



**AIR EMISSION PERMIT NO. 16300003- 003  
IS ISSUED TO**

Marathon Ashland Petroleum LLC

**Marathon Ashland Petroleum LLC**  
100 W 3rd Street  
St. Paul Park, Washington County, MN 55071

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date
Administrative Amendment	12/01/99

This permit authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

**Permit Type:** Federal ; Part 70

**Issue Date:** October 26, 1999

**Expiration:** October 26, 2004

All Title I Conditions do not expire.

"Title I Condition: SIP for SO<sub>2</sub> NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)" or "Title I Condition: MN State Implementation Plan (SIP); 40 CFR § 50.5" are required to go through the federal State Implementation Plan approval process before the change becomes effective.

A handwritten signature in black ink, appearing to read "Richard J. Sandberg".

Richard J. Sandberg, Manager  
Major Facilities Section  
Metro District

for Karen A. Studders  
Commissioner  
Minnesota Pollution Control Agency

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility

What to do	Why to do it
<p>Modeling: Any increase in SO2 emissions beyond modeled conditions associated with the emission units in the SIP shall be modeled at the new predicted SO2 emission rates to determine the impact on the NAAQS.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>CHANGES NOT REQUIRING A MODIFICATION FOR THE SIP: The Owner or Operator shall make changes to the facility without obtaining a modification as long as the change does not do or result in any of the following:</p> <p>A. an exceedance of the limitations associated with the emission units in the SIP; or B. a physical change of the equipment that affects the stack parameters described in Appendix B, unless the physical change is being to an emission unit allowed to burn refinery fuel oil before the physical change, and the emission unit will not burn any type of fuel oil after the physical change (the fuel oil supply line shall be disconnected immediately); or C. an increase of a maximum potential sulfur dioxide emission rate of 2.28 pounds per hour at any new emission unit.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>CHANGES REQUIRING A MODIFICATION FOR THE SIP: A. any modification to the design of the equipment that decreases the stack gas volumetric flow rate below that contained in Appendix B, unless the modification is being made to an emission unit allowed to burn refinery fuel oil before the modification, and the unit shall not burn any type of fuel oil after the physical change (the fuel oil supply line shall be disconnected immediately); B. any modification to the design of the equipment that decreases the stack gas exit temperature below that contained in Appendix B, unless the modification is being made to an emission unit allowed to burn refinery fuel oil before the physical change (the fuel oil supply line shall be disconnected immediately);</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) CONTINUED</p>
<p>C. any modification to the design of the equipment that reduces the stack height below that contained in Appendix B, unless the modification is being made to an emission unit allowed to burn refinery fuel oil before the modification, and the unit shall not burn any type of fuel oil after the physical change ( the fuel oil supply line shall be disconnected immediately); D. any modification to the design of the equipment that increases the stack exit diameter above that contained in Appendix B, unless the modification is being made to an emission unit allowed to burn refinery fuel before the modification, and the unit shall not burn any type of fuel oil after the physical change ( the fuel oil supply line shall be disconnected immediately); E. any construction or modification of structures that increase the effective structural dimensions as they are used in the building wake effects algorithm in the ISC Air Dispersion Model, or its successor.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>General Operating and Maintenance Requirements for the SIP: The Owner or operator shall operate and maintain the process equipment described in Appendix B according to the parameters set forth in Appendix B. The parameters were used in the computer modeling performed to demonstrate that the SO2 maintenance area will attain compliance with the SO2 NAAQS.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Steam-Air Decoking Restrictions: The owner or operator shall not steam-air decoke more than one of the emission units listed at any one time EU002, EU003, EU005, EU006, EU007, EU008, EU009, EU010, EU011, EU012, EU013, EU014, EU015, EU016, EU017, EU018, EU022, EU023, EU024, EU025, EU026, EU027, EU028 and EU029 at the same time. THIS REQUIREMENT WILL BE EFFECTIVE THE DATE EPA APPROVES THE REVISIONS INTO THE SIP.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Record keeping for Steam-Air Decoking Operations: Record the dates and time periods of each steam-air decoke event for each Emission Unit decoked.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Retain all records at the stationary source for a period of five (5) years from the date of the required monitoring, sample, measurement, or report that corresponds with a State Implementation Plan Title I Condition.</p>	<p>Title I Condition: Recordkeeping for the State Implementation Plan (SIP) for SO2 Requirements</p>
<p>Continuous Fence Around the Boundaries of the Main Refinery Complex Property: THIS REQUIREMENT WILL BECOME EFFECTIVE UPON THE DATE EPA APPROVES THIS REVISION INTO THE SIP; the owner or operator shall have enclosed the boundaries of the main refinery complex property with a continuous fence, excluding access points, and shall have installed gates at each access point. The owner or operator shall thereafter keep the gates closed unless access is being controlled or authorized persons are entering or leaving the property through an access point.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>Inspection, Maintenance, and Repair of the Fencing: THIS REQUIREMENT WILL BECOME EFFECTIVE UPON THE DATE EPA APPROVES THIS REVISION INTO THE SIP; The owner or operator shall inspect the fencing and gates once each quarter and identify any necessary maintenance. If the owner or operator determines the need for repair or maintenance of the fencing and gates, then all repairs and maintenance shall be completed as soon as reasonably possible, but no later than 30 days after the date of discovery. If the MPCA notifies the owner or operator of the need for repair or maintenance, then the owner or operator shall complete such repair or maintenance as soon as reasonably possible, but no later than 30 days after the owner or operator receives such notification.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Record of Inspection and Maintenance of the Fencing and the Gates: The owner or operator shall retain records of each inspection and of each maintenance and repair to the fencing and the gates.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

**Subject Item:** GP 002 Refinery Heaters 11-14 & 22-25

- Associated Items:** EU 011 Naptha Unifiner Heater 5-3-B-1,2&3  
 EU 012 Platformer Reactor Charge Heater 5-3-B-4  
 EU 013 Platformer Interheater No. 1 5-3-B-7  
 EU 014 Platformer Interheater No. 2 5-3-B-8  
 EU 022 Guard Case Reactor Heater 5-36-B-1  
 EU 023 Reformer Charge & No. 1 Interheaters 5-36-B-2,3,4  
 EU 024 No. 3 Interheater 5-36-B-6E  
 EU 025 No. 2 Interheater 5-36-B-6W

What to do	Why to do it
Fuel Usage: less than or equal to 2155 million cubic feet/year using 12-month Rolling Sum of refinery gas only.	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Record keeping: Calculate and record the 12 month rolling sum of cubic feet of fuel used by the 20th of each month	Title I Condition: to remain non-major under 40 CFR Section 52.2; Minn. R. 7007.0800, subp.5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

