

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

May 26, 2016

PERMIT TO INSTALL
118-15

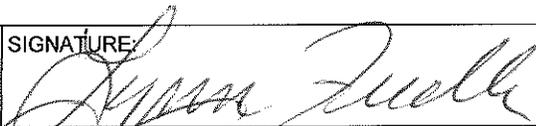
ISSUED TO
Marathon Petroleum Company LP

LOCATED AT
1300 South Fort Street
Detroit, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
A9831

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: August 3, 2015	
DATE PERMIT TO INSTALL APPROVED: May 26, 2016	SIGNATURE: 
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Table of Contents

Section	Page
Alphabetical Listing of Common Abbreviations / Acronyms	2
General Conditions	3
Special Conditions	5
Emission Unit Summary Table.....	5
Special Conditions for EU08-GOHTCHARHTR2-S1	6
Special Conditions for EU08-GOHT-S1	10
Flexible Group Summary Table	12
Special Conditions for FGTIER3-S1	13
Special Conditions for FGTIER3SO2-S1	15
Special Conditions for FGDHOUPANNUAL-S1	17
Special Conditions for FGCHANGES-S1	20
Appendix A: Continuous Emission Monitoring System Requirements for NO _x and O ₂	22
Appendix B: Recordkeeping Provisions – Actual to Projected-Actual Applicability Test.....	23
Appendix C: Recordkeeping Provisions for Sulfur Dioxide	24

Common Abbreviations / Acronyms

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO ₂ e	Carbon Dioxide Equivalent
CFR	Code of Federal Regulations	dscf	Dry standard cubic foot
COM	Continuous Opacity Monitoring	dscm	Dry standard cubic meter
Department/ department	Michigan Department of Environmental Quality	°F	Degrees Fahrenheit
EU	Emission Unit	gr	Grains
FG	Flexible Group	HAP	Hazardous Air Pollutant
GACS	Gallons of Applied Coating Solids	Hg	Mercury
GC	General Condition	hr	Hour
GHGs	Greenhouse Gases	HP	Horsepower
HVLP	High Volume Low Pressure*	H ₂ S	Hydrogen Sulfide
ID	Identification	kW	Kilowatt
IRSL	Initial Risk Screening Level	lb	Pound
ITSL	Initial Threshold Screening Level	m	Meter
LAER	Lowest Achievable Emission Rate	mg	Milligram
MACT	Maximum Achievable Control Technology	mm	Millimeter
MAERS	Michigan Air Emissions Reporting System	MM	Million
MAP	Malfunction Abatement Plan	MW	Megawatts
MDEQ	Michigan Department of Environmental Quality	NMOC	Non-methane Organic Compounds
MSDS	Material Safety Data Sheet	NO _x	Oxides of Nitrogen
NA	Not Applicable	ng	Nanogram
NAAQS	National Ambient Air Quality Standards	PM	Particulate Matter
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM ₁₀	Particulate Matter equal to or less than 10 microns in diameter
NSPS	New Source Performance Standards	PM _{2.5}	Particulate Matter equal to or less than 2.5 microns in diameter
NSR	New Source Review	pph	Pounds per hour
PS	Performance Specification	ppm	Parts per million
PSD	Prevention of Significant Deterioration	ppmv	Parts per million by volume
PTE	Permanent Total Enclosure	ppmw	Parts per million by weight
PTI	Permit to Install	psia	Pounds per square inch absolute
RACT	Reasonable Available Control Technology	psig	Pounds per square inch gauge
ROP	Renewable Operating Permit	scf	Standard cubic feet
SC	Special Condition	sec	Seconds
SCR	Selective Catalytic Reduction	SO ₂	Sulfur Dioxide
SNCR	Selective Non-Catalytic Reduction	TAC	Toxic Air Contaminant
SRN	State Registration Number	Temp	Temperature
TEQ	Toxicity Equivalence Quotient	THC	Total Hydrocarbons
USEPA/EPA	United States Environmental Protection Agency	tpy	Tons per year
VE	Visible Emissions	µg	Microgram
		µm	Micrometer or Micron
		VOC	Volatile Organic Compounds
		yr	Year

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

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 Environmental Quality, 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 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 R 336.1219 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 R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(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 conditions 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 R 336.1301, 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 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 R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

