

Manila

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

A864039548

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: 04/21/2017
STAFF: Katherine Koster	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: 2017 Scheduled Inspection		
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: 313-845-3217

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 in Dearborn. The previous address, 3001 Miller Road, has been assigned 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.

COMPLAINT/COMPLIANCE HISTORY

No complaints have been received related to the emission units evaluated in this report.

OUTSTANDING CONSENT ORDERS

There are no active consent orders related to the equipment in this report.

OUTSTANDING LOVs

There are no outstanding LOV's related to the equipment that was inspected.

PROCESS DESCRIPTION

The description below includes only the processes discussed and/or observed during the inspection.

Hot Dip Galvanizing Line

Steel coils are unwound and welded together to form a strip. Next, the strip cleaned, annealed, and coated with zinc for rust prevention. PM emissions from the cleaning process are controlled by a water scrubber. NOx emissions from the annealing furnace are controlled by a selective catalytic reduction (SCR) system with urea injection. Steel that will be used in exposed automotive parts are zinc coated. After zin coating and drying, a rust preventative oil is applied electrostatically and the strip is recoiled.

Hot Strip Mill

The hot strip mill converts steel slabs from the caster into steel coils. The slabs are reheated in one of the three reheat furnaces and then sent through a series of rolling mills to elongate the slab into a thin strip. The strip is coiled at the end of the line. The reheat furnaces are natural gas fired. There is no pollution control equipment installed on this line.

Batch Annealing Furnaces

Steel coils are stacked onto the base of each batch anneal furnace. The furnaces are natural gas fired. An inner cover is placed over the coils and oxygen is purged using hydrogen. Coils stay in the batch

anneal furnace anywhere from 16-40 hours. Afterwards, the steel is air cooled to 700 degrees and then a cooling cover/shell is applied until the temperatures drops to 180F at which point the cover is removed. A temper mill is used after batch annealing to correct shape errors. A rust preventative oil is applied here by a spray.

INSPECTION NARRATIVE

AQD inspector, Katie Koster, arrived at the facility on April 21, 2017. I was accompanied about the facility by Mr. Jim Earl, Environmental Manager, and Mr. Dave Pate, Environmental Engineer. We went to the Hot Dip Galvanizing line.

In the pulpit, I recorded the following parameters:

Inlet T to the SCR: 308C

Urea flow: 1.78 liters per hour

NOx: 6.46 ppm outlet

Calibration gas for analyzers was onsite and supplied by Thermo Environmental.

At 1:14 p.m., I recorded the following:

SCR temperature: 310.3. Set points are min 285; max 330

Urea flow: 1.32 LPH. Set points are min 0.3; max 7

Demister pressure drop (mm wc): 29.40. Set points are min 3; max is 77

Demister water spray: 24.06 LPM. Set points are min 7; max is 35

NOx outlet: 12.12 ppm. Set points are min 1; max is 16.

The urea tank level is at 81.6%. There are two pumps and the facility alternates between the pumps weekly. I observed the presence of the required gauges, NOx analyzers, and SCR system while walking the line. We walked to the rust preventative oil spray operation. I checked all the oil temperatures and they were all below 150F.

Next, we entered the Cold Mill and viewed the batch anneal furnaces. Coils from the PLTCM that do not go to the hot dip are batch annealed. The permit lists 52 batch anneal furnaces that are in use. According to the facility, 34 furnaces use hydrogen and nitrogen for annealing and they are no longer in use. The remaining 18 hydrogen anneal furnaces are still in use. There is a temper mill with rolling oil spray. I inquired whether this operation was subject to permitting or exempt. Mr. Pate was going to look into it.

We did not enter the hot strip mill as the regulatory requirements are mostly in the form of recordkeeping. No visible emissions were observed from the reheat furnace stacks.

RULES/PERMIT CONDITIONS EVALUATED

The Hot Dip Galvanizing Line, and other equipment, is operating under PTI 120-16. This equipment was previously permitted under 8-08 along with the pickle line and other related equipment. This permit, 120-16, was for minor administrative changes to reflect the actual constructed configuration of the hot dip line. Permit changes needed were to indicate that the hot water heaters for the precleaner process exhaust through the SCR stack but are not controlled by the SCR and to move the natural gas fired dryers to another emission unit. No emission limits were changed.