**Subject Item:** GP 004 H2S CEMS assoc. w/ all process heaters

- Associated Items:**
- EU 001 Boiler No. 5 5-16-B-5
  - EU 002 FCC Charge Heater 5-8-B-1
  - EU 003 Alky Isostripper Htr 5-28-B-1
  - EU 005 No. 2 Crude Vacuum Heater 5-5-B-1
  - EU 006 No. 2 Crude Charge Heater 5-2-B-3
  - EU 007 No. 1 Crude Vacuum Tower Heater 5-1-B-5
  - EU 008 Preflash Heaters 5-1-B-6
  - EU 009 No. 1 Crude Charge Htr 5-1-B-7
  - EU 010 Distillate Unifiner Heater 5-29-B-1&2
  - EU 011 Naptha Unifiner Heater 5-3-B-1,2&3
  - EU 012 Platformer Reactor Charge Heater 5-3-B-4
  - EU 013 Platformer Interheater No. 1 5-3-B-7
  - EU 014 Platformer Interheater No. 2 5-3-B-8
  - EU 015 Isom Desulf Charge Heater 5-34-B-1
  - EU 016 Hot Oil Heater 5-34-B-2
  - EU 017 HDH Charge heater 5-32-B-1
  - EU 018 SGP Dehexanizer Reboiler 5-10-B-1
  - EU 020 No. 4 Boiler 5-16-B-4
  - EU 021 No. 6 Boiler 5-16-B-6
  - EU 022 Guard Case Reactor Heater 5-36-B-1
  - EU 023 Reformer Charge & No. 1 Interheaters 5-36-B-2,3,4
  - EU 024 No. 3 Interheater 5-36-B-6E
  - EU 025 No. 2 Interheater 5-36-B-6W
  - EU 026 DDS Reactor Charge Heater 5-37-B-1
  - EU 027 DDS Product Stripper Reboiler 5-37-B-2
  - EU 028 Hydrogen Plant Heaters 5-38-B-1
  - EU 029 Hydrogen Plant Heaters 5-38-B-2

What to do	Why to do it
<p>CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.</p>	<p>Title I Condition: SIP for SO<sub>2</sub>NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. pt. 7007.0800, subp. 2; Minn. R. 7017.1090, subp. 6; 40 CFR Section 60.13 (e), subp. 6</p>
<p>Acceptable monitor downtime includes reasonable periods due to the following causes:</p> <ul style="list-style-type: none"> <li>A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative;</li> <li>B. sudden and not reasonably preventable breakdowns;</li> <li>C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or</li> <li>D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</li> </ul>	<p>Title I Condition: SIP for SO<sub>2</sub>NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. pt. 7007.0800, subp. 2; Minn. R. 7017.1090, subp. 6; 40 CFR Section 60.13 (e), subp. 6 CONTINUED</p>
<p>CEMS Emissions Monitoring: The owner or operator shall monitor SO<sub>2</sub> emissions using a H<sub>2</sub>S CEMS in conjunction with fuel flow monitors.</p>	<p>Title I Condition: SIP for SO<sub>2</sub>NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR Section 60, subpart J; Minn. R. 7017.1006</p>
<p>Hydrogen Sulfide Content in the Refinery Gas: calibrate, operate and maintain a CEMS to determine the hydrogen sulfide content of the refinery gas to the emission units. The CEMS shall provide a continuous record of hydrogen sulfide content in ppm.</p>	<p>Title I Condition: SIP for SO<sub>2</sub>NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. 7017.1006</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

**Subject Item:** GP 005 Hydrogen Plant Heaters

**Associated Items:** CE 002 Ammonia Injection

CE 003 Catalytic Reduction

EU 028 Hydrogen Plant Heaters 5-38-B-1

EU 029 Hydrogen Plant Heaters 5-38-B-2

MR 001 H2S Monitor

MR 045 Fuel Flow Meter (gas)

MR 046 Fuel Flow Meter (gas)

MR 048 H2S Monitor (PSA)

SV 023

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Nitrogen Oxides: less than or equal to 1.37E-2 lbs/million Btu heat input using 24-hour Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Sulfur Dioxide: less than or equal to 3.48 lbs/hour using 3-hour Rolling Average	Title I Condition: MN State Implementation Plan (SIP), 40 CFR Section 50.5; Minn. R. 7009.0080 (most stringent, meets limits set by Minn. r. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: MN State Implementation Plan (SIP), 40 CFR Section 50.5; Minn. R. 7009.0080 (most stringent, meets limits set by: Minn. R. 7011.1410, subp. 3, item A)
Volatile Organic Compounds: less than 0.28 lbs/hour using 365-day Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21; 40 CFR PT. 51 Appendix S, or 40 CFR Section 52.24
Volatile Organic Compounds: less than 2.8E-3 lbs/million Btu heat input using 365-day Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21; 40 CFR pt. 51 Appendix S, or 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR Section 60, subp. J
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>C. CEMS REQUIREMENTS</b>	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate and the H2S CEMS to measure sulfur dioxide emissions from SV 023.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>Acceptable monitor downtime includes reasonable periods due to the following causes:</p> <p>A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative;</p> <p>B. sudden and not reasonably preventable breakdowns;</p> <p>C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or</p> <p>D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>
<p>CMS Quality Assurance/Quality Control (QA/QC): The owner or operator shall develop and follow a written QA/QC plan which cover the CMS. The plan shall be on-site, available for inspection within 30 days after permit issuance and updated as necessary. At a minimum the CMS shall be calibrated annually.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. 7007.0800, subp. 2</p>
<p> </p>	<p> </p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

**Subject Item:** GP 006 Fuel combustion devices using refinery oil

- Associated Items:**
- EU 002 FCC Charge Heater 5-8-B-1
  - EU 003 Alky Isostripper Htr 5-28-B-1
  - EU 005 No. 2 Crude Vacuum Heater 5-5-B-1
  - EU 006 No. 2 Crude Charge Heater 5-2-B-3
  - EU 009 No. 1 Crude Charge Htr 5-1-B-7
  - EU 015 Isom Desulf Charge Heater 5-34-B-1
  - EU 016 Hot Oil Heater 5-34-B-2
  - EU 017 HDH Charge heater 5-32-B-1
  - EU 018 SGP Dehexanizer Reboiler 5-10-B-1
  - EU 020 No. 4 Boiler 5-16-B-4
  - EU 021 No. 6 Boiler 5-16-B-6