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 (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EU08-GOHTCHARHTR2-S1	Gas Oil Hydrotreater Charge Heater No. 2. Area 8. Fuel: Refinery fuel gas and natural gas. Permit: 118-15	Date of PTI	FGTIER3-S1 FGTIER3SO2-S1 FGDHOUANNUAL-S1
EU08-GOHT-S1	Gas Oil Hydrotreater Unit: Area 8. Reacts sour gas oil streams with hydrogen over a catalyst bed to remove sulfur. The GOHT unit consists of process vessels (reactors, distillation tower, absorbing towers, stripper tower) and two charge heaters, cooling tower, flare, compressors, pumps, piping, drains, & various components (pumps & compressor seals, process valves, pressure relief valves, flanges, connectors, etc.). Other EU's were created to address individual pieces of equipment within this unit that have specific applicable requirements. Permit: 262-02, 63-08D, 118-15	11/9/2005 11/5/2012 Date of PTI	FGPROCUNITS-S1
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 336.1290.			

The following conditions apply to: EU08-GOHTCHARHTR2-S1

DESCRIPTION: Gas Oil Hydrotreater Charge Heater No. 2. Area 8. Fuel: Refinery fuel gas and natural gas.
 Permit: 118-15

Flexible Group ID: FGTIER3-S1, FGHEATERS-S1, FGTIER3SO2-S1

POLLUTION CONTROL EQUIPMENT: Low NOx Burners

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx	0.040 lb/MMBTU or 40 ppmv, dry basis corrected to 0%O ₂	30 day rolling average basis	EU08-GOHTCHARHTR2-S1	SC VI.4	R 336.1205 40 CFR 52.21 (c) and (d) 40 CFR Part 60 Subpart Ja
2. PM	0.0019 lb/MMBTU	Three hour average	EU08-GOHTCHARHTR2-S1	GC 13	R 336.1205
3. PM10	0.0076 lb/MMBTU	Three hour average	EU08-GOHTCHARHTR2-S1	SC V.1	R 336.1205 40 CFR 52.21 (c) and (d)
4. PM2.5	0.0076 lb/MMBTU	Three hour average	EU08-GOHTCHARHTR2-S1	SC V.1	R 336.1205 40 CFR 52.21 (c) and (d)
5. CO	0.01 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU08-GOHTCHARHTR2-S1	SC VI.6	R 336.1201(3)
6. VOC	0.0055 lb/MMBTU	Three hour average	EU08-GOHTCHARHTR2-S1	SC V.1	R 336.1702

II. MATERIAL LIMITS

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. H ₂ S content of the refinery fuel gas	0.10 grain per dry standard cubic foot (230 milligrams per dry standard cubic meter or 162 ppmv)	Based upon a three hour rolling average	EU08-GOHTCHARHTR2-S1	SC VI.1	40 CFR 60.102a(g)(1)(ii) 40 CFR Part 60 Subparts A and Ja
2. H ₂ S content of the refinery fuel gas	60 ppmv	Daily on a 365 successive calendar day rolling average basis	EU08-GOHTCHARHTR2-S1	SC VI.1	40 CFR 60.102a(g)(1)(ii)
3. TRS content of the refinery fuel gas	45 ppmv ³	Daily on a 365 successive calendar day rolling average basis	EU08-GOHTCHARHTR2-S1	SC VI.2	R 336.1201(3)

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The heat input to EU08-GOHTCHARHTR2-S1 shall not exceed 115 MMBTU/hr on a daily average. **(R 336.1205, R 336.1225, 40 CFR 52.21 (c) and (d))**
2. The heat input to EU08-GOHTCHARHTR2-S1 shall not exceed 85 MMBTU/hr on an annual rolling average, as determined at the end of each calendar month. **(R 336.1205, 40 CFR 52.21 (c) and (d))**
3. The permittee shall not operate EU08-GOHTCHARHTR2-S1 unless the unit's low-NO_x burners are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1910, 40 CFR 52.21 (c) and (d))**
4. The combined heat input to EU08-GOHTCHARHTR-S1 and EU08-GOHTCHARHTR2-S1 shall not exceed 100 MMBTU/hr on an annual rolling average, as determined at the end of each calendar month.³ **(R 336.1201(3))**

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

1. Within 180 days after commencement of trial operation of EU08-GOHTCHARHTR2-S1 and every five years thereafter, the permittee shall verify emission rates from EU08-GOHTCHARHTR2-S1 of the pollutants listed below 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. 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. For verification of PM10 and PM2.5 emissions, testing shall include both the filterable and condensable fractions. **(R 336.2001, R 336.2003, R 336.2004)**

