



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Marathon Petroleum Corporation, Garyville, Louisiana

FROM: Constantinos Loukeris, Environmental Engineer
AECAB (MI/WI)

THRU: Sarah Marshall, Section Supervisor
AECAB (MI/WI)

TO: File

BASIC INFORMATION

Facility Name: Marathon Petroleum Corporation (MPC)

Facility Location: 4663 W. Airline Highway, Garyville, LA, 70051

Date of Inspection: April 14-15, 2022

EPA Inspector(s):

1. Constantinos Loukeris, Environmental Engineer
2. Jason Schenandoah, Environmental Engineer
3. James Haynes, Physical Scientist
4. Ben Rosenthal, Physical Scientist

Other Attendees:

1. Kelly Hedges, MPC Environmental Supervisor
2. Haley Ilg, MPC Environmental Manager
3. Paula Bremmer, Environmental Professional
4. Jim Manning, MPC ESS Manager
5. Lance Traylor, MPC LDAR Coordinator
6. Mia Mosby, MPC Environmental Professional
7. Veo Mills, MPC Environmental Engineer
8. David Calebaugh, MPC Environmental Professional
9. Jason Bradford, MPC Environmental Professional
10. Marvin Alberto, Clean Harbors Contractor
11. Jonathan Brockhaus, Alliance Contractor
12. Lee Oncale, MPC Shift Supervisor

Contact Email Address: kmhedges@marathonpetroleum.com

Purpose of Inspection: Inspect the benzene waste operations and volatile organic compounds (VOC) emissions from wastewater systems

Facility Type: Petroleum Refinery

Regulations Central to Inspection: Refinery wastewater subject to the New Source Performance Standards for VOC Emissions from Petroleum Refinery Wastewater Systems, at 40 C.F.R. Part 60, Subpart QQQ (Subpart QQQ), and the National Emissions Standards for Hazardous Air Pollutants for Benzene Waste Operations, at 40 C.F.R. Part 61, Subpart FF (Subpart FF)

Arrival Time: April 13, 2022, 2:00 pm

Departure Time: April 15, 2022, 1:20 pm

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Provided CBI warning to facility

The following information was obtained verbally from MPC personnel unless otherwise noted.

Process Description:

MPC provided an overview of the overall flow of the benzene waste streams, including those that are controlled by Subpart FF and those that overlap with Subpart QQQ. MPC operates two desalter units, one installed in the late 1970's (desalter #10) and one installed in the late 2009 (desalter #210). Each of the desalters operate with a benzene flash column to remove any benzene prior to sending the streams for further treatment. Originally, MPC managed waste from each desalter to an American Petroleum Institute (API) designed oil/water separator (OWS) respective of installation timing. However, since 2009, MPC has modified its benzene waste operations a few times such that each desalter sends material primarily to tank #100-5 with a smaller stream being sent to either API oil water/separator #1 (for desalter 10). The wastewater from tank#100-5 is sent to two dissolved nitrogen floatation units (DNF) that operate in parallel. The DNF's were installed in late 2020.

In addition to the two desalter streams, the refinery generates other waste streams that are sent to each of the API oil/water separators. Each API oil/water separator streams route the benzene emissions to a two-carbon bed system, that is operated in parallel. MPC indicated that the carbon was changed last on one of the beds for API oil/water separator #1 in 2017, and there has been no carbon bed change for API oil/water separator #2 since its installation in 2010.

Staff Interview: EPA had a brief interview with Mr. Marvin Alberto on April 15, 2022 regarding his oversight of the Subpart FF program. Mr. Alberto is responsible for conducting EPA Method 21 and visual inspections on the components that MPC has identified as needing that type of monitoring. In addition, Mr. Alberto conducts carbon canister sampling for breakthrough by sampling the outlet of the carbon beds for 5 parts per million (ppm) of benzene by using a benzene calibrated portable photo-ionization detector instrument.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:

- MPC indicated that the covers of API #1 OWS, API #2 OWS, the stormwater sump, AIS3 Sump, and the ISBL sump are not monitored with Method 21 to verify that there no detectable emissions above 500 ppm; however, a seal gap measurement is performed semi-annually for the API's.
- EPA observed a pressure relief valve to have a bypass to atmosphere near associated with the benzene stripper supporting the area 10 desalter system.
- EPA observed a vacuum truck with personnel cleaning an oil float on both days that we were onsite on top of API #1 OWS. MPC operations indicated that this is routine during any rain events and at other times.
- EPA observed no sealant at multiple spots, cracked seals, and a warped-open cover on the stormwater sump located next to API #1 OWS.
- Two carbon canisters controlling emissions from API #1 OWS and API #1 OWS effluent sump are used in parallel.
- MPC indicated that the effluent from the sour water strippers is routed to API #1 OWS effluent sump, and the temperature of that stream is between 160-200°F.

Photos and/or Videos: were taken during the inspection.

EPA imaged hydrocarbon emissions using a FLIR optical gas imaging camera, Model GFx-320. In addition, this camera was also used to take digital pictures and videos as well. See Appendix 1 for the summary of the videos and pictures taken.

Field Measurements: were taken during this inspection.

