

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY  
AIR QUALITY DIVISION**

June 12, 2020

**PERMIT TO INSTALL**  
57-20

**ISSUED TO**  
Marathon Petroleum Company, LP

**LOCATED AT**  
1300 South Fort Street  
Detroit, Michigan 48217

**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 Environment, Great Lakes, and Energy. 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: <b>May 21, 2020</b>	
DATE PERMIT TO INSTALL APPROVED: <b>June 12, 2020</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

## PERMIT TO INSTALL

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## 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
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	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 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 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.

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-COKERFLARE-S1	Coker Plant Flare. Area 76. Permit: 63-08E	11/05/2012	FG-FLARES-S1 FGDHOUPANNUAL-S1
EUCRUDEFLARE-S1	Crude/Vacuum Unit Flare. Area 4. Permit: 63-08E	01/01/1966 11/05/2012	FGFLARES-S1 FGREFINEFLARES-S1
EUUNIFFLARE-S1	Unifiner Flare. Area 7. Permit: 63-08E	01/01/1974 11/05/2012	FGFLARES-S1 FGREFINEFLARES-S1
EUALKYFLARE-S1	Alkylation Unit Flare. Area 9. Permit: 63-08E	01/01/1974 11/05/2012	FGFLARES-S1 FGREFINEFLARES-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 336.1291.

### 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>
FGFLARES-S1	Refinery Flares (NSPS, 40 CFR Part 60, Subpart J and where applicable Subpart Ja) Permit: 63-08E	EUCRUDEFLARE-S1, EUUNIFFLARE-S1, EUALKYFLARE-S1, EU-COKERFLARE-S1

**FGFLARES-S1  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

All refinery flares. Four flares are subject to the NSR Consent Decree (USEPA Consent Order 01-40119) and subsequent revisions: EU-CRUDEFLARE-S1, EU-UNIFFLARE-S1, and EU-ALKYFLARE-S1  
 Permit: 63-08E

**Emission Unit:** EUCRUDEFLARE-S1, EUUNIFFLARE-S1, EUALKYFLARE-S1, EU-COKERFLARE-S1

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

1. There shall be no visible emissions from any flare in FGFLARES-S1 except for periods not to exceed a total of five minutes during any two consecutive hours. This requirement is based on the federal Standards of Performance for New Stationary Sources, 40 CFR 60.18(c)(1). **(40 CFR Part 60, Subparts A and J)**

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. H <sub>2</sub> S in refinery fuel gas burned <sup>a,b</sup>	160 ppmv on a 3 hour rolling average basis	Three hour rolling average	Each flare in FGFLARES-S1	SC VI.1	40 CFR60.103a(h)
<sup>a</sup> The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this requirement. For flares equipped with flare gas recovery, the determination that a relief valve leakage or other emergency malfunction is exempt from this requirement will be based on the root cause analysis conducted in accordance with SC III.3, SC III.4, SC III.7, SC III.11, and SC III.12 <sup>b</sup> The permittee shall comply with this material limit and other applicable requirements of 40 CFR Part 60, Subparts A and Ja by the dates specified by USEPA Consent Decree 12-11544, as amended.					

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

1. The permittee shall conduct an event-specific investigation into each flaring incident that results in sulfur dioxide emissions greater than 500 pounds from FGFLARES-S1 in any 24-hour period. The investigation shall be performed in accordance with the requirements outlined in SC III.9. The permittee may rely on prior investigation reports for events that have the same or similar root causes. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
2. The permittee shall conduct an event-specific investigation into each flaring incident that results in sulfur dioxide or volatile organic compound emissions greater than 500 pounds from FGFLARES-S1 in any 24-hour period. The investigation shall be performed in accordance with the requirements outlined in SC III.10. The permittee may rely on prior investigation reports for events that have the same or similar root causes.<sup>3</sup> **(R336.1201(3))**
3. The permittee shall maintain FGFLARES-S1 in good working order and in a manner consistent with good pollution control practices for minimizing emissions including during periods of startup, shutdown, and malfunction. Good air pollution control practice for FGFLARES-S1 shall include, at a minimum, development, implementation, and operation in accordance with an approved Sulfur Shedding Plan to minimize or prevent excess sulfur dioxide emissions from the Sulfur Recovery Units, Tail Gas Treating Units ("TGTUs"), and

associated amine system. The Sulfur Shedding Plan shall have as a goal the elimination of flaring incidents in excess of 500 pounds of sulfur dioxide in any 24-hour period through the following. **(R 336.1205, 40 CFR 60.11(d), Consent Order 01-40119)**