PM10	(R 336.1205, 40 CFR 52.21 (c) and (d))
PM2.5	(R 336.1205, 40 CFR 52.21 (c) and (d))
VOC ³	(R 336.1201(3))
Sulfuric acid mist ³	(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 monitor and keep records of the concentration of hydrogen sulfide (H₂S) in the refinery fuel gas burned in EU08-GOHTCHARHTR2-S1 in accordance with the Federal Standards of Performance as specified in 40 CFR 60, Subpart Ja, in a manner and with instrumentation acceptable to the Air Quality Division. **(R 336.1205, 40 CFR 60.107a(a)(2))**
2. The permittee shall monitor and keep records of the concentration of total reduced sulfur (TRS) in the refinery fuel gas burned in EU08-GOHTCHARHTR2-S1, in a manner and with instrumentation acceptable to the Air Quality Division.³ **(R 336.1201(3))**
3. Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H₂S in the fuel gas being burned. **(40 CFR 60.107a(1)(vi))**
4. The permittee shall keep records of emissions and operating information to comply with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Ja. **(40 CFR Part 60 Subparts A & Ja)**

5. The permittee shall install, calibrate, maintain and operate in a satisfactory manner devices to monitor and record on a continuous basis the NO_x and oxygen emissions from EU08-GOHTCHARHTR2-S1. The permittee shall install and operate the Continuous Emission Monitoring System (CEMS) to meet the timelines, requirements and reporting detailed in Appendix A. **(40 CFR Part 60 Subpart Ja)**
6. The permittee shall install, calibrate, maintain and operate in a satisfactory manner devices to monitor and record on a continuous basis the CO and oxygen emissions from EU08-GOHTCHARHTR2-S1, The permittee shall install and operate the CEMS in accordance with the requirements of 40 CFR §§60.11, 60.13, and Part 60, Appendix A, the applicable performance specification test of 40 CFR Part 60 Appendices B and F. With respect to 40 CFR Part 60 Appendix F, in lieu of the requirements of 40 CFR Part 60 Appendix F §§5.1.1, 5.1.3, and 5.1.4, the permittee shall conduct either a Relative Accuracy Audit (RAA) or a Relative Accuracy Test Audit (RATA) once every twelve (12) calendar quarters, provided that a Cylinder Gas Audit is conducted each calendar quarter. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report.³ **(R 336.1201(3))**
7. The permittee shall monitor, in a satisfactory manner, the heat input for EU08-GOHTCHARHTR2-S1, in MMBTU/hr, on a daily, monthly, and rolling 12-month time period basis. **(R 336.1205, R 336.1225, 40 CFR 52.21 (c) and (d))**
8. The permittee shall keep daily records of the type and amount of fuel used in EU08-GOHTCHARHTR2-S1. **(R 336.1205, R 336.1225, 40 CFR 52.21 (c) and (d))**
9. The permittee shall keep, in a satisfactory manner, daily, monthly, and rolling 12-month time period records of the heat input for EU08-GOHTCHARHTR2-S1, in MMBTU/hr. **(R 336.1205, R 336.1225, 40 CFR 52.21 (c) and (d))**
10. The permittee shall keep, in a satisfactory manner, daily, monthly, and rolling 12-month time period records of the combined heat input for EU08-GOHTCHARHTR-S1 and EU08-GOHTCHARHTR2-S1, in MMBTU/hr.³ **(R 336.1201(3))**

VII. REPORTING

1. The permittee shall submit the data on the concentration of hydrogen sulfide in the refinery fuel gas burned in EU08-GOHTCHARHTR2-S1 to the Air Quality Division (AQD) District Supervisor in an acceptable format within 30 days following the end of the quarter in which the data were collected. **(40 CFR 60.7)**
2. The permittee shall submit the data on the concentration of total reduced sulfur in the refinery fuel gas burned in EU08-GOHTCHARHTR2-S1 to the Air Quality Division (AQD) District Supervisor in an acceptable format within 30 days following the end of the quarter in which the data were collected.³ **(R 336.1201(3))**
3. The permittee shall submit the data on the concentration of NO_x in the exhaust gas from EU08-GOHTCHARHTR2-S1 to the Air Quality Division (AQD) District Supervisor in an acceptable format within 30 days following the end of the quarter in which the data were collected. **(40 CFR 60.7)**
4. The permittee shall submit the data on the concentration of CO in the exhaust gas from EU08-GOHTCHARHTR2-S1 to the Air Quality Division (AQD) District Supervisor in an acceptable format within 30 days following the end of the quarter in which the data were collected.³ **(R 336.1201(3))**