What to do	Why to do it
Fuel Sulfur Content and Heating Value: The Company shall demonstrate compliance with the sulfur dioxide emission limitations for the fuel burning units by obtaining the sulfur content and heating value of the refinery oil used in the emission units at the facility by sampling and analyzing the fuel.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Oil Sampling and Analysis: The Company shall collect one sample of fuel at tank side tank within 24 hours after receiving a transfer of fuel into the fuel supply tank. The sampling method shall be in accordance with a method approved by ASTM.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Oil Sampling and Analysis: The Company shall analyze the fuel oil sample to determine the sulfur content of the fuel oil. The analysis shall conform to the most current version of a method approved by ASTM.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Oil Sampling and Analysis: The Company shall analyze quarterly the fuel oil sample to determine the heating value of the fuel oil. The analysis shall conform to a method approved by ASTM.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: GP 007 FCC Charge and Alky Isostripper Htrs

Associated Items: EU 002 FCC Charge Heater 5-8-B-1

EU 003 Alky Isostripper Htr 5-28-B-1

MR 001 H2S Monitor

MR 009 Fuel Flow Meter(gas)

MR 011 Fuel Flow Meter (gas)

SV 002

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 64.08 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) ( most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.9 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP);
-hour : to this	
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination (1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: $W > [1.88*(a)*(x) + 2.00*(b)*(y)] / [x+y]$ where: w = the emission limit (0.9 lbs SO2/MMBtu) 1.88 = MW(SO2)/MW(H2S) = 64.06/34.08 a = fraction of H2S in refinery gas (lbs/Btu) = (0.0898)*(ppmv)/(HHV-rg) where: 0.0898 = (1lb-mole H2S)*(34.08 lb H2S/lb-mole H2S)*(1 atm) (10 <sup>6</sup> lb-mole rg)*(520 R)*(0.7302 ft <sup>3</sup> -atm/lb-mole R)	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (CONTINUED)
ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft <sup>3</sup> @ 60 degrees F) x = flow rate of refinery gas (MMBtu) = (Q)*(HHV-rg)*(60) where: Q = volumetric flow rate of refinery gas (ft <sup>3</sup> /min @ 60 degrees F) HHV-rg = high heating value for refinery gas (Btu/ft <sup>3</sup> @ 60 degrees F) 60 = minutes/hour 2.00 = MW (SO2)/MW(S) = 64.06/32.06 b = fraction of S in refinery oil (bs/Btu) = (ppmv)*(density)/HHV-ro	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degress F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degress F) y = flow rate of refinery oil (MMBtuh) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degress F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degress F) 60 = 60 minutes/hour</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) CONTINUED</p>
<p>Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation (SIP)</p>
<p><b>C. CMS REQUIREMENTS</b></p>	<p>hdr</p>
<p>Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate and the H2S CEMS to measure sulfur dioxide emissions from SV 002.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1</p>
<p>Acceptable monitor downtime includes reasonable periods due to the following causes:  A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance shedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC  
 Permit Number: 16300003 - 003

- Subject Item:** GP 017 Storage Tank Heaters (applies to each)
- Associated Items:**
- EU 030 Asphalt Strg Tank Htr (OOS) 5-999-B-50
  - EU 031 5-999-B-62, A, B & C
  - EU 032 Asphalt Strg Tank Heater 5-999-B-75, A & B
  - EU 033 Asphalt Strg Tank Heater 5-999-B-76, A & B
  - EU 034 Reduced Crude Strg Tank Htr 5-999-B-82
  - EU 035 Asphalt Strg Tank Heater 5-999-B-83
  - EU 036 Distillate Strg Tank Heater 5-999-B-116
  - EU 037 Slurry Strg Tank Heater 5-999-B-118
  - EU 038 Asphalt Strg Tank Heater 5-999-B-120, A, B & C
  - EU 039 Asphalt Strg Tank Heater 5-999-B-127, A, B, & C
  - EU 040 Asphalt Strg Tank Heater #1 5-999-B-129a
  - EU 041 Asphalt Strg Tank Heater #2 5-999-B-129b
  - EU 042 Fuel Oil Strg Tank Heater 5-999-B-131
  - EU 043 Asphalt Strg Tank Heater 5-999-B-132, A, B, & C
  - EU 044 Asphalt Strg Tank Heater 5-999-B-133 A, B, & C
  - EU 045 Asphalt Strg Tank Heater 5-999-B-143 A, B, & C
  - EU 046 Asphalt Strg Tank Heater 5-999-B-147
  - EU 047 Asphalt Strg Tank Heater #1 5-999-B-148a
  - EU 048 Asphalt Strg Tank Heater #1 5-999-B-148b
  - EU 049 Asphalt Strg Tank Heater 5-999-B-149
  - EU 050 Asphalt Strg Tank Heater 5-999-B-150
  - EU 051 Asphalt Strg Tank Heater 5-999-B-152
  - EU 052 Asphalt Strg tank Heater 5-999-B-156
  - EU 053 Hot Oil Tracing "B" 5-999-B-Econotherm
  - EU 054 Hot Oil Tracing "D" 5-999-B-Hyway
  - EU 055 Hot Oil Tracing "C" 5-999-B-Econotherm

What to do	Why to do it
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn propane and or/ natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 001 Boiler No. 5 5-16-B-5

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 008 Fuel Flow Meter (gas)

SV 001

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Sulfur Dioxide: less than or equal to 1.08 lbs/hour using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets limits set by: Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and /or natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR Section 50 and MN State Implementation Plan (SIP)
<b>C. CMS REQUIREMENTS</b>	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that records the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 001.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes:  A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 004 FCC Regenerator 5-8-F-5

Associated Items: CE 001 Centrifugal Collector - Medium Efficiency

MR 002 Opacity COMS

MR 003 SO2 CEMS

SV 003

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 793.65 lbs/hour using 3-hour Rolling Average The Company shall use CEMS to monitor the sulfur dioxide emissions in order to calculate pounds of sulfur dioxide per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
C. CEMS REQUIREMENTS	hdr
Sulfur Dioxide Emissions Monitoring: calibrate, operate and maintain SO2 Continuous Emissions Monitoring Systems (CEMS);	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn R. 7017.1006
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>Acceptable monitor downtime includes reasonable periods due to the following causes:</p> <ul style="list-style-type: none"><li>A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative;</li><li>B. sudden and not reasonably preventable breakdowns;</li><li>C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or</li><li>D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</li></ul>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 005 No. 2 Crude Vacuum Heater 5-5-B-1

