



HESS Department



**Marathon Petroleum Company LP**

**VIA FEDERAL EXPRESS**

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October 28, 2019

Mr. Jorge Acevedo  
Michigan Department of Environment, Great Lakes, and Energy  
Air Quality Division  
3058 W. Grand Boulevard  
Suite 2-300  
Detroit, Michigan 48202-6058

**RE: Response to 10/7/2019 Violation Notice Regarding a Rule 912 Notification Report;  
Marathon Petroleum Company LP, Michigan Refining Division – SRN A9831**

Dear Mr. Acevedo:

This letter is in response to the October 7, 2019 Violation Notice (VN) issued to Marathon Petroleum Company LP, Michigan Refining Division (MPC). The VN requested a written response by October 28, 2019 (21 days from the date of the letter).

The Michigan Department of Environment, Great Lakes, and Energy, Air Quality Division (AQD), issued the VN in response to a September 20, 2019 Rule 912 follow-up notification letter regarding a vapor leak and an emergency shutdown event at MPC that occurred on September 12, 2019. In the VN, the AQD alleged that the following violations occurred:

Process Description	Rule/Permit Condition Violated	Comments
FCCU (EU11-FCCU-S1)	40 CFR 63.1564(a)(5)(ii)	The inlet velocity to the primary internal cyclones of the catalytic cracking unit catalyst regenerator must be maintained at or above 20 feet per second during startup, shutdown and hot standby. During startup, the primary cyclone inlet velocity was below the 20 feet per second limit for 13 hours from September 14 through September 15. The lowest velocity was 9 feet per second.
FCCU (EU11-FCCU-S1)	General Condition 11(a) of ROP No. MI-ROP-A9831-2012c, Section 1, and Michigan Administrative Rule 301 (R 336.1301)	The FCCU exceeded a 6-minute average of 20% opacity on:  326 occasions during September 14, 2019 to September 15, 2019. The highest six minute average was 97%.

This letter provides information requested in the VN, including: the dates the violations occurred; an explanation of the causes and duration of the violations; whether the violations are ongoing; a summary of

the actions that have been taken and are proposed to be taken to correct the violations and the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence. The request is italicized bold and MPC's response is underneath each item.

**Dates the Alleged Violation Occurred:**

Please see the table in Attachment 1 - FCCU Cyclone Inlet Velocity. Dates and times when the inlet velocity was less than 20 ft/second have been highlighted.

Please see the table in Attachment 2 – FCCU Regen Opacity Log for dates and times when the opacity from the FCCU was greater than 20% opacity and the air blower was operational.

**Explanation of the Causes and Duration of the Alleged Violations:**

On 9/12/19, a vapor leak was observed coming from a flange on a two-inch slurry oil line in the Fluidized Catalytic Cracking Unit (FCCU). MPC responded by executing an emergency shutdown of the FCCU and other process units. The leak was isolated and repaired.

During startup of the FCCU at approximately 10:00 AM on 9/14/19, MPC encountered difficulty in getting the auxiliary burner to light and stay lit. The main air blower flow rate was lowered to assist in lighting the burner. The primary cyclone inlet velocity is influenced by the main air blower flow rate. With a low flow rate from the main air blower, the primary cyclone inlet velocity was below the 20 ft/second MACT alternate work practice standards found in 40 CFR 63.1564(a)(5)(ii). The auxiliary burner was initially lit at approximately 6:00 PM on 9/14/19. MPC started to walk up the main air blower rate, but the air blower surged and caused the auxiliary burner to shut down at approximately 8:00 PM. MPC relit the auxiliary burner and began walking up the main air blower rate again. During this time the valves between the FCCU reactor and regenerator were closed. Steam was flowing through or purging the reactor and gas oil was circulating in the bottoms of the fractionator. The primary inlet velocity hit the targeted 20 ft/sec rate on 9/15/19 at 12:00 AM. The unit proceeded to warm-up and feed was introduced and maintained to the FCCU at approximately 11:45 AM on 9/15/19. MPC followed its Startup, Shutdown, Malfunction and General Duty Plan and associated procedures during startup of the FCCU.

As the ESPs cannot be operated during FCCU startup, there was a period of time where opacity from the FCCU regenerator was greater than 20%. MPC communicated with EGLE at approximately 1:00 PM on 9/13/19 that 24-26 hours of excess opacity were expected upon startup, since MPC cannot operate the ESP until oxygen and carbon monoxide reach safe levels to avoid the risk of fire or explosion.

The low primary cyclone inlet velocity and high levels of opacity are both related to difficulties in getting the auxiliary burner lit. After the 9/14/019 FCCU startup, MPC investigated the causes of the delay in lighting the auxiliary burner. The investigation revealed that a regulator on the natural gas feed to the auxiliary burner had malfunctioned. Because the regulator was not functioning properly, the air-to-fuel ratio needed to light the burner could not be attained and manual adjustments to the fuel supply were needed. The failure of the regulator and need for manual adjustments delayed the lighting of the auxiliary burner, which in turn delayed the return of the main air blower to the minimum flow rate required to meet a primary cyclone inlet velocity of 20 ft/second.

**Whether the Alleged Violations are Ongoing:**

The alleged violations are not ongoing.

**Summary of Actions Taken:**

MPC followed its Startup procedures, its Operation, Maintenance, and Monitoring Plan (OMMP) and its Startup, Shutdown, Malfunction and General Duty plan to startup the FCCU in as safe and expeditious manner as possible to minimize emissions.

**Steps Taken to Prevent a Reoccurrence:**

Due to the difficulty in getting the auxiliary burner to light and stay lit, MPC personnel consciously lowered the main air blower flow rate in an attempt to help light the burners and obtain stability in the equipment. This difficulty resulted in a delay of about a shift in getting the auxiliary burner lit. An Incident Investigation was conducted to determine the reason for the difficulty in getting the auxiliary burner to stay lit. During the investigation it was discovered that the regulator on the natural gas feed to the auxiliary burner was not working properly. The pressure settings for the air to gas ratio on were not responding properly which required making manual adjustments on the fuel supply to the ignitor. A recommendation from that investigation is to repair or replace that regulator by March 15, 2020.

MPC appreciates this opportunity to respond to the VN. If you have any questions concerning this issue, please feel free to contact Jeremy Beasley at (313) 297-6346.

Sincerely,

Marathon Petroleum Company LP  
By: MPC Investment LLC, its General Partner



Mr. David E. Leaver, Deputy Assistant Secretary

Attachments: Attachment 1 – FCCU Cyclone Inlet Velocity  
Attachment 2 – FCCU Regen Opacity Log

- c. Paul Max, City of Detroit BSEED
- Ms. Mary Ann Dolehanty, MDEGLE
- Dr. Eduardo Olaguer, MDELE
- Mr. Christopher Ethridge, MDEGLE
- Ms. Jenine Camilleri, MDEGLE
- Ms. Wilhemina McLemore, MDEGLE
- Mr. Jeff Korniski, MDEGLE