- a) Define maintenance and operation practices for the new Sulfur Recovery Plants, the Tail Gas Treating Units ("TGTUs"), and amine system, and associated equipment in conjunction with this project. The plan should also evaluate and address any upstream process unit that has a direct impact on the operation and maintenance of the new Sulfur Recovery Plants, TGTUs, and Amine Systems.
  - b) Define good air pollution control practices to minimize the duration and amount of excess sulfur dioxide emissions from flaring events associated with the Sulfur Recovery Plants, TGTUs, and Amine Systems. The good pollution control practices shall include but not be limited to procedures to reduce excess sulfur dioxide emissions from a flaring incident through rate reduction or even shutdown of applicable process units associated with the flaring event. These practices should also entail operating measures and procedures to divert material being flared to other Sulfur Recovery Plants at the refinery.
  - c) Define measures to ensure continuous operation of the Sulfur Recovery Plants and Amine Systems between scheduled maintenance turnarounds. The measures shall include, but not be limited to, sulfur shedding procedures, adequate equipment redundancy, new startup and shutdown procedures, emergency procedures and schedules to coordinate maintenance turnarounds of the Sulfur Recovery Plants, TGTUs, and any supplemental control device to coincide with scheduled turnarounds of major upstream process units.
4. The permittee shall review and revise the Sulfur Shedding Plan on at least an annual basis to ensure it remains accurate. **(40 CFR 60.11(d), U.S. EPA Consent Order 01-40119)**
  5. The permittee shall conduct an event-specific investigation into each event that resulted in flaring more than 500,000 standard cubic feet of material in FGFLARES-S1 in any 24-hour period. The permitted pilot and sweep gas routed to the flares shall be excluded from the 500,000 standard cubic feet threshold. The investigation shall be performed in accordance with the requirements outlined in Special Condition III.9. The permittee may rely on prior investigation reports for events that have the same or similar root causes. **(R 336.1205, R 336.2802, 40 CFR 52.21)**
  6. The permittee shall establish a tracking system for flaring incidents that result in emissions greater than 100 pounds but fewer than 500 pounds of VOC from FGFLARES-S1 in any 24-hour period. The permittee will take action to minimize the likelihood of recurrence of such incidents. After 28 instances of flaring events between 100 and 499 pounds of VOC within a consecutive twelve month period, permittee shall conduct an event-specific investigation into all such instances for the next six month period, at which point a new 12-month period for purposes of counting instances shall begin.<sup>3</sup> **(R 336.1201(3))**
  7. The permittee shall prepare and follow a Flare Waste Gas Minimization Plan for FGFLARES-S1. The plan shall be designed and implemented to reduce or eliminate flaring events and shall include, at a minimum, the following elements. **(R 336.1205, R 336.2802, 40 CFR 52.21)**
    - a) A description and technical information for each flare that includes:
      - i. Detailed process flow diagram accurately depicting all pipelines, process units, flare gas recovery systems, surge drums and knock-out pots, compressors, and other equipment that vent to each flare. At a minimum, this shall include full and accurate as built dimensions and design capacities of the flare gas recovery systems, compressors, surge drums and knock-out pots.
      - ii. Description of equipment, processes and procedures installed or implemented within the last five years to reduce flaring. The description shall specify the year of installation.
      - iii. Description of any equipment, processes, or procedures the owner or operator plans to install or implement to eliminate or reduce flaring. The description shall specify the scheduled year of installation or implementation.
      - iv. Description and evaluation of prevention measures to address the following:
        1. Flaring that has occurred or reasonably may be expected to occur during planned major maintenance activities, including startup and shutdown. The evaluation shall include a review of flaring that has occurred during these activities in the past five years and shall consider the feasibility of performing these activities without flaring.
        2. Flaring that may reasonably be expected to occur due to issues of gas quantity and quality. The evaluation shall include an audit of the storage capacity available for excess vent gases, the scrubbing capacity available for vent gases including any limitations associated with scrubbing the

