II. MATERIAL LIMITS**

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Compliance Status
1. Iron Production	Combined maximum of 3,321,500 tons per year	12-month rolling time period basis as determined at the end of each calendar month	FGB&CFURNACES	SC VI. 2	IN COMPLIANCE. C furnace is limited to 8,000 per day. Even at maximum production of 8,000 tons every day for 365 days, the total production would be 2,920,000 tons.

**III. PROCESS/OPERATIONAL RESTRICTIONS**

NA

**IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the SO<sub>2</sub> emissions and flow from each EUBFURNACE stove stack and bighthouse stack on a continuous basis. IN COMPLIANCE. Already evaluated in C FURNACE EU.

**V. TESTING/SAMPLING NA****VI. MONITORING/RECORDKEEPING**

2. The permittee shall keep on a daily basis, monthly, and previous 12-month rolling time period record of the amount of iron production from FGB&CFURNACES combined at the B and C Blast Furnace Casthouses. The permittee shall keep the records on file at the facility and make them available to the department upon request. IN COMPLIANCE. See attached records.
3. The permittee shall calculate monthly and 12-month rolling time period PM, PM10, PM2.5, NOx, VOC, Pb and Mn emission rates from FGB&CFURNACES baghouse stacks based upon stack testing data and iron throughput limits. The permittee shall keep the records on file at the facility and make them available to the department upon request. IN COMPLIANCE. See attached records.
4. Using the method shown in Appendix 7.1-1, the permittee shall calculate monthly and 12-month rolling time period PM, PM10, PM2.5, Pb and Mn emission calculations from FGB&CFURNACES roof monitor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. IN COMPLIANCE. Facility has calculations in compliance with Appendix 7.1-1 methodology. See attached spreadsheet.
5. Using the method shown in Appendix 7.1-1, the permittee shall calculate monthly and 12-month rolling time period PM, PM10, PM2.5, NOx, CO, Pb, Mn and Total Hg emission rates from FGB&CFURNACES stoves. The permittee shall keep the records on file at the facility and make them available to the department upon request. IN COMPLIANCE. Facility has calculations in compliance with Appendix 7.1-1 methodology. See attached spreadsheet.
6. The permittee shall continuously monitor and record, in a satisfactory manner, the SO<sub>2</sub> emissions and flow from each the EUBFURNACE stove stack and baghouse stack and each EUCFURNACE stove stack and baghouse stack. The permittee shall operate the Continuous Emission Rate Monitoring System (CERMS) to meet the timelines, requirements and reporting detailed in Appendix 3.1-1 and 3.2-1 and shall use the CERMS data for determining compliance with SC I.10. NOT APPLICABLE. B Furnace is not in operation.
7. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month records of SO<sub>2</sub> emission calculations for FGB&CFURNACES, using actual emissions data obtained from the CERMS installed on the EUBFURNACE stove stack and baghouse stack and the EUCFURNACE stove stack and baghouse stack. The permittee shall keep all records on file at the facility and make them available to the department upon request. IN COMPLIANCE. Previously evaluated in C FURNACE EU, S.C.
8. The permittee shall demonstrate continuous compliance for each affected source subject to an emission limit or opacity limit in 40 CFR 63.7790(a). 9. The permittee shall demonstrate continuous compliance with the operation and maintenance requirements as specified in 40 CFR 63.7834(a) and (b). 10. The permittee shall comply with the recordkeeping requirements as specified in 40 CFR 63.7842(a), (b), (c), and (d). IN COMPLIANCE. Previously evaluated in C Furnace EU,

**VII. REPORTING****All reporting already evaluated in C Furnace EU.**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A.
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30.
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year.
4. The permittee shall comply with the notification requirement as specified in 40 CFR 63.7840(a), (d), and (e).
5. The permittee shall comply with the notification requirement as specified in 40 CFR 63.7841(a), (b), (c) and (d).

**VIII. STACK/VENT RESTRICTIONS NA****IX. OTHER REQUIREMENTS**

1. The permittee shall utilize written operating procedures designed to minimize emissions from Treadwell car operations, including filling the cars with molten iron to 90% capacity when possible, minimizing the impact of Treadwell cars when they are coupled, and accelerating the cars at a slow and steady rate, to the extent possible. IN COMPLIANCE. Written procedures are in place. See attached.

**Appendix 7-1. Emission Calculations**

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in EURELADLINGBOF, EUBOFDESULF, EUBOF, FGB&CFURNACES, FGBOFSHOP

*Any changes proposed to this Appendix shall be submitted to the AQD District Supervisor, Detroit Office and approved, in writing, before the change is implemented.*

IN COMPLIANCE. Facility has records in compliance with Appendix 7-1 calculation methodology. See attached.

**COMPLIANCE DETERMINATION**

At this time, based on conditions evaluated in this report for the C blast furnace, the facility appears to be in compliance.

NAME Kate Kolt

DATE 9/27/18

SUPERVISOR W.M.