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)	Underlying Applicable Requirements
1. SV08-H2 (EU08-GOHTCHARHTR2-S1)	58.5	170	R 336.1225 40 CFR 52.21 (c) and (d)

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all provision of the federal Standards of Performance of New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Ja, as they apply to EU08-GOHTCHARHTR2-S1. **(40 CFR Part 60 Subparts A & Ja)**
2. The permittee shall not operate EU08-GOHTCHARHTR2-S1 unless an acceptable plan that describes how emissions will be minimized during all startups, shutdowns, and malfunctions has been submitted to the AQD District Supervisor and the plan is being implemented, maintained, and followed. The plan shall incorporate procedures recommended by the equipment manufacturer as well as standard industry practices. **(R 336.1205, R 336.1911, R 336.1912)**
3. The permittee shall comply with all provisions of the federal National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters as specified in 40 CFR Part 63 Subparts A and DDDDD, as they apply to EU08-GOHTCHARHTR2-S1. **(40 CFR 63 Subparts A & DDDDD)**

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

³This condition is included at the request of the permittee.

The following conditions apply to: EU08-GOHT-S1

DESCRIPTION: Gas Oil Hydrotreater Unit: Area 8. Reacts sour gas oil streams with hydrogen over a catalyst bed to remove sulfur. The GOHT unit consists of process vessels (reactors, distillation tower, absorbing towers, stripper tower) and two charge heaters, cooling tower, flare, compressors, pumps, piping, drains, & various components (pumps & compressor seals, process valves, pressure relief valves, flanges, connectors, etc.). Other EU's were created to address individual pieces of equipment within this unit that have specific applicable requirements.

Permit: 262-02, 63-08D, 118-15

Flexible Group ID: FGPROCUNITS-S1

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. The permittee shall implement a program to monitor at least 90 percent of the flanges and connectors in gas/vapor and light liquid VOC service in EU08-GOHT-S1. The program shall meet the following requirements. **(R 336.1205, R 336.1225, R 336.1702(a))**
 - a. Monitoring shall be conducted on a quarterly basis, using test methods and procedures described in Appendix 5-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012b.
 - b. A leak shall be defined as an instrument reading of 500 ppm or greater, as specified in NSPS Subpart VVa.
 - c. Flanges and connectors may be excluded from the monitoring program if they are "unsafe to monitor" as defined in 40 CFR 60.482-7(g)(1), or "difficult to monitor" as defined in 40 CFR 60.482-7(h)(1).
 - d. Permittee shall maintain records utilizing the procedures in Appendix 4-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012b.

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FLEXIBLE GROUP SUMMARY TABLE

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

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGTIER3-S1	These emission units and flexible groups used the hybrid test for PSD applicability. Permit: 118-15	EU08-GOHTCHARHTR-S1, EU08-GOHTCHARHTR2-S1, EU08-GOHT-S1, EU71-H2HTR-S3, EU71-H2STEAMSYS-S3, EU42-43SULRECOV-S1, EU72-SULRBLOCK2-S1
FGTIER3SO2-S1	These emission units will show that there is no increase in sulfur dioxide emissions due to the Tier 3 Fuels project. Permit:118-15	EU08-GOHTCHARHTR-S1, EU08-GOHTCHARHTR2-S1, EU11-FCCU-S1, EU71-H2HTR-S1, EU42-43SULRECOV-S1, EU72-SULRBLOCK2-S1
FGDHOU PANNUAL-S1	These emission units and flexible groups used the Actual-to-Potential test for PSD applicability. The emission limits in this group serve to limit the Potential to Emit of covered equipment.	EU11-FCCU-S1, EU14-CCRPLCATREG-S1, EU21-S2OFFGAS-S1, FG29-IGF-S1, EU42-43SULRECOV-S1, EU70-COKER-S1, EU-COKERFLARE-S1, EU72-SULRBLOCK2-S1, FG-HEATERS-S1, FG-PROCUNITS-S1, FGCOOLTOWERS-S1, FGHOUP TANKS-S1, EU71-H2STEAMSYS-S1, EU27-B&WBOILER1-S1, EU27-ZURNBOILER-S1, EU08-GOHTCHARHTR2-S1
FGCHANGES-S1	The conditions in this flexible group apply to emission units and flexible groups that are not part of the Tier 3 Fuels Project, but are included in PTI 118-15 at the request of the permittee to make these requirements enforceable. These conditions will be incorporated into the correct emission units and flexible groups of MI-ROP-A9831-2012b. Once these conditions have been incorporated into the ROP, this flexible group should be deleted. Permit 118-15.	EU42-43SULRECOV-S1, EU-COKERFLARE-S1, EU27-ZURNBOILER-S1, EUUNIFFLARE-S1