vent gases for use as a fuel, and shall consider the feasibility of reducing flaring through the recovery, treatment, and use of the gas or other means.

3. Flaring caused by the recent failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. The evaluation shall consider the adequacy of existing maintenance schedules and protocols for such equipment. For purposes of this section, a failure is recurrent if it occurs more than twice in any five year period as a result of the same causes as identified in the event-specific investigations.
  - b) A program of corrective action for malfunctioning process, air pollution control, and monitoring equipment related to the performance of FGFLARES-S1.
  - c) Procedures for conducting event-specific investigations as required by SC III.1 and SC III.5.
  - d) A determination of the appropriate steam to hydrocarbon ratio for each material for each flare, the basis for the ratios, and methods for estimating emissions from each flare, including when the steam to hydrocarbon ratios are not maintained at the appropriate level.
8. The permittee shall review and revise the Flare Waste Gas Minimization Plan on at least an annual basis to ensure it remains current and complies with the provisions outlined in SC III.7 **(R 336.1205, R 336.2802, 40 CFR 52.21)**
9. At a minimum, the permittee shall include all of the following specific information in the event-specific investigations for the reportable flaring events (i.e. greater than 500 pounds SO<sub>2</sub> or 500,000 scf of gas). **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
  - a) The date and time that the flaring event started and ended.
  - b) The total quantity of gas flared during each event.
  - c) An estimate of the quantity of sulfur dioxide and VOC that was emitted and the calculations used to determine the quantities.
  - d) The steps taken to limit the duration of the flaring event or the quantity of emissions associated with the event.
  - e) A detailed analysis that sets forth the root cause and all significant contributing causes of the flaring event to the extent determinable.
  - f) An analysis of the measures, if any, available to reduce the likelihood of a recurrence of a flaring event resulting from the same root cause or significant contributing causes in the future.
  - g) A demonstration that the actions taken during the flaring event are consistent with the procedures specified in the Flare Waste Gas Minimization and Sulfur Shedding plans, as appropriate. If the actions taken during the flaring event are not consistent with the procedures specified in the appropriate plan, then the permittee must record the actions taken for that event and identify the reasons why the plan was not followed.
  - h) For any flaring event that lasts longer than 24 hours, each calendar day shall constitute a separate event.
10. At a minimum, the permittee shall include all of the following specific information in the event-specific investigations for the reportable flaring events (i.e. greater than 500 pounds SO<sub>2</sub> or VOC, or more than 500,000 scf of gas)<sup>3</sup> **(R 336.1201(3))**
  - a) The date and time that the flaring event started and ended.
  - b) The total quantity of gas flared during each event.
  - c) An estimate of the quantity of sulfur dioxide and VOC that was emitted and the calculations used to determine the quantities.
  - d) The steps taken to limit the duration of the flaring event or the quantity of emissions associated with the event.
  - e) A detailed analysis that sets forth the root cause and all significant contributing causes of the flaring event to the extent determinable.
  - f) An analysis of the measures, if any, available to reduce the likelihood of a recurrence of a flaring event resulting from the same root cause or significant contributing causes in the future.
  - g) A demonstration that the actions taken during the flaring event are consistent with the procedures specified in the Flare Waste Gas Minimization and Sulfur Shedding plans, as appropriate. If the actions taken during the flaring event are not consistent with the procedures specified in the appropriate plan, then the permittee must record the actions taken for that event and identify the reasons why the plan was not followed.
  - h) For any flaring event that lasts longer than 24 hours, each calendar day shall constitute a separate event.