EUHDGCLEANER

DESCRIPTION: Hot dip galvanizing line (HDGL) pre-cleaning process

Flexible Group ID: FGFGHDGLVOC

POLLUTION CONTROL EQUIPMENT: Water scrubber to remove caustic

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM10 (caustic)	0.441 pph	Test Protocol	EUHDGLCLEANER	SC V.1	R 336.1331

(filterable)					
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IN COMPLIANCE. The stack test was conducted in December 2012. Results based on a three run average as reported were 0.0973 lb/hr for PM-10 (filterable plus condensable). Note, the emission limit only applies to filterable PM.

II. MATERIAL LIMITS NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate the EUHDGLCLEANER HDGL pre-cleaning process unless the water scrubber is installed and operating properly. A minimum water flow rate, as determined during performance testing, shall be maintained. The permittee shall install a flow monitor to measure the water flow rate to the EUHDGLCLEANER scrubber and a means to continuously monitor pressure drop across the scrubber.

IN COMPLIANCE. Minimum flow rate established during the stack test was 8 liter/min. A flow and pressure drop monitor is installed to measure these parameters on a continuous basis. The flow rate records are attached and demonstrate that the flow rate has been maintained above the minimum. Scrubber maintenance records were provided (attached) to demonstrate that the scrubber is maintained and operating properly.

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall implement and maintain a malfunction abatement plan (MAP) for the EUHDGLCLEANER HDGL line, including the pre-cleaning process equipment and the associated emission control system (water scrubber) and operate in accordance with the plan. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit 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 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.

IN COMPLIANCE. A MAP for the equipment mentioned in this condition was submitted in March 2016. The MAP was approved by default after 90 days. Records reviewed for the HDGL line indicate that maintenance is performed at the frequency outlined in the MAP.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. At least once every ROP permit term the permittee shall conduct a particulate matter emission test from the EUHDGLCLEANER water scrubber stack, while in operation to control the caustic cleaning operation. No less than 30 days prior to testing, a complete stack test protocol must be submitted to the AQD District Office for approval. 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 Technical Programs Unit and District Office within 60 days following the last date of the test

IN COMPLIANCE. Testing was performed in 2012. The company believes that the next test is due during the next ROP permit term which started in 2016 upon renewal. AQD's position is that the phrase "once every ROP term" is meant to mean once every 5 years. This needs to be clarified in the next ROP modification. At this time however, the 5-year window has not yet elapsed.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall keep records of the following EUHDGLCLEANER information and shall make

these records available to the AQD upon request:

- a) The water flow rate reading of the water scrubber on a daily basis

IN COMPLIANCE. Records of water flow rate are maintained and recorded on a daily basis and were presented. See attached.

- 2. The permittee shall monitor and maintain, on a continuous basis, a water flow rate to the EUHDGLCLEANER scrubber of no less than the values determined during the initial stack testing that demonstrates compliance with the PM10 emission limit in this table. Records shall be kept of the scrubber water flow rate according to S.C. VI.1.

IN COMPLIANCE. The minimum water flow rate set point established during the stack test was 8 liters/min. Records provided, based on a once daily reading which is all that is required in S.C. VI.1, indicate the flow rate has been maintained above the minimum value.

- 3. The permittee shall monitor, on a continuous basis, and record once per shift, the pressure drop across the EUHDGLCLEANER scrubber while the scrubber is operating in order to identify changes that may indicate a need for maintenance. The pressure drop should be within the manufacturer's acceptable range, as identified in the malfunction abatement plan.

IN COMPLIANCE. The allowable pressure drop specified in the MAP is 7.5 to 75 mm H2O. Records of the pressure drop are being maintained and recorded once per shift. Based on the pressure drop values in the records, no maintenance activities have been required.

VII. REPORTING NA

VIII. STACK/VENT RESTRICTIONS

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

IX. OTHER REQUIREMENTS NA

The following conditions apply to: FGPLTCMHDGLHEAT

DESCRIPTION: PLTCM AND HDGL BUILDINGS GAS FIRED HEATERS AND CLIMATE CONTROL

Emission Units: EUPKLTMBLDGHEAT, EUHDGLBLDGHEAT, EUHDGLDRYER

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment
1. PM	1.7 tpy Based on the attached records, from January 2014 - December 2016, highest PM emissions were 0.73 tons on a 12 month rolling basis in August 2014. Emissions are calculated using an AP-42 emission factor which is the same for PM and PM10 for natural gas combustion.	12-month rolling time period as determined at the end of each calendar month	FGPLTCMHDGLHEAT
2. PM-10	1.7 tpy Based on the attached records, from January 2014 - December 2016, highest PM10 emissions were	12-month rolling time period as determined at the end of each calendar month	FGPLTCMHDGLHEAT