The following conditions apply to: FGTIER3-S1

DESCRIPTION: These emission units and flexible groups used the hybrid test for PSD applicability for the Tier 3 Fuels Project. Permit: 118-15

Emission Units: EU08-GOHTCHARHTR-S1, EU08-GOHTCHARHTR2-S1, EU08-GOHT-S1,
EU71-H2HTR-S1, EU71-H2STEAMSYS-S1, EU42-43SULRECOV-S1,
EU72-SULRBLOCK2-S1

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. Before beginning actual construction of the Tier 3 Fuels Project, the permittee shall document and maintain a record of the following information: **(R 336.2818(3)(a), R 336.2818(3)(f)(ii))**
 - a. A description of the project.
 - b. Identification of the emissions unit or units whose emissions of a regulated new major source review pollutant may be affected by the project.
 - c. A description of the applicability test used to determine that the project is not a major modification for any regulated new source review pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under R 336.2801(II)(ii)(C) and an explanation for why such amount was excluded, and any netting calculations, if applicable.

2. Before beginning actual construction of the Tier 3 Fuels Project, the permittee shall document and maintain a record of the following information: **(R 336.2902(6)(a))**
 - a. A description of the project.
 - b. Identification of the emissions unit or units whose emissions of a regulated new major source review pollutant may be affected by the project.
 - c. A description of the applicability test used to determine that the project is not a major modification for any regulated new source review pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under R 336.2901(dd)(ii)(C) and an explanation for why such amount was excluded, and any netting calculations, if applicable.
3. The permittee shall calculate and keep records of the annual emissions of SO₂ from FGTIER3-S1 described in Appendix B, in tons per calendar year. Calculations and record keeping shall begin upon startup of EU08-GOHTCHARHTR2-S1 or the new reactor in EU08-GOHT-S1, whichever occurs first and shall continue for five (5) years. **(R 336.2902(6)(c))**

VII. REPORTING

1. 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 date of completion of the activity. **(R 336.1201(7)(a))**
2. The permittee shall submit records of the annual emission of SO₂ from FGTIER3-S1 described in Appendix B, in tons per calendar year, to the AQD Permit Section Supervisor within 60 days following the end of each reporting year if both the following occur:
 - a. The calendar year actual emission of SO₂ exceed the baseline actual emissions (BAE) by a significant amount, and
 - b. The calendar year actual emissions differ from the pre-construction projection. The pre-construction projection is the sum of the projected actual emissions from each existing emission unit and the potential emissions from each new emission unit included in the Hybrid Applicability Test used for FGTIER3-S1.

The report shall contain the name, address, and telephone number of the facility (major stationary source); the annual emissions as calculated pursuant to VI.3, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection). **(R 336.2902(6)(e))**

See Appendix B

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: FG TIER3SO2-S1

DESCRIPTION: These emission units will show that there is no increase in sulfur dioxide emissions due to the Tier 3 Fuels project. Permit:118-15

Emission Units: EU08-GOHTCHARHTR-S1, EU08-GOHTCHARHTR2-S1, EU11-FCCU-S1,
EU71-H2HTR-S1, EU42-43SULRECOV-S1, EU72-SULRBLOCK2-S1

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. SO ₂	88.0 tpy ³	Annual rolling average as determined at the end of each calendar month	FGTIER3SO2-S1	SC VI.1	R 336.1201(3)

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

NA

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 keep records of the annual emissions of SO₂ from FG TIER3SO2-S1 described in Appendix C, in tons per calendar year. Calculations and record keeping shall begin upon startup of EU08-GOHTCHARHTR2-S1 or the new reactor in EU08-GOHT-S1, whichever occurs first.³ (R 336.1201(3))

VII. REPORTING

1. The permittee shall submit records of the annual emission of SO₂ from FG TIER3SO2-S1 described in Appendix C, in tons per calendar year, to the AQD Permit Section Supervisor within 60 days following the end of each reporting year. Reporting shall begin upon startup of EU08-GOHTCHARHTR2-S1 or the new reactor in EU08-GOHT-S1, whichever occurs first, and continue for five (5) years. The report shall contain the name, address, and telephone number of the facility (major stationary source); the annual emissions as calculated pursuant to VI.1, and any other information the owner or operator wishes to include.³
(R 336.1201(3))

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

³This condition is included at the request of the permittee.