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 013 Fuel Flow Meter (gas)

MR 014 Fuel Flow Meter(oil)

SV 004

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 48.60 lbs/hour using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2.)
Sulfur Dioxide: less than or equal to 0.90 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limit set by Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<p>Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination</p> <p>(1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and</p> <p>(2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation:</p> $W > [1.88*(a)*(x) + 2.00*(b)*(y)] / [x+y]$ <p>where:</p> <p>w = the emission limit (0.9 lbs SO2/MMBtu)</p> <p>1.88 = MW(SO2)/MW(H2S)</p> <p>= 64.06/34.08</p> <p>a = fraction of H2S in refinery gas (lbs/Btu)</p> <p>= (0.0898)*(ppmv)/(HHV-rg)</p> <p>where:</p> <p>0.0898 = (1lb-mole H2S)*(34.08 lb H2S/lb-mole H2S)*(1 atm)</p> <p>(10<sup>6</sup> lb-mole rg)*(520 R)*(0.7302 ft<sup>3</sup>-atm/lb-mole R)</p>	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<p>ppmv = parts per million by volume of H2S in refinery gas</p> <p>HHV-rg = high heating value for refinery gas (Btu/ft<sup>3</sup> @ 60 degrees F)</p> <p>x = flow rate of refinery gas (MMBtu)</p> <p>= (Q)*(HHV-rg)*(60)</p> <p>where:</p> <p>Q = volumetric flow rate of refinery gas (ft<sup>3</sup>/min @ 60 degrees F)</p> <p>HHV-rg = high heating value for refinery gas (Btu/ft<sup>3</sup> @ 60 degrees F)</p> <p>60 = minutes/hour</p> <p>2.00 = MW (SO2)/MW(S)</p> <p>= 64.06/32.06</p> <p>b = fraction of S in refinery oil (bs/Btu)</p> <p>= (ppmv)*(density)/HHV-ro)</p>	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtuh) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) CONTINUED</p>
<p>Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation (SIP)</p>
<p>C. CMS REQUIREMENTS</p>	<p>hdr</p>
<p>Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 004.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1</p>
<p>Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>
<p></p>	<p></p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC  
 Permit Number: 16300003 - 003

Subject Item: EU 006 No. 2 Crude Charge Heater 5-2-B-3

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters  
 GP 006 Fuel combustion devices using refinery oil  
 MR 001 H2S Monitor  
 MR 015 Fuel Flow Meter (gas)  
 MR 016 Fuel Flow Meter (oil)  
 MR 047 H2S Monitor (NG)  
 SV 005

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 34.0 lbs/hour using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, Item A)
Sulfur Dioxide: less than or equal to 0.2834 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Nitrogen Oxides: less than or equal to 0.14 lbs/million Btu heat input using 3-hour Average	Title I Condition; BACT PSD as defined in 40 CFR Section 52.21; Minn. R. 7007.3000.
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination (1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: $W > [1.88(a)(x) + 2.00(b)(y)] / [x+y]$ where; w = the emission limit (0.9 lbs SO2/MMBtu) $1.88 = MW(SO2)/MW(H2S)$ $= 64.06/34.08$ a = fraction of H2S in refinery gas (lbs/Btu) $= (0.0898)(ppmv)/(HHV-rg)$ where: $0.0898 = (1\text{-lb-mole H2S})(34.08 \text{ lb H2S/lb-mole H2S})(1 \text{ atm})$ $(10^6 \text{ lb-mole rg})(520 \text{ R})(0.7302 \text{ ft}^3\text{-atm/lb-mole R})$	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft <sup>3</sup> @ 60 degrees F) x = flow rate of refinery gas (MMBtu) $= (Q)(HHV-rg)(60)$ where; Q = volumetric flow rate of refinery gas (ft <sup>3</sup> /min @ 60 degrees F) HHV-rg = high heating value for refinery gas (Btu/ft <sup>3</sup> @ 60 degrees F) 60 = minutes/hour $2.00 = MW (SO2)/MW(S)$ $= 64.06/32.06$ b = fraction of S in refinery oil (bs/Btu) $= (ppmv)(\text{density})/HHV-ro$	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)  CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtuh) <math>y = (q) \cdot (HHV-ro) \cdot (60)</math> where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)  CONTINUED</p>
<p>Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>C. CMS REQUIREMENTS</p>	<p>hdr</p>
<p>Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 005.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr)</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1</p>
<p>Acceptable monitor downtime includes reasonable periods due to the following causes:  A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 007 No. 1 Crude Vauum Tower Heater 5-1-B-5

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 017 Fuel Flow Meter (gas)

MR 018 Reserved( no longer use oil)

SV 006

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.2 lbs/hour using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
B. OTHER LIMITS AND REQUIRMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, and/or natural gas only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 006.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes:	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative;	
B. sudden and not reasonably preventable breakdowns;	
C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance shedule which cannot reasonably be conducted when the emission unit is not operating; or	
D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 008 Preflash Heaters 5-1-B-6

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 019 Fuel Flow Meter (gas)

MR 020 Fuel Flow Meter (oil)

SV 050

SV 051

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Sulfur Dioxide: less than or equal to 0.89 lbs/hour using 3-hour Rolling Average per stack.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average per stack.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>C. CMS REQUIREMENTS</b>	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 050 and SV 051.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance shedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 009 No. 1 Crude Charge Htr 5-1-B-7

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters  
 GP 006 Fuel combustion devices using refinery oil  
 MR 001 H2S Monitor  
 MR 021 Fuel Flow Meter (gas)  
 MR 022 Fuel Flow Meter (oil)  
 SV 007

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 52.20 lbs/hour using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.90 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination (1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: $W > [1.88*(a)*(x) + 2.00*(b)*(y)] / [x+y]$ where: w = the emission limit (0.9 lbs SO2/MMBtu) $1.88 = MW(SO2)/MW(H2S)$ $= 64.06/34.08$ a = fraction of H2S in refinery gas (lbs/Btu) $= (0.0898)*(ppmv)/(HHV-rg)$ where: $0.0898 = (1\text{lb-mole H2S})*(34.08\text{ lb H2S/lb-mole H2S})*(1\text{ atm})$ $(10^6\text{ lb-mole rg})*(520\text{ R})*(0.7302\text{ ft}^3\text{-atm/lb-mole R})$	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft <sup>3</sup> @ 60 degrees F) x = flow rate of refinery gas (MMBtu) $= (Q)*(HHV-rg)*(60)$ where: Q = volumetric flow rate of refinery gas (ft <sup>3</sup> /min @ 60 degrees F) HHV-rg = high heating value for refinery gas (Btu/ft <sup>3</sup> @ 60 degrees F) 60 = minutes/hour 2.00 = MW (SO2)/MW(S) $= 64.06/32.06$ b = fraction of S in refinery oil (bs/Btu) $= (ppmv)*(density)/HHV-ro$	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)  CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtu/h) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)  CONTINUED</p>
<p>Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation (SIP)</p>
<p><b>C. CMS REQUIREMENTS</b></p>	<p>hdr</p>
<p>Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 007.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1</p>
<p>Acceptable monitor downtime includes reasonable periods due to the following causes:  A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 010 Distillate Unifiner Heater 5-29-B-1&2

