

## PERMIT TO INSTALL

### Table of Contents

COMMON ACRONYMS .....	2
POLLUTANT / MEASUREMENT ABBREVIATIONS.....	3
GENERAL CONDITIONS .....	4
EMISSION UNIT SPECIAL CONDITIONS.....	6
EMISSION UNIT SUMMARY TABLE .....	6
FLEXIBLE GROUP SPECIAL CONDITIONS.....	7
FLEXIBLE GROUP SUMMARY TABLE .....	7
FGBH2.....	8

## COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

\*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

### POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H <sub>2</sub> S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO <sub>x</sub>	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter equal to or less than 10 microns in diameter
PM <sub>2.5</sub>	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO <sub>2</sub>	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

## GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal condition or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

## EMISSION UNIT SPECIAL CONDITIONS

### EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUBHZI2-1-BOILER**	No. 1 Boiler at Zug Island No. 2 Boiler House	1/1/1938	FGBH2
EUBHZI2-2-BOILER**	No. 2 Boiler at Zug Island No. 2 Boiler House	1/1/1938	FGBH2
EUBHZI2-3-BOILER**	No. 3 Boiler at Zug Island No. 2 Boiler House	1/1/1938	FGBH2
EUBHZI2-4-BOILER**	No. 4 Boiler at Zug Island No. 2 Boiler House	1/1/1938	FGBH2
EUBHZI2-5-BOILER**	No. 5 Boiler at Zug Island No. 2 Boiler House	1/1/1938	FGBH2
**Other applicable permit requirements for the emission units in this table can be found in the Title V permit, ROP NO. 199600132d for EUBHZI2-1-BOILER through EUBHZI2-5-BOILER.			

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

## FLEXIBLE GROUP SPECIAL CONDITIONS

### FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FGBH2	Boilers in Zug Island Boilerhouse No. 2.	EUBHZI2-1-BOILER, EUBHZI2-2-BOILER, EUBHZI2-3-BOILER, EUBHZI2-4-BOILER, EUBHZI2-5-BOILER

**FGBH2  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Boilers in Zug Island Boilerhouse No. 2.

**Emission Unit:** EUBHZI2-1-BOILER, EUBHZI2-2-BOILER, EUBHZI2-3-BOILER, EUBHZI2-4-BOILER, EUBHZI2-5-BOILER

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. SO <sub>2</sub>	750.00 lbs/hr	Hourly <sup>B</sup>	FGBH2	SC VI.2	Federal Implementation Plan (FIP), Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)
Or					
2. SO <sub>2</sub>	81.00 lbs/hr <sup>A</sup>	Hourly <sup>B</sup>	FGBH2	SC VI.2	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)

<sup>A</sup> This limit applies to the owner/operator of Boilerhouse No. 2 (FGBH2) if Boilerhouse 1, A1 Blast Furnace, B2 Blast Furnace, D4 Blast Furnace, A/B Blast Furnace Flares, or D Furnace Flare is operating.

<sup>B</sup> The emission limits in SC I.1 and SC I.2 apply beginning two years after the effective date of the FIP, Docket Id No. EPA-R05-OAR-2021-0536 (at 40 CFR 52.1189(b)(1)(ii)). The effective date of the FIP is November 14, 2022.

3. The emission limits listed in SC I.1 and I.2 shall apply to the owner or operator of Boilerhouse No. 2 (FGBH2) located at 1300 Zug Island Road, Detroit, Michigan (River Rouge), **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b))**

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The type of fuels burned in Boilerhouse No. 2 (FGBH2) Boilers No. 1 through No. 5 shall be restricted to Blast Furnace Gas (BFG), Coke Oven Gas (COG), or Natural Gas (NG). **(SIP Consent Order No. 27-1993, Exhibit B, Zug Island Facility, Paragraph 1)**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. No later than two years after the effective date of the FIP, the owner or operator of the equipment located at 1300 Zug Island Road, Detroit, Michigan (River Rouge), shall install and continuously operate an SO<sub>2</sub>



continuous emission monitoring system (CEMS) to measure the SO<sub>2</sub> emissions from Boilerhouse 2 in conformance with 40 CFR Part 60, Subpart F Procedure 1. The effective date of the FIP is November 14, 2022. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(3)(i), Act 451 324.5503(b))**