The following conditions apply to: FGDHOUPANNUAL-S1

DESCRIPTION: These emission units and flexible groups used the Actual-to-Potential test for PSD applicability. The emission limits in this group serve to limit the Potential to Emit of covered equipment.

Emission Units: EU11-FCCU-S1, EU14-CCRPLCATREG-S1, EU21-S2OFFGAS-S1, FG29-IGF-S1, EU42-43SULRECOV-S1, EU70-COKER-S1, EU-COKERFLARE-S1, EU72-SULRBLOCK2-S1, FG-HEATERS-S1, FG-PROCUNITS-S1, FGCOOLTOWERS-S1, FGHOIPTANKS-S1, EU71-H2STEAMSYS-S1, EU27-B&WBOILER1-S1, EU27-ZURNBOILER-S1, EU08-GOHTCHARHTR2-S1

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	122.2 tpy	Rolling 12-month time period *	FGDHOUPANNUAL-S1	SC VI.1	R 336.1205, R 336.2802, 40 CFR 52.21
2. PM10	206.6 tpy	Rolling 12-month time period *	FGDHOUPANNUAL-S1	SC VI.1	R 336.1205, R 336.2802, 40 CFR 52.21
3. NO _x	642 tpy	Rolling 12-month time period *	FGDHOUPANNUAL-S1	SC VI.1	R 336.1205, R 336.2802, 40 CFR 52.21
4. SO ₂	371 tpy	Rolling 12-month time period *	FGDHOUPANNUAL-S1	SC VI.1	R 336.1205, R 336.2802, 40 CFR 52.21
5. SO ₂	300 tpy ³	Rolling 12-month time period *	FGDHOUPANNUAL-S1	SC VI.1	R 336.1201(3)
6. CO	251.5 tpy	Rolling 12-month time period *	FGDHOUPANNUAL-S1	SC VI.1	R 336.1205, R 336.2802, 40 CFR 52.21
7. VOC	462 tpy	Rolling 12-month time period *	FGDHOUPANNUAL-S1	SC VI.1	R 336.1205, R 336.2802, 40 CFR 52.21
8. H ₂ SO ₄	22.76 tpy	Rolling 12-month time period *	FGDHOUPANNUAL-S1	SC VI.1	R 336.1205, R 336.2802, 40 CFR 52.21
9. H ₂ S	8.44 tpy	Rolling 12-month time period *	FGDHOUPANNUAL-S1	SC VI.1	R 336.1205, R 336.2802, 40 CFR 52.21
10. Total reduced sulfur (TRS)	9.73 tpy	Rolling 12-month time period *	FGDHOUPANNUAL-S1	SC VI.1	R 336.1205, R 336.2802, 40 CFR 52.21

* Rolling 12-month time period as determined at the end of each calendar month.

Limits on the units and processes put in place in this permit for the operation of the facility will not cause a combination of increases or decreases that would violate the netting conclusion.

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall calculate the PM, PM10, NO_x, SO₂, CO, VOC, H₂SO₄, H₂S, and TRS emission rates from FGDHOU PANNUAL-S1 monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor, considering the following. **(R 336.1205, R 336.2802, 40 CFR 52.21, 40 CFR Part 51 Appendix S)**
 - a. For storage tanks, the permittee may maintain VOC, H₂S, and TRS emission calculations and monthly throughput records in lieu of performing monthly VOC, H₂S, and TRS calculations.
 - b. CO emissions during periods of startup, shutdown, and malfunction for each emission unit in FG-HEATERS-S1 without a CO CEMS shall be calculated at 400 ppmv at 3 percent excess oxygen. For each emission unit in FG-HEATERS-S1 without a CO CEMS, for which the permittee has collected CO emissions data during startup, shutdown and malfunction periods from representative process heaters, the permittee may, after submitting a demonstration to the AQD District Supervisor that the emission data is representative, use the representative process heater data for calculating the CO emission rate from that emission unit.
 - c. VOC, H₂S, and TRS emissions from cooling towers shall be calculated for periods of leaks of process fluids into the cooling water.
 - d. H₂S and TRS emissions from EU72-SULRBLOCK2-S1 shall include the emissions resulting from non-operation of the sulfur pit degassing system.
 - e. Fugitive emissions from all components that may leak, such as those addressed in leak detection and repair programs.
 - f. H₂S and TRS emissions from sulfur recovery and loading operations.
 - g. All emission calculations shall include emissions from startups, shutdowns, and malfunctions.
 - h. The data obtained from the sulfur content sampling program for various sulfur laden products and process streams.
 - i. Emissions resulting from the steam to hydrocarbon ration not being maintained at the appropriate level for each flare.