	0.73 tons on a 12 month rolling basis in August 2014.		
3. NOx	21.9 tpy Based on the attached records, from January 2014- December 2016, highest NOx emissions were 9.55 tons on a 12 month rolling basis in August 2014.	12-month rolling time period as determined at the end of each calendar month	FGPLTCMHDGLHEAT

II. MATERIAL LIMITS

Material	Limit	Time Period / Operating Scenario	Equipment
1. Natural Gas	438 MMcf Based on the attached records, from January 2014- December 2016, highest natural gas usage was 191.1 MMcf on a 12 month rolling basis in August 2014.	12-month rolling time period as determined at the end of each calendar month	FGPLTCMHDGLHEAT

III, IV, V, VII, and VIII and IX all have NA for the conditions.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall calculate and record by the end of each calendar month the following from FGPLTCMHDGLHEAT:
 - a) emissions of PM monthly and 12-month rolling time period
 - b) emissions of PM-10 monthly and 12-month rolling time period
 - c) emissions of NOx monthly and 12-month rolling time period

The permittee shall calculate in a satisfactory manner, the annual NOx emissions from FGPLTCMHDGLHEAT, using the current U. S. EPA Compilation of Air Pollutant Emission Factors (AP-42) or other emission factors approved by the Department such as those used in the MAERS.

IN COMPLIANCE. See attached records. Emission factors in use are from AP-42. The emission factor for PM and PM-10 is identical for natural gas combustion.

2. The permittee shall keep monthly and 12-month rolling records of the amount of combined natural gas fired in EUHDGLDRYER, EUPKLTMBLDGHEAT, and EUHDGLBLDGHEAT.

IN COMPLIANCE. See attached records.

The following conditions apply to: FGHDGLSCR

DESCRIPTION: GAS-FIRED ANNEALING FURNACE AND WATER HEATERS

Emission Units: EUHDGLH2OHEATER, EUHDGLANNEAL

POLLUTION CONTROL EQUIPMENT: Selective Catalytic Reduction control device; EUHDGLH2OHEATER natural gas combustion emissions are ducted uncontrolled (downstream of the SCR) to SVHDGL_SCR.

I. EMISSION LIMITS

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Pollutant	Limit	Time Period/ Operating Scenario	Equipment
1. NOx	3.21 pph IN COMPLIANCE. Based on the 3/12/13 stack test, NOx emissions were 0.65 lb/hr.	Test Protocol*	FGHDGLSCR
2. NOx	14.1 tpy Based on attached records, from January 2014 – March 2017, highest NOx emissions were 2.76 tons on a 12 month rolling basis in January 2014.	12-month rolling time period as determined at the end of each calendar month	FGHDGLSCR
3. PM10	3.6 tpy Based on attached records, from January 2014- March 2017, highest PM10 emissions were 1.64 tons on a 12 month rolling basis in August 2014.	12-month rolling time period as determined at the end of each calendar month	FGHDGLSCR
4. ammonia (NH ₃) CAS No. 7664417	2.19 pph IN COMPLIANCE. Based on the 3/12/13 stack test, ammonia emissions were 0.2 lb/hr.	Test Protocol*	FGHDGLSCR

II. MATERIAL LIMITS NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The SCR unit shall be equipped with an automatic urea feed injection system.

IN COMPLIANCE. An automatic urea feed system is in place and was observed in operation during the inspection. Urea is injected at a variable rate that is based on the NOx outlet concentration reading.

2. The permittee shall not operate the natural gas combustion sources of EUHDGLANNEAL unless the SCR is installed and operating properly.

IN COMPLIANCE. The natural gas combustion sources of EUHDGLANNEAL are only the annealing furnace. The SCR appears to be installed and operating properly. Note, the prior version of the permit (8-08) had the two natural gas fired dryers venting through the SCR system which was not the true configuration of the line after it was installed. Also, the hot water heaters do not exhaust through the SCR but downstream of the SCR through the same stack. The hot water heaters were incorrectly listed as being controlled by the SCR system in the prior permit. A log of the SCR "malfunctions" is attached for 2017. System appears to be operating properly or maintenance is initiated in a timely manner.

