

VSS/ A7809

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

A780945536

FACILITY: U S STEEL GREAT LAKES WORKS		SRN / ID: A7809
LOCATION: 1 QUALITY DR, ECORSE		DISTRICT: Detroit
CITY: ECORSE		COUNTY: WAYNE
CONTACT: Alexis Piscitelli , Environmental Manager		ACTIVITY DATE: 07/30/2018
STAFF: Katherine Koster	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MEGASITE
SUBJECT: Zug Island Boilerhouses and VE readings		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Targeted Inspection

INSPECTED BY: Katie Koster, AQD

PERSONNEL PRESENT: Nathan Ganhs, USS Environmental Staff

FACILITY PHONE NUMBER: 313-749-3857

FACILITY BACKGROUND

United States Steel Great Lakes Works (USSGLW) is an integrated steel mill in operation since August 1930. It is located just south of the City of Detroit. The site consists of approximately 1100 acres that span along the Detroit River through the cities of Ecorse and River Rouge. The facility includes the Main Plant Area, the 80-inch Hot Strip Mill, and the iron making and coke making operations on Zug Island. Coke making is done at the No. 5 battery by EES Coke, a subsidiary of DTE Energy. The plant produces flat-rolled steel products for a variety of industries, mainly automotive. The primary iron producing facility is located on Zug Island, City of River Rouge. The 80-inch Hot Strip Mill facility is located in the City of River Rouge between the Zug Island and Main Plant facility location. The Main Plant Area is located on a 682 acre site located in the City of Ecorse. There are also six support facilities located inside or adjacent to the facility.

Required PPE is a respirator (for the blast furnaces), greens, hard hat, steel toed shoes with metatarsal guard, safety glasses, and hearing protection.

REGULATORY ANALYSIS

USSGLW is currently operating under ROP No. 199600132d and Permits to Install 13-17 (Argon Stir Baghouse), 19-16A (two generators), 98-15 and 219-06B (modification to the CGL), 123-12A (portable screen), and 96-12A (iron ore screening).

Federal and State Consent Decree Case No. 2:12-cv-00304 was entered into March 30, 2017. AQD Consent Order 1-2005 was terminated once the company entered into the aforementioned CD.

The facility is also operating under AQD Consent Orders No. 1-2016 (No 1 Argon Stir Baghouse stack test violation) and 22-2016 (No. 5 pickle line stack test violation) and numerous Wayne County consent orders, including a fugitive dust SIP Consent Order.

The facility is subject to the Integrated Iron and Steel Manufacturing MACT (FFFFF), Steel Pickling MACT (CCC), Boiler MACT (DDDDD), and NSPS Na (Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983). Also, the emergency generators are subject to the RICE MACT (ZZZZ) and/or NSPS IIII.

This facility is considered a megasite and is on a three year inspection cycle to complete a full compliance evaluation (FCE). FY2018 is the first year of another three year cycle.

PROCESS DESCRIPTION

The boilers on Zug Island are mainly used to power the turbo blowers. The turbo blowers supply hot blast air to the blast furnaces. The No. 2 boilerhouse also generates steam for the coke battery.

The following boilers are in the ROP emission unit table:

EGBHZ3-1-BOILER	No. 1 boiler at No. 3 Boiler House Zug Island.	1/1/1988	Natural Gas Fuel only
EGBHZ3-2-BOILER	No. 2 boiler at No. 3 Boiler House Zug Island.	1/1/1988	Natural Gas Fuel only
EGBHZI3-1-BOILER, EGBHZI3-2-BOILER	Boilers 1-2 at Boiler House No. 3 at Zug Island	1/1/1988	N/A
EGBHZI1-1-BOILER, EGBHZI1-2-BOILER, EGBHZI1-3-BOILER, EGBHZI1-4-BOILER, EGBHZI1-5-BOILER; EGBHZI2-1-BOILER, EGBHZI2-2-BOILER, EGBHZI2-3-BOILER, EGBHZI2-4-BOILER, EGBHZI2-5-BOILER	Boilers 1-5 at Boiler House No. 1, and Boilers 1-5 at Boiler House No. 2 at Zug Island	1/1/1937 1/1/1938	N/A
EGBHMP-1-8, EGBHMP-1-9	Boiler Nos. 8 and 9 at the No. 1 Boiler House at the Main Plant	1/1/1969	N/A

INSPECTION NARRATIVE

On 7/30/18, Nathan Ganhs, USS Environmental, and I arrived on Zug Island around 9:30 a.m. We drove to B2 furnace where I intended to take Method 9 visible emissions readings of the casthouse roof monitor. On the drive over to B2 furnace, Mr. Ganhs and I noticed smoke billowing from the D4 furnace backdraft stack. Mr. Ganhs was unsure why the backdraft stack was in use as the furnace was not scheduled to be shut down until August 3, 2018. Note, the shut down is to reline the furnace among other activities.

By the time we were properly positioned to take readings at B2 furnace, I had missed the cast. This was around 9:45 a.m. The cast started at 8:10 a.m. and slag began flowing at 9:00 a.m. One of USS certified readers, Mr. Paul K., had taken readings of the roof monitor during the cast. I viewed his readings. There were no exceedances of the 20% 6 minute average opacity limit.

At 10:05 a.m., it appeared that the D4 backdraft stack was still emitting white smoke. As such, Mr. Ganhs and I drove closer to the D4 furnace, and I got out of the vehicle and began taking visible emissions readings. See attached VE sheet. A violation of the 20% 6 minute average opacity limit was observed.