VII. REPORTING

1. 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 date of completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than 180 days after the start-up of EU70-COKER-S1. **(R 336.1216(1), R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

²This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

³This condition is included at the request of the permittee.

The following conditions apply Source-Wide to: FGCHANGES-S1

DESCRIPTION: The conditions in this flexible group apply to emission units and flexible groups that are not part of the Tier 3 Fuels Project, but are included in PTI 118-15 at the request of the permittee to make these requirements enforceable. These conditions will be incorporated into the correct emission units and flexible groups of MI-ROP-A9831-2012b. Once these conditions have been incorporated into the ROP, this flexible group should be deleted.

Emission Units: EU42-43SULRECOV-S1, EU-COKERFLARE-S1, EU27-ZURNBOILER-S1, EUUNIFFLARE-S1

I. EMISSION LIMITS

The following condition applies to EU27-ZURNBOILER-S1:

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx	0.08 lb/MMBTU ^{3,a}	Annual rolling average as determined at the end of each calendar month	EU27-ZURNBOILER-S1	SC VI.1	R 336.1201(3)

^a This emission limit applies upon startup of EU08-GOHTCHARHTR2-S1 or the new reactor in EU08-GOHT-S1, whichever occurs first.

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

The following condition applies to EU42-43SULRECOV-S1:

1. The permittee shall equip and maintain the EU42-43SULRECOV-S1 sulfur pit with a properly operating system to capture and remove vapors from the sulfur pit. Installation shall be completed prior to startup of EU08-GOHTCHARHTR2-S1 or the new reactor in EU08-GOHT-S1, whichever occurs first. Gases captured and removed from the sulfur pit shall be returned to the inlet of EU42-43SULRECOV-S1 or routed to the thermal oxidizer.³ **(R 336.1201(3))**

The following conditions apply to EU27-ZURNBOILER-S1:

2. The permittee shall not operate EU27-ZURNBOILER-S1 unless the low NOx burners are installed and operating properly. Installation shall be completed prior to startup of EU08-GOHTCHARHTR2-S1 or the new reactor in EU08-GOHT-S1, whichever occurs first.³ **(R 336.1201(3))**
3. The permittee shall install a flue gas recirculation system on EU27-ZURNBOILER-S1 to meet the emission limit in SC I.1 above. Installation shall be completed prior to startup of EU08-GOHTCHARHTR2-S1 or the new reactor in EU08-GOHT-S1, whichever occurs first. The flue gas recirculation system shall be operated and maintained in a manner consistent with the manufacturer's guidelines.³ **(R 336.1201(3))**

The following condition applies to EU-UNIFFLARE-S1 and should be included in FG-FLARES-S1 in MI-ROP-A9831-2012b:

4. The permittee shall install a flare gas recovery system upstream of EU-UNIFFLARE-S1 to recover and route flare gas to the refinery fuel gas treatment system. The installation shall be completed by June 30, 2016.³ **(R 336.1201(3))**

The following condition applies to EU-COKERFLARE-S1 and should be included in EU-COKERFLARE-S1 in MI-ROP-A9831-2012b:

5. The permittee shall install additional flare gas recovery capacity upstream of EU-COKERFLARE-S1 to recover and route flare gas to the fuel gas treatment system. The installation shall be completed by December 31, 2018.³ **(R 336.1201(3))**

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

³This condition is included at the request of the permittee.

APPENDIX A

NO_x and O₂ Monitoring

Continuous Emission Monitoring System (CEMS) Requirements

1. Within 30 calendar days after commencement of trial operation, the permittee shall submit two copies of a Monitoring Plan to the AQD, for review and approval. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required CEMS.
2. Within 150 calendar days after commencement of trial operation, the permittee shall submit two copies of a complete test plan for the CEMS to the AQD for approval.
3. Within 180 calendar days after commencement of trial operation, the permittee shall complete the installation and testing of the CEMS.
4. Within 60 days of completion of testing, the permittee shall submit to the AQD two copies of the final report demonstrating the CEMS complies with the requirements of the corresponding Performance Specifications (PS) in the following table.