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall implement and maintain a preventative maintenance (PM) and malfunction abatement plan (MAP) for the SCR control unit. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit 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 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.

IN COMPLIANCE. A revised PM/MAP was submitted in March 2016. It was approved by default after 90 days. It appears to contain the required elements. Maintenance records for the SCR unit indicate that the maintenance frequency outlined in the MAP is being met.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. At least once every ROP permit term the permittee shall verify NOx and ammonia emission rates from SVHDGL_SCR when FGHDGLSCR SCR, EUHDGLANNEAL, and EUHDGLH2OHEATER are in operation by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.

IN COMPLIANCE. Test was performed in 2013. The next test is due by 2018. Testing was performed with the annealing furnace and SCR system in operation as well as the hot water heaters. The phrase "once every ROP permit term" will be clarified in the next ROP modification to read once every 5 years.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall record the following information and shall keep them on file for at least five years and make them available to the AQD upon request:
 - a) Occurrence of abnormal functions of the automatic control system of the automatic urea feed injection system of the SCR.
 - b) The amount of urea used per day.

IN COMPLIANCE – The required information is maintained. See attached.

2. The permittee shall keep a monthly record of the total amount of natural gas fired in EUHDGLH2OHEATER and EUHDGLANNEAL. (R 336.1205(3))

IN COMPLIANCE – See attached.

3. The permittee shall calculate and record, by the end of each calendar month, the following from FGHDGLSCR:
 - a) emissions of PM10, monthly and 12-month rolling time period.
 - b) emissions of NOx, monthly and 12-month rolling time period.
 The combined NOx emissions from EUHDGLANNEAL and EUHDGLH2OHEATER shall be calculated based on the data reported under SC V.1.

IN COMPLIANCE – See attached.

VII. REPORTING NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter (inches)	Minimum Height Above Ground (feet)
1. SVHDGL_SCR	48	140

DID NOT EVALUATE

IX. OTHER REQUIREMENTS NA

The following conditions apply to: FGHDGLVOC

DESCRIPTION: HDGL SOURCES OF VOC EMISSIONS

Emission Units: EUHDGLCLEANER, EUHDGLSKINPASS, EUHDGLES_OILING

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method
1. VOC	10.0 tpy	12-month rolling time period as determined at the end of each calendar month	FGHDGLVOC	SC VI.3

IN COMPLIANCE. From December 2013 through March 2017, the highest 12 month rolling VOC emissions were 8.8 in February 2015. Starting in the 2nd quarter of 2016, the VOC content of each oil is tested quarterly. Emissions are calculated for that quarter with the latest results. See attached records. The emission calculations also include VOC's from the EUHDGLSKINPASS (Qwewrl product). According to the spreadsheet, the VOC containing product for EUHDGLCLEANER has not been used as throughput is zero. These EU's along with EUHDGLES_OILING are under the 10 tpy limit.

In the permit application for the original permit (8-08), the facility estimated the VOC emissions from the electrostatic oiling process using VOC results from a Method 24 analysis. Method 24 specifies an oven curing temperature of 230+/- 9F to determine the VOC emissions. Facility claims that this overstates the actual VOC's emitted from their oiling process as the oil is only heated to 135F on the HDGL. AK Steel contracted with a lab to perform a "modified Method 24" analysis of the oils to establish an "actual" VOC lb/gal value. This methodology was approved by AQD TPU section on Mach 24, 2016 with several stipulations. See attached letter.

Based on a review of the sample results, there seems to be a wide variation in the VOC content between quarters. I calculated the emissions using the highest tested value and applied it to all quarters. Emissions are still below the 10 tpy in this scenario.

Sections II, III, IV, V, VII, VIII, and IX have NA as the conditions.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall keep, in a satisfactory manner, records of the monthly usage, in gallons or pounds, of each VOC containing material used in all of the FGHDGLVOC emission units.
2. The permittee shall keep, in a satisfactory manner, records of the VOC content (in lb VOC/gallon or lb VOC/lb material) of each material used in all of the FGHDGLVOC emission units.
3. The permittee shall determine compliance with emission limit in SC I.1 by calculating VOC emissions based upon usages recorded in SC VI.1 and the VOC content recorded in SC VI.2, at the end of each calendar month.

IN COMPLIANCE. See attached records. For VI.2, facility is determining VOC content in lb/gal (less water) quarterly based on a modified Method 24 which was approved by AQD and explained above. The approval letter from TPU staff is attached.