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 023 Fuel Flow Meter (gas)

SV 008

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Sulfur Dioxide: less than or equal to 1.41 lbs/hour using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7100 1405 subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>C. CMS REQUIREMENTS</b>	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 008.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance shedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 011 Naptha Unifiner Heater 5-3-B-1,2&3

- Associated Items: GP 002 Refinery Heaters 11-14 & 22-25  
 GP 004 H2S CEMS assoc. w/ all process heaters  
 MR 001 H2S Monitor  
 MR 024 Fuel Flow Meter (gas)  
 SV 009

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Sulfur Dioxide: less than or equal to 1.95 lbs/hour using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Nitrogen Oxides: less than or equal to 0.14 lbs/million BTU heat input	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>C. CMS REQUIREMENTS</b>	hdr
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 009.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 )
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance shedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 012 Platformer Reactor Charge Heater 5-3-B-4

- Associated Items:
- GP 002 Refinery Heaters 11-14 & 22-25
  - GP 004 H2S CEMS assoc. w/ all process heaters
  - MR 001 H2S Monitor
  - MR 025 Fuel Flow Meter (gas)
  - SV 010

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Sulfur Dioxide: less than or equal to 1.95 lbs/hour using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Nitrogen Oxides: less than or equal to 0.14 lbs/million BTU heat input	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>C. CMS REQUIREMENTS</b>	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 010.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 )
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance shedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 013 Platformer Interheater No. 1 5-3-B-7

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25  
 GP 004 H2S CEMS assoc. w/ all process heaters  
 MR 001 H2S Monitor  
 MR 026 Fuel Flow Meter (gas)  
 SV 011

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Sulfur Dioxide: less than or equal to 1.68 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Nitrogen Oxides: less than or equal to 0.14 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) ; 40 CFR pt. 60, subp. J
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>C. CMS REQUIREMENTS</b>	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 011.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 014 Platformer Interheater No. 2 5-3-B-8

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 027 Fuel Flow Meter (gas)

SV 012

*EM*

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Sulfur Dioxide: less than or equal to 1.08 lbs/hour using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Nitrogen Oxides: less than or equal to 0.14 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>C. CMS REQUIREMENTS</b>	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 012.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operator: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance shedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 015 Isom Desulf Charge Heater 5-34-B-1

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 028 Fuel Flow Meter (gas)

MR 029 Fuel Flow Meter (oil)

SV 013

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 19.35 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.9 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan(SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<p>Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination</p> <p>(1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and</p> <p>(2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation:</p> $W > \frac{[1.88 \cdot (a) \cdot (x) + 2.00 \cdot (b) \cdot (y)]}{[x+y]}$ <p>where;</p> <p>w = the emission limit (0.9 lbs SO2/MMBtu)</p> $1.88 = \frac{MW(SO_2)}{MW(H_2S)}$ $= \frac{64.06}{32.06}$ <p>a = fraction of H2S in refinery gas (lbs/Btu)</p> $= \frac{(0.0898) \cdot (\text{ppmv})}{(HHV\text{-rg})}$ <p>where;</p> $0.0898 = \frac{(1\text{-mole } H_2S) \cdot (34.08 \text{ lb } H_2S/\text{lb-mole } H_2S) \cdot (1 \text{ atm})}{(10^6 \text{ lb-mole rg}) \cdot (520 \text{ R}) \cdot (0.7302 \text{ ft}^3\text{-atm}/\text{lb-mole R})}$	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<p>ppmv = parts per million by volume of H2S in refinery gas</p> <p>HHV-rg = high heating value for refinery gas (Btu/ft<sup>3</sup> @ 60 degrees F)</p> <p>x = flow rate of refinery gas (MMBtu)</p> $= (Q) \cdot (HHV\text{-rg}) \cdot (60)$ <p>where;</p> <p>Q = volumetric flow rate of refinery gas (ft<sup>3</sup>/min @ 60 degrees F)</p> <p>HHV-rg = high heating value for refinery gas (Btu/ft<sup>3</sup> @ 60 degrees F)</p> <p>60 = minutes/hour</p> <p>2.00 = MW (SO2)/MW(S)</p> $= \frac{64.06}{32.06}$ <p>b = fraction of S in refinery oil (bs/Btu)</p> $= \frac{(\text{ppmv}) \cdot (\text{density})}{(HHV\text{-ro})}$	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)  CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtuh) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)  CONTINUED</p>
<p>Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>C. CMS REQUIREMENTS</p>	<p>hdr</p>
<p>Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions for SV 013.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1</p>
<p>Acceptable monitor downtime includes reasonable periods due to the following causes:  A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>
<p>Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p> </p>	<p> </p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 016 Hot Oil Heater 5-34-B-2

- Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters  
 GP 006 Fuel combustion devices using refinery oil  
 MR 001 H2S Monitor  
 MR 030 Fuel Flow Meter (gas)  
 MR 031 Fuel Flow Meter (oil)  
 SV 013