Next, we proceeded to the No. 2 Boilerhouse. I observed the boiler stacks. There were no visible emissions from the stacks. Boiler 2-1 was not in operation. We entered to the control room and spoke to the operator. I recorded the following information from the control panel:

	NG	COG	BFG
Boiler 2-2	15%	10%	6%
Boiler 2-3	8%	17%	27%
Boiler 2-4	20%	10%	25%
Boiler 2-5	43%	13%	0

We drove by No. 1. Boilerhouse. I observed the stacks. There were no visible emissions. No. 3 Boilerhouse is not in operation.

We went back to B2 furnace. Another cast had started and slag was already flowing into the slag pit at 11:15 a.m. The cast had started at 10:15 a.m. and slag started flowing at 10:50 a.m. I took readings of the

roof monitor from 11:15 to 11:30 a.m. I recorded all zeros except for one 30% instantaneous reading at 11:23:30.

At 11:36 a.m., while slag was flowing out of the B2 casthouse and into the slag pit, I noticed that there was smoke continuously rising from the pit. I took a short video with my phone. There are several "doors" on the slag side of the casthouse. Mr. Ganhs explained that this sheet metal was put in place so that the wind does not blow smoke back into the casthouse. This has the potential to exit the roof monitor and result in an opacity violation.

At 11:48 a.m., I started taking B2 roof monitor VE readings again. No visible emissions exceedance was observed. At 12:15 p.m., the taphole was plugged.

Next, we met with Mr. Joe Menna who conducts much of the blast furnace baghouse inspections. I have summarized those notes in the B2 and D4 furnace inspection on 7/26/18.

We returned to Mr. Ganhs office and discussed recordkeeping.

RULES/PERMIT CONDITIONS EVALUATED

ROP 199600132d

GENERAL CONDITION 2. NOT IN COMPLIANCE. Exceedance of the 20% 6 minute average opacity limit (and the 27% exception) was observed from the D4 backdraft stack. Except as provided in subrules 2, 3, and 4 of R 336.1301, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of R 336.1301(1)(a) or (b) unless otherwise specified in this RO Permit. The grading of visible emissions shall be determined in accordance with R 336.1303. (R 336.1301(1) in pertinent part): a) A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity. b) A limit specified by an applicable federal new source performance standard.

TABLE E-01.01 BOILER No.1 at No.3 BOILER HOUSE ZUG ISLAND OPERATION/TABLE E-01.02 BOILER No.2 at No.3 BOILER HOUSE ZUG ISLAND OPERATION/TABLE F-01.01 No. 1 and No. 2 BOILERS at No. 3 BOILER HOUSE ZUG ISLAND

NOT APPLICABLE. A review of the MAERS data for 2015, 2016, and 2017 indicates that the No. 3 Boilerhouse on Zug Island has not been operational for at least the last three years. As such, the conditions in these tables are not applicable.

TABLE F-01.02 BOILERHOUSE NO. 1 & 2 (on Zug)

III. A. 2. IN COMPLIANCE. Monthly records are included in the additional spreadsheet submitted with the MAERS report every year. See attached example. The permittee shall keep records of all types and total amount of fuels consumed for each boiler on a monthly basis.

III. B.1, 2, and 3. IN COMPLIANCE. Based on a review of the opacity readings on site, opacity observations via Method 9 are conducted at the required frequency and length of time specified in the ROP. Opacity observations based on USEPA Test Method 9 shall be performed for a minimum of one hour of the stack of each operating boiler at least twice a year during operation. The permittee shall initiate corrective action upon observation of visible emissions exceeding the applicable visible emission limits of this permit and shall keep a written record of each required observation and corrective action taken.

V. 1. IN COMPLIANCE. As evidenced by the MAERS report and confirmed with the boiler operator while on site, the boilers in these boiler houses only fire BFG, NG, or COG. The type of fuels burned in No. 1 Boiler House Boilers No. 1 through No. 5 and in No. 2 Boiler House Boilers No. 1 through No. 5 shall be restricted to either Blast Furnace Gas (BFG), Coke Oven Gas (COG), or Natural Gas (NG).

TABLE F-01.03 MAIN PLANT BOILERHOUSE NO. 1

III.A. 2. IN COMPLIANCE. Monthly records are included in the additional spreadsheet submitted with the MAERS report every year. The permittee shall keep records of all types and total amount of fuels consumed for each boiler on a monthly basis.

III. B.1, 2, and 3. IN COMPLIANCE. Based on a review of the opacity readings on site, opacity observations via Method 9 are conducted at the required frequency and length of time specified in the ROP. Opacity observations based on USEPA Test Method 9 shall be performed for a minimum of one hour of the stack of each operating boiler at least twice a year during operation. The permittee shall initiate corrective action upon observation of visible emissions exceeding the applicable visible emission limits of this permit and shall keep a written record of each required observation and corrective action taken.

V.1. IN COMPLIANCE. As evidenced by the MAERS report, the boilers in these boiler houses only fire NG or COG. Note, this boilerhouse stopped using COG in February of 2016. The type of fuels burned in No. 8 Boiler and No. 9 Boiler at the No. 1 Boiler House at the Main Plant shall be restricted to either Coke Oven Gas (COG) or Natural Gas (NG).

.....
BOILER MACT – 40 CFR Part 63 Subpart DDDDD

NOT IN COMPLIANCE. According to the notifications submitted by USS, the boilers at Zug Island No. 1 Boilerhouse are subject to the Boiler MACT. According to the May 17, 2017 report, the facility missed the initial notification for these boilers and the associated compliance demonstration.

COMPLIANCE DETERMINATION

Facility does not appear to be in compliance with the ROP General Condition 2 during the inspection due to the excess visible emissions from the D4 backdraft stack. The facility also self reported violating conditions of the Boiler MACT for the No. 1 boilerhouse on Zug Island. As such, a VN will be issued.

NAME Kalish

DATE 10/11/18

SUPERVISOR W.M.