FGANNEALFURNACES – Conditions from ROP MI- ROP-A8640-2016a

DESCRIPTION 52 annealing furnaces (composed of 34 hydrogen nitrogen annealing furnaces and 18 hydrogen annealing furnaces) located in the Cold Mill Building.

Flexible Group ID: FGANNEALFURNACES

POLLUTION CONTROL EQUIPMENT NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method
1. Visible Emissions	20% Opacity ²	6-minute average	FGANNEALFURNACES	SC VI.2
2. PM	10 lb/MMscf ²	Test Protocol*	FGANNEALFURNACES	SC VI.3
3. PM10	10 lb/MMscf ²	Test Protocol*	FGANNEALFURNACES	SC VI.3
4. PM2.5	10 lb/MMscf ²	Test Protocol*	FGANNEALFURNACES	SC VI.3
5. NOx	140 lb/MMscf ²	Test Protocol*	FGANNEALFURNACES	SC VI.3

IN COMPLIANCE. I did not observe any visible emissions while on site. These furnaces are natural gas fired and do not have a stack that vents to the outside air. Testing is not required at this time.

Section II, IV, V, VIII, and IX have NA for the conditions.

III. PROCESS/OPERATIONAL RESTRICTIONS

- Oil shall not be used as fuel in the FGANNEALFURNACES. IN COMPLIANCE. Only natural gas is fired in the batch anneal furnaces.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

- The permittee shall complete all required calculations/records in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.
- The permittee shall monitor and record, in a satisfactory manner, the total natural gas usage, for the FGANNEALFURNACES on a monthly and 12-month rolling time period basis. The permittee shall document that no oil was used as fuel. The permittee shall keep all records on file at the facility and make them available to the department upon request.

IN COMPLIANCE. Records are available and attached.

- Using the method shown in Appendix 7.1-1, the permittee shall calculate monthly and 12-month rolling time period PM, PM10, PM2.5, and NOx emissions from FGANNEALFURNACES. The permittee shall keep the records on file at the facility and make them available to the department on request.

Emission factors in the Appendix are below: 7.9-1 FGANNEALFURNACES SC VI.3 . (Note, the citation in above condition is incorrect).

PM Monthly FGANNEALFURNACES = Monthly Annealing Furnace Natural Gas Usage (MMSCF/month) x 3.26 lb PM / MMSCF x 1 ton / 2000 lb

PM10 Monthly FGANNEALFURNACES = Monthly Annealing Furnace Natural Gas Usage (MMSCF/month) x 3.26 lb PM10 / MMSCF x 1 ton / 2000 lb

PM2.5 Monthly FGANNEALFURNACES = Monthly Annealing Furnace Natural Gas Usage (MMSCF/month) x 3.26 lb PM2.5 / MMSCF x 1 ton / 2000 lb

NOx Monthly FGANNEALFURNACES = Monthly Annealing Furnace Natural Gas Usage (MMSCF/month) x 41.6 lb NOx / MMSCF x 1 ton / 2000 lb

IN COMPLIANCE. Emissions are being calculated using this methodology. See attached.

VII. REPORTING

IN COMPLIANCE – ROP reporting requirements are being met.

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FGHSMFURNACES123 - Conditions from ROP MI- ROP-A8640-2016a

DESCRIPTION: Three Slab reheat furnaces Nos. 1, 2 and 3 located in the Hot Strip Mill Building.

Emission Units: EUREHEATFURN1, EUREHEATFURN2, EUREHEATFURN3

POLLUTION CONTROL EQUIPMENT NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method
1. Visible Emissions	20% Opacity IN COMPLIANCE. No exceedances have been observed by the certified VE reader. See attached.	6-minute average	FGHSMFURNACES123	SC VI.3
2. PM	10 lb/MMscf ² IN COMPLIANCE. Stack test in November 2008 resulted in a three run average PM emissions of 2.99 lb/MMscf	Test Protocol*	FGHSMFURNACES123	GC 13 SC VI.3
3. PM10	10 lb/MMscf ² IN COMPLIANCE. Stack test in November 2008 resulted in a three run average PM	Test Protocol*	FGHSMFURNACES123	GC 13 SC VI.3

	emissions of 2.99 lb/MMscf			
4. PM2.5	10 lb/MMscf ² IN COMPLIANCE. Stack test in November 2008 resulted in a three run average PM emissions of 2.99 lb/MMscf	Test Protocol*	FGHSMFURNACES123	GC 13 SC VI.3
5. NOx	0.11 lb/MMBtu ² IN COMPLIANCE. Stack test in November 2008 resulted in a three run average of NOX emissions of 0.076 lb/MMBTU	Test Protocol*	FGHSMFURNACES123	SC V.1