Pollutant	Applicable PS
NO _x	2
O ₂	3
CO	4 or 4A

5. The span value for NO_x shall be 2.0 times the lowest emission standard or as specified in the federal regulations.
6. The span value for CO shall be 50 ppmv.
7. The CEMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and the applicable PS of Appendix B to 40 CFR Part 60.
8. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR Part 60. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F).
9. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
 - a. A report of each exceedance above the limits specified in the conditions of this permit. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
 - b. A report of all periods of CEMS downtime and corrective action.
 - c. A report of the total operating time of the emission unit during the reporting period.
 - d. A report of any periods that the CEMS exceeds the instrument range.
 - e. If no exceedances or CEMS downtime occurred during the reporting period, the permittee shall report that fact.

The permittee shall keep all monitoring data on file for a period of at least five years and make them available to the AQD upon request.

**APPENDIX B:
 Recordkeeping Provisions for Source Using
 Actual to Projected-Actual Applicability Test**

All information in this Appendix shall be maintained pursuant to R 336.2902(6) for five years after the start-up of EU08-GOHTCHARHTR2-S1 or the new reactor in EU08-GOHT-S1, whichever occurs first, and shall be made available to the Department upon request.

A. Project Description: The Tier 3 Fuels Project will allow the facility to produce gasoline with a lower sulfur content that will comply with the US EPA Tier 3 standard. This project includes installation of a second gasoil hydrotreater charge heater (EU08-GOHTCHARHTR2-S1) and a second reactor in the gasoil hydrotreater process unit (EU08-GOHT-S1). The project also may result in emission changes for some existing emission units (EU08-GOHTCHARHTR-S1, EU71-H2HTR-S1, EU71-H2STEAMSYS-S1, EU42-43SULRECOV-S1, and EU72-SULRBLOCK2-S1)

B. Applicability Test Description: For all new emission units, the increase in actual emissions from the project is based on the actual-to-potential test. For existing emission units, the actual emissions increase due to the project was based on the actual-to-projected actual test.

C. Emission Projections

Table C

Emission Unit/Flexible Group ID	Pollutant	Emissions (tpy)				Reason for Exclusion
		Baseline Actual	Projected Actual ^a	Excluded	Project Increase	
FGTIER3-S1	SO ₂	57.53	64.14	12.2	3.63	Excluded emissions are emissions due to product demand growth that are unrelated to the project and that the existing equipment was capable of accommodating. Emissions are based on CEMS data, emission test data, and production/throughput data.

a. This includes the potential to emit for the new heater, EU08-GOHTCHARHTR2-S1.

D. Actual Emissions

Table D

Emission Unit/Flexible Group ID	Pollutant	Emissions (tpy)				Reason for Exclusion
		Baseline Actual	Actual	Excluded	Project Increase	
FGTIER3-S1	SO ₂	57.53				

**APPENDIX C:
Recordkeeping Provisions for Sulfur Dioxide**

All information in this Appendix shall be maintained after the start-up of EU08-GOHTCHARHTR2-S1 or the new reactor in EU08-GOHT-S1, whichever occurs first, and shall be made available to the Department upon request.

- A. Project Description: The Tier 3 Fuels Project will allow the facility to produce gasoline with a lower sulfur content that will comply with the US EPA Tier 3 standard. This project includes installation of a second gasoil hydrotreater charge heater (EU08-GOHTCHARHTR2-S1) and a second reactor in the gasoil hydrotreater process unit (EU08-GOHT-S1). The project also may result in emission changes for some existing emission units (EU08-GOHTCHARHTR-S1, EU11-FCCU-S1, EU71-H2HTR-S1, EU42-43SULRECOV-S1, and EU72-SULRBLOCK2-S1)

- B. The permittee will document that there has been no increase in actual sulfur dioxide emissions from the Tier 3 Fuels Project.

- C. Actual Emissions

Table C

Emission Unit/Flexible Group ID	Pollutant	Baseline Actual Emissions (tpy)	Calendar Year Actual Emissions (tpy)
FGTIER3SO2-S1	SO ₂	89.03	