11. The permittee shall complete each event-specific investigation report within 45 calendar days after the reportable flaring incident. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
12. The permittee shall operate each flare in FGFLARES-S1 in a satisfactory manner at all times that emissions may be vented to it, including maintaining an adequate steam to hydrocarbon ratio in each flare and a minimum heat content of 300 BTU/scf in the vent gas to each flare. **(R 336.1910, 40 CFR 60.18)**
13. The permittee shall comply with the following requirements for corrective action procedures as they relate to reportable flaring events (events resulting in sulfur dioxide emissions greater than 500 pounds in any 24-hour period) 40 CFR 60.11d: **(R 336.1910, 40 CFR Part 60, Subpart A)**
  - a) The permittee shall take reasonable steps to correct conditions that have caused or contributed to such events, and to minimize such incidents. The permittee shall evaluate whether reportable flaring events are due to malfunctions.
  - b) In response to any reportable flaring events, the permittee shall take, as expeditiously as practicable, such interim and/or long term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the root cause and all contributing causes of the reportable flaring event.
  - c) As it relates to hydrocarbon flaring incidents, the purpose of these requirements is to ensure the flare system is operated in a manner consistent with good air pollution control practices, as specified under 40 CFR 60.11(d), and to ensure that hydrocarbon flaring resulting from startup, shutdown, malfunction, or process upset is not subject to the emission limitations, monitoring, or other requirements for refinery fuel gas found in 40 CFR 60.100–60.109.<sup>3</sup>

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

1. The permittee shall maintain the ignition sensor and/or pilot flame for FGFLARES-S1. **(40 CFR Part 60, Subpart A)**
2. The permittee shall equip and maintain each flare in FGFLARES-S1 with a pilot flame. **(R 336.1910, 40 CFR Part 60 Subpart A, 40 CFR 63.11(b)(5))**
3. Each flare in FGFLARES-S1 shall be designed and installed so that it complies with the requirements of 40 CFR Part 60, Subpart A. **(R 336.1910, 40 CFR 60.18(c))**

#### **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 monitor and keep records of the concentration of hydrogen sulfide in the refinery fuel gas burned in FGFLARES-S1 in accordance with the Federal Standards of Performance as specified in 40 CFR Part 60, Subpart J and where applicable Ja, in a manner and with instrumentation acceptable to the Division. 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 H<sub>2</sub>S in the fuel gas being burned. **(40 CFR 60.105(a)(4), 40 CFR 60.107a(a)(2))**
2. The permittee shall keep records of emissions and operating information for each flare in FGFLARES-S1 to comply with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and J. **(40 CFR Part 60, Subparts A and J)**
3. The permittee shall monitor emissions and operating and maintenance information for each flare in FGFLARES-S1 in accordance with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and CC. **(40 CFR Part 63, Subparts A and CC)**