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 76.50 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.9 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination (1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: $W > [1.88(a)(x) + 2.00(b)(y)] / [x+y]$ where; w = the emission limit (0.9 lbs SO2/MMBtu) $1.88 = MW(SO2)/MW(H2S)$ $= 64.06/34.08$ a = fraction of H2S in refinery gas (lbs/Btu) $= (0.0898)(ppmv)/(HHV-rg)$ where; $0.0898 = (1\text{lb-mole H2S})(34.08\text{ lb H2S/lb-mole H2S})(1\text{ atm})$ $(10^6\text{ lb-mole rg})(520\text{ R})(0.7302\text{ ft}^3\text{-atm/lb-mole R})$	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft <sup>3</sup> @ 60 degrees F) x = flow rate of refinery gas (MMBtu) $= (Q)(HHV-rg)(60)$ where; Q = volumetric flow rate of refinery gas (ft <sup>3</sup> /min @ 60 degrees F) HHV-rg = high heating value for refinery gas (Btu/ft <sup>3</sup> @ 60 degrees F) 60 = minutes/hour $2.00 = MW(SO2)/MW(S)$ $= 64.06/32.06$ b = fraction of S in refinery oil (bs/Btu) $= (ppmv)(\text{density})/HHV-ro$	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)  CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtuh) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)  CONTINUED</p>
<p>Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation (SIP)</p>
<p><b>C. CMS REQUIREMENTS</b></p>	<p>hdr</p>
<p>Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 013.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN implementation Plan (SIP); Minn. R. 7017.1090, subp. 1</p>
<p>Acceptable monitor downtime includes reasonable periods due to the following causes:  A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>
<p>Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 017 HDH Charge heater 5-32-B-1

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 032 Fuel Flow Meter (gas)

SV 014

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 66.60 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.9 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (Minn.R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<p>Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination</p> <p>(1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and</p> <p>(2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation:</p> $W > \frac{[1.88(a)(x) + 2.00(b)(y)]}{[x+y]}$ <p>where;</p> <p>w = the emission limit (0.9 lbs SO2/MMBtu)</p> <p>1.88 = MW(SO2)/MW(H2S)</p> <p>= 64.06/34.08</p> <p>a = fraction of H2S in refinery gas (lbs/Btu)</p> <p>= (0.0898)*(ppmv)/(HHV-rg)</p> <p>where;</p> <p>0.0898 = (1lb-mole H2S)*(34.08 lb H2S/lb-mole H2S)*(1 atm)</p> <p>(10<sup>6</sup> lb-mole rg)*(520 R)*(0.7302 ft<sup>3</sup>-atm/lb-mole R)</p>	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<p>ppmv = parts per million by volume of H2S in refinery gas</p> <p>HHV-rg = high heating value for refinery gas (Btu/ft<sup>3</sup> @ 60 degrees F)</p> <p>x = flow rate of refinery gas (MMBtu)</p> <p>= (Q)*(HHV-rg)*(60)</p> <p>where;</p> <p>Q = volumetric flow rate of refinery gas (ft<sup>3</sup>/min @ 60 degrees F)</p> <p>HHV-rg = high heating value for refinery gas (Btu/ft<sup>3</sup> @ 60 degrees F)</p> <p>60 = minutes/hour</p> <p>2.00 = MW (SO2)/MW(S)</p> <p>= 64.06/32.06</p> <p>b = fraction of S in refinery oil (bs/Btu)</p> <p>= (ppmv)*(density)/HHV-ro)</p>	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)  CONTINUED
<p>where;</p> <p>ppmw = parts per million by weight of S in refinery oil (lb/lb)</p> <p>density = density of refinery oil (Btu/gal @ 60 degrees F)</p> <p>HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F)</p> <p>y = flow rate of refinery oil (MMBtu)</p> <p>= (q)*(HHV-ro)*(60)</p> <p>where;</p> <p>q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F)</p> <p>HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F)</p> <p>60 = 60 minutes/hour</p>	Title I Condition: SIP for SO2 NAAQS 40 CFR Section 50 and MN State Implementation Plan (SIP)  CONTINUED



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 018 SGP Dehexanizer Reboiler 5-10-B-1

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 033 Fuel Flow Meter (gas)

MR 034 Fuel Flow Meter (oil)

SV 015

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 36.0 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.9 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
(1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and	
(2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation:	
$W > \frac{[1.88 \cdot (a) \cdot (x) + 2.00 \cdot (b) \cdot (y)]}{[x+y]}$ where;	
w = the emission limit (0.9 lbs SO2/MMBtu) 1.88 = MW(SO2)/MW(H2S) = 64.06/34.08	
a = fraction of H2S in refinery gas (lbs/Btu) = (0.0898) * (ppmv) / (HHV-rg)	
where; 0.0898 = (1 lb-mole H2S) * (34.08 lb H2S/lb-mole H2S) * (1 atm)	
$(10^6 \text{ lb-mole rg}) \cdot (520 \text{ R}) \cdot (0.7302 \text{ ft}^3\text{-atm/lb-mole R})$	
ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft <sup>3</sup> @ 60 degrees F)	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
x = flow rate of refinery gas (MMBtu) = (Q) * (HHV-rg) * (60)	CONTINUED
where; Q = volumetric flow rate of refinery gas (ft <sup>3</sup> /min @ 60 degrees F)	
HHV-rg = high heating value for refinery gas (Btu/ft <sup>3</sup> @ 60 degrees F)	
60 = minutes/hour 2.00 = MW (SO2)/MW(S) = 64.06/32.06	
b = fraction of S in refinery oil (bs/Btu) = (ppmv) * (density) / HHV-ro	

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC  
 Permit Number: 16300003 - 003

<p>where;                  ppmw = parts per million by weight of S in refinery oil (lb/lb)                  density = density of refinery oil (Btu/gal @ 60 degrees F)                  HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F)                  y = flow rate of refinery oil (MMBtuh)  <math>y = (q) \cdot (HHV-ro) \cdot (60)</math>                  where;                  q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F)                  HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F)                  60 = 60 minutes/hour</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)                  CONTINUED</p>
<p>Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p><b>C. CMS REQUIREMENTS</b></p>	<p>hdr</p>
<p>Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 015.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN implementation Plan (SIP), Minn. R. 7017.1090, subp. 1</p>
<p>Acceptable monitor downtime includes reasonable periods due to the following causes:                  A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative;                  B. sudden and not reasonably preventable breakdowns;                  C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or                  D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>
<p>Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p> </p>	<p> </p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