II. MATERIAL LIMITS NA

III. PROCESS/OPERATIONAL RESTRICTIONS

- Oil shall not be used as fuel in the FGHSMFURNACES123. IN COMPLIANCE. Furnaces are only fired with natural gas.
- The permittee shall use and implement the procedures outlined in the Furnace Light Up (ignition) and Furnace Warm Up procedures for the reheat furnaces to ensure proper air and fuel mixing. DID NOT EVALUATE. Did not review procedures.

IV. DESIGN/EQUIPMENT PARAMETERS NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

- The permittee shall verify NOx emission rates from a representative reheat furnace from FGHSMFURNACES123 by testing at owner's expense, in accordance with department requirements once every ROP renewal period. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test

UNKNOWN. Most recent test was performed in 2008 which was within the 5 years period of the prior ROP. The ROP was renewed in 2016. As such, company believes the ROP renewal period did not recommence until 2016 and they have five years to conduct a test. AQD disagrees and will modify this language in the next ROP modification to read "once every 5 years."

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

- The permittee shall complete all required calculations/records in a format acceptable to the AQD

District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.

2. The permittee shall monitor and record, in a satisfactory manner, the total natural gas usage for the FGHSMFURNACES123 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. Total natural gas usage is maintained monthly and on a 12 month rolling basis. See attached.

3. The permittee shall perform a Method 9 certified visible emission observation of the slab reheat furnaces 1, 2 & 3 respective stacks at least once a month during processing activity. 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. Certified M9 readings are being performed at the required frequency No corrective actions have been required.

VII. REPORTING

1-3 related to ROP deviation reporting. IN COMPLIANCE. Reporting has been timely.

4. Within 60 days after the end of each ozone control period, the permittee shall submit a summary report to the AQD. The summary report shall contain the following information: ² (R 336.1801(12))
 - a. The date, time, magnitude of emissions, and emission rates where applicable, of the specified emission unit or utility system.
 - b. If emissions or emission rates exceed the emissions or rates allowed for in the ozone control period by the applicable emission limit, the cause, if known, and any corrective action taken.
 - c. The total operating time of the emission unit during the ozone control period.
 - d. For continuous emission monitoring systems, system performance information shall include the date and time of each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of the system repairs or adjustments. When the continuous monitoring system has not been inoperative, repaired, or adjusted, the information shall be stated in the report.

IN COMPLIANCE – Reports have been received in a timely manner and include the required information.

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)
1. SVHSMREHEAT1-S	168 ²	208 ²
2. SVHSMREHEAT1-N	168 ²	208 ²
3. SVHSMREHEAT2-S	168 ²	208 ²
4. SVHSMREHEAT2-N,	168 ²	208 ²
5. SVHSMREHEAT3-S	168 ²	208 ²
6. SVHSMREHEAT3-N	168 ²	208 ²

DID NOT EVALUATE STACK HEIGHT AT THIS TIME.

IX. OTHER REQUIREMENTS NA

NSPS/MACT

IN COMPLIANCE.

NSPS Dc. - The three hot water heaters on the Hot Diare subject to NSPS Dc as they were installed around 2012. The size is 12.4 MMBTU/hr each. Monthly natural gas records are being maintained. Facility submitted a request to calculate natural gas usage per heater in an alternate way which was approved by AQD. See attached copy of the approval letter.

EXEMPT EQUIPMENT

Records were submitted for the following RULE 290 exempt equipment:

- Backup skimming
- EUBOFLIMERECEIVI
- EU COKE UNLOADEE
- Screener at Machine Scarfing

Records were reviewed and show compliance with the emission limits in Rule 290.

Awaiting temper mill Rule 290 analysis.

MAERS REPORT REVIEW

MAERS report for 2016 was reviewed. No changes were made to the original submitted.

FUGITIVE DUST

There are no fugitive dust issues of concern related to the emission units evaluated in this report.

COMPLIANCE DETERMINATION

At this time, facility appears to be in compliance with conditions evaluated in this report.

NAME Kate Kose

DATE 7/27/17

SUPERVISOR W.M.