4. The permittee shall keep records of emission information and operating and maintenance information for each flare in FGFLARES-S1 to comply with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and CC. The permittee shall keep all source emissions and operating and maintenance information on file at the facility for a period of at least five years and make them available to the Department upon request. **(40 CFR Part 63, Subparts A and CC)**
5. The permittee shall track and ensure timely closure of the corrective actions, if any, identified to minimize the likelihood of a recurrence of the reportable flaring events. The permittee shall report every six months on the status of the yet-to-be-completed corrective actions related to the reportable flaring incidents. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
6. The permittee shall keep, in a satisfactory manner, a record of the current and prior versions of the Sulfur Shedding Plan and the Flare Waste Gas Minimization Plan for FGFLARES-S1, as required by SC III.6 and SC III.10. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
7. The permittee shall monitor all flares for visible emissions using color video monitors with date and time stamp. **(R 336.1205)**
8. The permittee shall install, maintain, and continuously operate, for EU-CRUDEFLARE, EU-UNIFFLARE, and EU-ALKYFLARE, continuous flow measuring devices to continuously monitor and record the flow of gas to each of these flares. The flow measuring devices shall be sensitive to rapid flow changes and have the capability of reporting both instantaneous velocity and totalized flow. Materials exposed to the flare gas shall be corrosion resistant. The flow measuring devices shall (i) feature automated daily calibrations at low and high ranges, and (ii) shall signal alarms if the calibration error or drift is exceeded, provided that the monitor is equipped with such capability. The volumetric flow measuring devices may consist of one or more flow meters, and, as combined, shall meet the following specifications. **(R 336.1205, R 335.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**
  - a) Velocity Range: 0.1-250 ft/sec.
  - b) Repeatability:  $\pm 1\%$  of reading over the velocity range.
  - c) Accuracy:  $\pm 20\%$  of reading over the velocity range of 0.1-1 ft/s and  $\pm 5\%$  of reading over the velocity range of 1-250 ft/s.
  - d) Installation: Applicable AGA, ANSI, API, or equivalent standard.
  - e) Flow Rate Determination: Must be corrected to one atmosphere pressure and 68 °F and recorded as one-minute averages.
  - f) Data Records: Measured continuously and recorded over one-minute averages. The instrument shall be capable of storing or transferring all data for later retrieval.
  - g) QA/QC: An annual verification of accuracy is required and shall be specified by the manufacturer.
9. The permittee shall install, maintain, and continuously operate devices to continuously monitor and record the flow of steam to each flare in FGFLARES-S1, the VOC composition of the vent gas stream to each flare, and the steam to hydrocarbon ratio in each flare. The monitoring devices shall meet the following specifications. **(R 336.1205, R 335.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**
  - a) Turndown Ratio: 25:1.
  - b) Repeatability:  $\pm 1\%$  of reading over the range of the instrument.
  - c) Accuracy:  $\pm 1\%$  from 100% to 15 % of span,  $\pm 2\%$  from 15 % of span to 6 % of span,  $\pm 3\%$  from 6 % of span to 4% of span.
  - d) Installation: Applicable AGA, ANSI, API, or equivalent standard.
  - e) Flow Rate Determination: Must be corrected to one atmosphere pressure and 68 °F and recorded as one-minute averages.
  - f) Data Records: Measured continuously and recorded over one-minute averages. The data acquisition system shall be capable of storing and transferring all data for later retrieval.
  - g) QA/QC: An annual verification of accuracy is required and shall be specified by the manufacturer.
10. All data as generated by the flare and steam flow measuring devices shall be continuously recorded. The recording system(s) must have the capability to generate one-minute average data from that which is continuously generated by the flow measuring devices. **(R 336.1205, R 335.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**