**Subject Item:** EU 019 Sulfur Recovery Units (SRU1 and SRU 2)

**Associated Items:** CE 004 SCOT Incinerator

MR 004 SO2 CEMS

MR 005 Oxygen monitor

SV 062

What to do	Why to do it
<p><b>A. POLLUTANT LIMITS</b></p>	<p>hdr</p>
<p>Sulfur Dioxide: less than or equal to 15.0 lbs/hour using 3-hour Rolling Average . The company shall use the CEMS monitor the sulfur dioxide emissions in order to calculate pounds of sulfur dioxide per hour (lb/hr).</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: 40 CFR pt 50.4; Minn. R. 7011.1410, subp. 3, item A)</p>
<p>Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction. The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>-</p>	<p>-</p>
<p><b>B. OTHER LIMITS AND REQUIREMENTS</b></p>	<p>hdr</p>
<p>Sulfur Dioxide: The company shall use the following equation to calculate sulfur dioxide emissions:  <math display="block">M(SO_2) = (3.545 \times 10^{-6} \times [1.098 \times A + 67197 \times B + 9.989 \times C] \times X) / (21 - E)</math> </p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>where                      M(SO2) = mass flow of SO2 from the stack (lbs/hr)                      A = volumetric flow rate of SCOT tail gas (scf/hr)                      B = volumetric flow rate of refinery fuel oil consumed by the No. 4 and No. 6 boilers (barrels/hr)                      C = volumetric flow rate of fuel gas to the SCOT incinerator and the No. 4 and No. 6 boilers (scf/hr)                      E = excess oxygen in the stack gas (percent)                      X = concentration of SO2 in the stack gas (ppm, wet basis)</p>	<p></p>
<p>SRU 1 and SRU 2 are redundant units. At no time shall both SRU 1 and SRU 2 be bypassed except in the case of an emergency where the plant and personnel safety are at risk. If this occurs, the Company shall follow Minn. R. 7019.1000.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p><b>C. CEMS REQUIREMENTS</b></p>	<p>hdr</p>
<p>CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC  
 Permit Number: 16300003 - 003

<p>Acceptable monitor downtime includes reasonable periods due to the following causes:</p> <p>A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative;</p> <p>B. sudden and not reasonably preventable breakdowns;</p> <p>C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or</p> <p>D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>
<p>Sulfur Dioxide Monitoring: calibrate, operate and maintain Continuous Emissions Monitoring Systems (CEMS) which measures sulfur dioxide emissions and an oxygen CEMS to correct the data for excess air.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR Section 60.15 (a); 40 CFR Section 60.105 (a)(5); Minn. R. 7017.1006</p>
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**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 020 No. 4 Boiler 5-16-B-4

- Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters  
 GP 006 Fuel combustion devices using refinery oil  
 MR 001 H2S Monitor  
 MR 035 Fuel Flow Meter (gas)  
 MR 036 Fuel Flow Meter (oil)  
 SV 016

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Sulfur Dioxide: less than or equal to 36.36 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.90 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide: The company shall use the following equation to calculate sulfur dioxide emissions: $M(SO_2) = (3.545 \times 10^{-6} \times [1.098 \times A + 67197 \times B + 9.989 \times C] \times X) / (21 - E)$ where M(SO <sub>2</sub> ) = mass flow of SO <sub>2</sub> from the stack (lbs/hr) A = volumetric flow rate of SCOT tail gas (scf/hr) B = volumetric flow rate of refinery fuel oil consumed by the No. 4 and No. 6 boilers (barrels/hr) C = volumetric flow rate of fuel gas to the SCOT incinerator and the No. 4 and No. 6 boilers (scf/hr) E = excess oxygen in the stack gas (percent) X = concentration of SO <sub>2</sub> in the stack gas (ppm, wet basis)	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation (SIP)
<b>C. CMS REQUIREMENTS</b>	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 016.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>Acceptable monitor downtime includes reasonable periods due to the following causes:</p> <p>A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative;</p> <p>B. sudden and not reasonably preventable breakdowns;</p> <p>C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or</p> <p>D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>
<p>Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p> </p>	<p> </p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 021 No. 6 Boiler 5-16-B-6

- Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters  
 GP 006 Fuel combustion devices using refinery oil  
 MR 001 H2S Monitor  
 MR 037 Fuel Flow Meter (gas)  
 MR 038 Fuel Flow Meter (oil)  
 SV 016

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 36.36 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.90 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide: The company shall use the following equation to calculate sulfur dioxide emissions: $M(SO_2) = (3.545 \times 10^{-6} \times [1.098 \times A + 67197 \times B + 9.989 \times C] \times X) / (21 - E)$ where M(SO2) = mass flow of SO2 from the stack (lbs/hr) A = volumetric flow rate of SCOT tail gas (scf/hr) B = volumetric flow rate of refinery fuel oil consumed by the No.4 and No. 6 boilers (barrels/hr) C = volumetric flow rate of fuel gas to the SCOT incinerator and the No. 4 and No. 6 boilers (scf/hr) E = excess oxygen in the stack gas (percent) X = concentration of SO2 in the stack gas (ppm, wet basis)	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 017.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

<p>Acceptable monitor downtime includes reasonable periods due to the following causes:</p> <p>A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative;</p> <p>B. sudden and not reasonably preventable breakdowns;</p> <p>C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or</p> <p>D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED</p>
<p>Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 022 Guard Case Reactor Heater 5-36-B-1

- Associated Items: GP 002 Refinery Heaters 11-14 & 22-25  
 GP 004 H2S CEMS assoc. w/ all process heaters  
 MR 001 H2S Monitor  
 MR 039 Fuel Flow Meter (gas)  
 SV 017

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.70 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR Section 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR Section 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Nitrogen Oxides: less than or equal to 0.14 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR Section 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR Section 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 017.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 023 Reformer Charge & No. 1 Interheaters 5-36-B-2,3,4

- Associated Items: GP 002 Refinery Heaters 11-14 & 22-25  
 GP 004 H2S CEMS assoc. w/ all process heaters  
 MR 001 H2S Monitor  
 MR 040 Fuel Flow Meter (gas)  
 SV 018

What to do	Why to do it
A. POLLUTANT LIMITS	x shdr
Sulfur Dioxide: less than or equal to 2.10 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Nitrogen Oxides: less than or equal to 0.14 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions form SV 018.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 024 No. 3 Interheater 5-36-B-6E

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25  
 GP 004 H2S CEMS assoc. w/ all process heaters  
 MR 001 H2S Monitor  
 MR 041 Fuel Flow Meter (gas)  
 SV 019

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Sulfur Dioxide: less than or equal to 0.63 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Nitrogen Oxides: less than or equal to 0.14 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>C. CMS REQUIREMENTS</b>	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 019.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC  
 Permit Number: 16300003 - 003

Subject Item: EU 025 No. 2 Interheater 5-36-B-6W  
 Associated Items: GP 002 Refinery Heaters 11-14 & 22-25  
 GP 004 H2S CEMS assoc. w/ all process heaters  
 MR 001 H2S Monitor  
 MR 043 Fuel Flow Meter (gas)  
 SV 020

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.05 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Nitrogen Oxides: less than or equal to 0.14 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 020.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 026 DDS Reactor Charge Heater 5-37-B-1