## **V. TESTING/SAMPLING**

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

1. Within 180 days of commencement of operation of FGBH2 utilizing the exhaust stack (as required in SC VIII.1 and SC IX.1), the permittee shall perform a Method 9 certified visible emission observation of the stack for a minimum of one hour when operating any boiler in FGBH2. Subsequent observations must be performed at least once every six months thereafter (between Jan – June and July – December) during operation of FGBH2. 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. **(R 336.1201(3))**

## **VI. MONITORING/RECORDKEEPING**

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

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a))**
2. The owner/operator shall maintain the following records continuously for five years beginning on the effective date of the FIP. The effective date of the FIP is November 14, 2022: **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(5)(i), (iii), (iv), and (v), Act 451 324.5503(b))**
  - (a) All records of production for each affected unit in FGBH2 (fuel usage in operating boilers within FGBH2)
  - (b) In accordance with SC IV.1, all CEMS data, including the date, place, and time of sampling or measurement; parameters sampled or measured; and results.
  - (c) Records of quality assurance and quality control activities for emission monitoring systems including, but not limited to, any records required by 40 CFR part 60, appendix F Procedure 1.
  - (d) Records of all major maintenance activities performed on emission units, air pollution control equipment, CEMS, and other production measurement devices.

## **VII. REPORTING**

1. Upon the completion of the new stack and installation of CEMS, all reports under this section shall be submitted quarterly, unless otherwise specified, to Compliance Tracker, Air Enforcement and Compliance Assurance Branch, U.S. Environmental Protection Agency, Region 5, Mail Code AE-17J, 77 W. Jackson Blvd., Chicago, IL 60604-3590. The effective date of the FIP is November 14, 2022. A copy of the reports shall be sent the AQD District Supervisor at the same time. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(6), Act 451 324.5503(b))**
2. The owner or operator shall report CEMS data quarterly in accordance with CEMS requirements in SC VI.2 no later than the 30<sup>th</sup> day following the end of each calendar quarter. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(6)(ii), Act 451 324.5503(b))**
3. The owner or operator shall report the results of the initial compliance test for the Boilerhouse 2 stack within 60 days of conducting the test. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(6)(iii), Act 451 324.5503(b))**
4. The owner or operator shall submit quarterly excess emissions reports for FGBH2 no later than the 30<sup>th</sup> day following the end of each calendar quarter. Excess emissions means emissions that exceed the emission limits specified in SC I.1 and SC I.2. The reports shall include the magnitude, date(s), and duration of each period of excess emissions, specific identification of each period of excess emissions that occurs during all periods of operation including startups, shutdowns, and malfunctions of the unit, the nature and cause of any malfunction (if known), and the corrective action taken, or preventative measures adopted. When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the

reporting period, such information shall be stated in the quarterly reports. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(6)(iv) and (vii), Act 451 324.5503(b))**

5. The owner or operator of each unit shall submit quarterly CEMS performance reports, to include dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks), reason(s) why the CEMS was inoperative and steps taken to prevent recurrence, and any CEMS repairs or adjustments no later than the 30th day following the end of each calendar quarter. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(6)(v), Act 451 324.5503(b))**
6. The owner or operator shall also submit results of any CEMS performance tests required by 40 CFR part 60, appendix F, Procedure 1 (e.g., Relative Accuracy Test Audits, Relative Accuracy Audits, and Cylinder Gas Audits) no later than 30 days after the test is performed. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(6)(vi), Act 451 324.5503(b))**
7. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of operation of FGBH2 utilizing the exhaust stack (as required in SC VIII.1 and SC IX.1) and CEMS (as required in SC VI.2). Upon operation of FGBH2 using the exhaust stack (as required in SC VIII.1 and SC IX.1) and CEMS (as required in SC VI.2), the permittee shall submit the reports required by SC VII.2 and SC VII.4. **(R 336.1201(7)(a))**

**VIII. STACK/VENT RESTRICTION(S)**

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)	Underlying Applicable Requirements
1. SVBH2 <sup>c</sup>	--	170	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(2)(ii)
	154	--	40 CFR 52.21(c) & (d)

<sup>c</sup> SC IX.1 contains the date of compliance for the exhaust stack parameters.

**IX. OTHER REQUIREMENT(S)**

1. Within 2 years of the effective date of the FIP, the permittee shall not emit SO<sub>2</sub> from FGBH2 except from a stack that meets the stack height listed in SC VIII.1. The effective date of the FIP is November 14, 2022. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(2)(ii) , Act 451 324.5503(b))**