11. The permittee shall maintain the flare and steam flow measuring devices and steam to hydrocarbon control system in good operating condition at all times when the flare that it serves is operational, except when out of service due to:
  - a) Breakdowns and unplanned system maintenance of each monitoring device shall not exceed 96 hours, cumulatively, per quarter for each reporting period.
  - b) Planned maintenance, which shall not exceed 14 days per 18 month period, provided that a written notification detailing the reason for maintenance and methods that will be used during the maintenance period to determine emissions associated with flare events is provided to the AQD District Supervisor prior to, or within 24 hours of, removal of the monitoring system from service. **(R 336.1205, R 335.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**
12. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record the TRS concentration in the vent gas to each flare in FGFLARES-S1 on a continuous basis. **(R 336.1205, R 335.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**
13. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a gas concentration measurement system to monitor and record the composition of the vent gas to each flare in FGFLARES-S1 on a continuous basis. **(R 336.1201(3), 40 CFR 63.670(j))**
  - a) The gas concentration measurement system shall be maintained to be accurate within 5% of full scale.
  - b) The minimum sampling frequency shall be one sample every 15 minutes.
14. The permittee shall calculate and keep records of the annual emissions of PM, PM10, NO<sub>x</sub>, VOC, CO, SO<sub>2</sub>, sulfuric acid mist (H<sub>2</sub>SO<sub>4</sub>), hydrogen sulfide (H<sub>2</sub>S), and Total Reduced Sulfur (TRS) from the Detroit heavy oil upgrade project (Detroit HOUP), in tons per year on a calendar year basis. Records shall be kept in the format described in Appendix 4F-S1, or an alternate format acceptable to the AQD Permit Section Supervisor. Calculations and record keeping shall begin the month in which the Detroit HOUP begins normal operations and shall continue for 10 years. **(R 336.2818, 40 CFR 52.21(r)(6)(iii), 40 CFR Part 51, Appendix S)**
15. The permittee shall calculate, keep records of, and annually report to the AQD, the annual emissions of PM, PM10, NO<sub>x</sub>, VOC, CO, SO<sub>2</sub>, sulfuric acid mist (H<sub>2</sub>SO<sub>4</sub>), hydrogen sulfide (H<sub>2</sub>S), and Total Reduced Sulfur (TRS) from the Detroit heavy oil upgrade project (Detroit HOUP), in tons per year on a calendar year basis. Calculations shall be based on the best available and representative data. Supporting documentation shall be submitted with the emissions report and shall be generally consistent with the format and specificity of Exhibit 7 of the Sierra Club Agreement. Records shall be kept in the format described in Appendix 4F-S1, or an alternate format acceptable to the AQD Permit Section Supervisor. Calculations and record keeping shall begin the month in which the Detroit HOUP begins normal operations and shall continue for 10 years. **(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 FGFLARES-S1 to the AQD District Supervisor in acceptable format within 30 days following the end of the quarter in which the data were collected. **(R 336.1201(3), 40 CFR 60.7)**
2. The permittee shall submit a semiannual summary of reportable flaring incidents to the AQD District Supervisor. Each report shall include, as a minimum, the number of reportable flaring incidents that occurred during the period, the amount of excess emissions during each reportable flaring incident, and the status of all yet-to-be-completed corrective actions from reportable flaring incidents. The permittee shall submit each report in an acceptable format within 30 days following the end of the semiannual period that the report covers. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
3. The permittee shall submit a copy of the Sulfur Shedding and Waste Gas Minimization Plans to the AQD District Supervisor for review at least 60 days before commencing operation of equipment associated with the heavy oil upgrade project. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**

4. The permittee shall submit to the AQD District Supervisor an operation and maintenance (O&M) plan and a Waste Gas Minimization Plan for each flare in FGFLARES-S1 at least 120 days before commencing operation of EU70-COKER. At a minimum the O&M plan shall include an inspection schedule and description of inspection procedures for the flare components, including the flare tips and pilots. **(40 CFR Part 63, Subparts A and CC)**
5. The permittee shall submit a report to the AQD Permit Section Supervisor within 60 days following the end of each reporting year if both the following occur for any of these pollutants:
  - a) The calendar year actual emission from the Detroit HOUP exceed the baseline actual emissions (BAE) by a significant amount, and
  - b) The calendar year actual emissions from the Detroit HOUP differ from the pre-construction projection for the emission units included in the Hybrid Applicability Test used for the Detroit HOUP. The pre-construction projection is the sum of the projected actual emissions from each emission unit using the actual-to-projected actual emissions test as part of the Hybrid Applicability Test, and the potential emissions from each emission unit using the potential-to-emit test as part of the Hybrid Applicability Test.

The report shall contain the name, address, and telephone number of the facility (major stationary source); the annual emissions as calculated pursuant to this special condition, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection). **(R 336.1201(3), R 336.2818, 40 CFR 52.21(r)(6)(v))**

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

NA

#### **IX. OTHER REQUIREMENT(S)**

1. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and Subpart CC, as they apply to FGFLARES-S1. **(40 CFR Part 63, Subparts A and CC)**
2. The permittee shall comply with all provision of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A, J, and where applicable Ja, as they apply to FGFLARES-S1. **(40 CFR Part 60 Subparts A and J/Ja)**

#### **Footnotes:**

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

<sup>3</sup> This condition is included at the request of the permittee.