- Associated Items:
- CE 006 Flue Gas Recirculation
  - CE 007 Low NOX Burners
  - GP 004 H2S CEMS assoc. w/ all process heaters
  - MR 001 H2S Monitor
  - MR 042 Fuel Flow Meter (gas)
  - SV 021

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Nitrogen Oxides: less than or equal to 0.07 lbs/million Btu heat input using 24-hour rolling average.	Title I Condition; limit to avoid classification as a major modification under 40 CFR Section 52.21
Sulfur Dioxide: less than 1.38 lbs/hour using 3-hour Rolling Average	Title I Condition: MN State Implementation Plan (SIP); 40 CFR Section 50.5; Minn. R. 7009.0080 (most stringent; meets the limits set by 40 CFR pt. 60, subp. J; Minn. R. 7011.1410, subp. 3 (A))
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: MN State Implementation Plan (SIP), 40 CFR Section 50.5; Minn. R. 7009.0080; (most stringent, meets the limits set by: 40 CFR pt. 60, subp. J; Minn.R. 7011.1410, subp. 3 (A))
Carbon Monoxide: less than 0.035 lbs/million Btu heat input using 365-day Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21; 40 CFR PT 51 Appendix S, or 40 CFR Section 52.24
Volatile Organic Compounds: less than 0.003 lbs/million Btu heat input using 365-day Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21; 40 CFR pt. 51 Appendix S, or 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>C. CEMS REQUIREMENTS</b>	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 021.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 027 DDS Product Stripper Reboiler 5-37-B-2

Associated Items: CE 008 Flue Gas Recirculation

CE 009 Low NOx Burners

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 044 Fuel Flow Meter (gas)

SV 022

What to do	Why to do it
<b>A. POLLUTANT LIMITS</b>	hdr
Total Particulate Matter: less than or equal to 0.005 lbs/million Btu heat input using 365-day Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.2; 40 CFR pt. 51 Appendix S; or 40 CFR Section 52.24
Particulate Matter < 10 micron: less than or equal to 0.005 lbs/million Btu heat input using 365-day Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21; 40 CFR pt. 51 Appendix S; or 40 CFR Section 52.24
Nitrogen Oxides: less than or equal to 0.07 lbs/million Btu heat input using 24-hour Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Sulfur Dioxide: less than 0.78 lbs/hour using 3-hour Rolling Average	Title I Condition: MN State Implementation Plan (SIP); 40 CFR Section 50.5; 40 CFR pt. 60, subp. J; Minn. R. 7009.0080
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: MN State Implementation Plan (SIP), 40 CFR Section 50.5; Minn. R. 7009.0080; (most stringent, meets the limits set by: 40 CFR pt. 60, subp. J; Minn. R. 7011.1410, subp. 3, item A)
Carbon Monoxide: less than 0.035 lbs/million Btu heat input using 365-day Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21; 40 CFR PT. 51 Appendix S, or 40 CFR Section 52.24
Volatile Organic Compounds: less than 0.003 lbs/million Btu heat input using 365-day Rolling Average	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21; 40 CFR pt. 51 Appendix S, or 40 CFR Section 52.21
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
<b>B. OTHER LIMITS AND REQUIREMENTS</b>	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
<b>C. CEMS REQUIREMENTS</b>	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 020.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 056 Fire Hall Diesel Engine

Associated Items: SV 052

What to do	Why to do it
B. OTHER LIMITS AND REQUIREMENTS	hdr
	d
Sulfur Content of Fuel, less than or equal to 0.05 percent by weight of diesel fuel. THIS REQUIREMENT WILL BE EFFECTIVE ON THE DATE EPA APPROVES THE REVISIONS INTO THE SIP.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Diesel Fuel Certification: The owner or operator shall retain written documentation of each shipment of diesel fuel oil received for the diesel engines. The written documentation shall include the following information: the sulfur content of the diesel fuel and the method used to determine the sulfur content. THIS REQUIREMENT WILL BE EFFECTIVE ON THE DATE EPA APPROVES THE REVISIONS INTO THE SIP.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 057 Lagoon Diesel Engine

Associated Items: SV 053

What to do	Why to do it
<p>B. OTHER LIMITS AND REQUIREMENTS</p>	<p>hdr</p>
<p>Sulfur Content of Fuel: less than or equal to 0.05 percent by weight of diesel fuel. THIS REQUIREMENT WILL BE EFFECTIVE ON THE DATE EPA APPROVES THE REVISIONS INTO THE SIP.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Diesel Fuel Certification: In order to demonstrate compliance with the limitations on sulfur content of the diesel fuel used in the two stationary diesel engines at the facility, the company shall retain written documentation of each shipment of diesel fuel oil received at each of the diesel engines. The written documentation shall include the following information: the sulfur content of the diesel fuel and the method used to determine the sulfur content. THIS REQUIREMENT WILL BECOME EFFECTIVE ON THE DATE EPA APPROVES THE REVISIONS INTO THE SIP.</p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 060 Boiler House Diesel

Associated Items: SV 054

What to do	Why to do it
<p>have been granted. (visit air.committments)</p>	
<p><b>B. OTHER LIMITS AND REQUIREMENTS</b></p>	<p>hdr</p>
<p>Sulfur Content of Fuel: less than or equal to 0.05 percent by weight of diesel fuel. <u>THIS REQUIREMENT WILL BE EFFECTIVE ON THE DATE EPA APPROVES THE REVISIONS INTO THE SIP.</u></p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>
<p>Diesel Fuel Certification: The owner or operator shall retain written documentation of each shipment of diesel fuel oil received for the diesel engines. The written documentation shall include the following information: the sulfur content of the diesel fuel and the method used to determine the sulfur content. <u>THIS REQUIREMENT WILL BE EFFECTIVE ON THE DATE EPA APPROVES THE REVISIONS INTO THE SIP.</u></p>	<p>Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/13/00

Facility Name: Marathon Ashland Petroleum LLC

Permit Number: 16300003 - 003

Subject Item: EU 063 Lt Oil Truck Rack Gasoline

Associated Items: CE 014 Vapor Recovery System-Condensers, Hoods, & Other Enclosures

MR 006 TOC Monitor

SV 061

What to do	Why to do it
B. OTHER LIMITS AND REQUIREMENTS	hdr
Construction/Design Requirement: Discontinue loading light oil products at the existing loading rack not later than 180 days after initial startup of EU063; apply for an amendment required by Minn. R. 7007.1150-7007.1500 prior to returning the existing loading rack in any service	Title I Condition: Creditable decrease under 40 CFR Section 52.21