See Appendix B for a summary EPA's field measurements.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

1. 2019-2022 Annual No Detectable Emission Inspections
2. 2019-2022 Quarterly BWON Visual Inspections
3. End of Line Sampling Plan
4. 2019-2021 Semi-Annual Subpart QQQ Reports

5. 2019-2021 Semi-Annual Subpart FF Reports
6. 2019-2021 Total Annual Benzene Reports
7. Subpart FF Carbon Canister Changeout Report for 2019-2022
8. Carbon Adsorption System Design Basis For the API Vent (July 11, 2008) – Confidential Business Information (CBI)
9. API Separator General Plan and Drawing – CBI
10. API Separator Panel and Seal Layout – CBI
11. API Welded Panel Assembly – (1 of 2) – CBI
12. API Welded Panel Assembly – (1 of 2) – CBI
13. API Separator Main Bay Seal Details – CBI
14. API Separator Forebays Panel and Seal Details – CBI
15. API Separator Forebay Panel Fabrication Details – CBI
16. API Separator Primary and Secondary Seal Details - CBI
17. OWS – J-Bolt Installation – CBI
18. 2019-2022 Instrument Calibration Records
19. WWTP Flow Diagram (dated 4/29/2022)
20. Flash Column Performance Certification (March 30, 2005)
21. Revised MPC 6 BQ RY21 (dated 4/29/2022)
22. Garyville Carbon Canister Calculation with ASTM Final Spreadsheet
23. CBI Notice (dated 4/29/2022)

Concerns: EPA identified the follow areas of concern:

1. MPC has not maintained a wastewater drawing reflecting the benzene waste operations, and unable to provide how compliance with the 6 Megagram control option is maintained for Subpart FF;
2. MPC has never conducted no detectable emission (NDE) monitoring on the API OWS's, and other sump covers that are part of the controlled system for Subpart FF.
3. Routine oil float on top of API #1 OWS indicative of the floating roof not creating a seal or designed to NDE under Subparts QQQ and FF.
4. MPC may not be meeting the 6 Megagram control option based on the several of the waste managements being considered controlled but not operated as controlled.
5. Pressure relief valves subject to Subpart FF having an atmospheric bypass.

DIGITAL SIGNATURES

Report Author: _____

Section Supervisor: _____

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APPENDIX A: DIGITAL IMAGE/VIDEO LOG

1. Inspector Name: James Haynes	2. Archival Record Location: <i>C:\Users\cloukeri\OneDrive - Environmental Protection Agency (EPA)\EPAWork\Marathon Ashland Petroleum\Garyville Refinery\MPC Garyville - April 2022 Inspection\EPA FLIR Video and Pics</i>
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Image Number	File Name	Date	Description of Image
1	MOV_0186.mp4	4/14/2022	Hydrocarbon emissions imaged from Stormwater Sump – Gooseneck Vent
2	MOV_0189.mp4	4/14/2022	Video of a portion of the Stormwater Sump, flame arrestor, and gooseneck vent
3	MOV_0190.mp4	4/14/2022	Brief video of the Stormwater Sump cover
4	MOV_0195.mp4	4/14/2022	Video of API #1 OWS portion of the floating roof, with visible oil stains on parts of the seal
5	MOV_0196.mp4	4/14/2022	Video of API #1 OWS – Oil-water float on roof
6	MOV_0209.mp4	4/14/2022	Video of a grated manhole cover, digital and infrared
7	MOV_0211.mp4	4/14/2022	Hydrocarbon emissions imaged from API #1 OWS Effluent Sump
8	MOV_0212.mp4	4/14/2022	Hydrocarbon emissions imaged from Stormwater Sump – Cover Warped Open
9	MOV_0213.mp4	4/14/2022	Hydrocarbon emissions imaged from Stormwater Sump – Gooseneck Vent, Process Heaters in background
10	MOV_0216.mp4	4/14/2022	Infrared video, showing a reflection on an external floating roof tank from flare located nearby
11	MOV_0217.mp4	4/14/2022	Hydrocarbon emissions imaged from steam-assisted flare nearby wastewater tanks
12	DC_0176.jpg	4/14/2022	Stormwater Sump Cover
13	DC_0177.jpg	4/14/2022	Stormwater Sump Cover – Warped Cover, Open Seam
14	DC_0178.jpg	4/14/2022	Stormwater Sump Cover - Seam by Pump
15	DC_0179.jpg	4/14/2022	Stormwater Sump Cover - Seam by Pump, Sealant Missing on Cover Plate
16	DC_0180.jpg	4/14/2022	Stormwater Sump Cover - Seam by Pump
17	DC_0181.jpg	4/14/2022	Stormwater Sump Cover _ Seam by Pump, Dry Caulk, Gap
18	DC_0182.jpg	4/14/2022	Stormwater Sump Cover - Seam

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19	DC_0183.jpg	4/14/2022	Stormwater Sump Cover
20	DC_0184.jpg	4/14/2022	Stormwater Sump Cover
21	DC_0187.jpg	4/14/2022	Stormwater Sump Cover
22	DC_0188.jpg	4/14/2022	Stormwater Sump Cover – Gooseneck Vent
23	DC_0191.jpg	4/14/2022	Stormwater Sump Cover
24	DC_0192.jpg	4/14/2022	Stormwater Sump Cover
25	DC_0193.jpg	4/14/2022	API #1 OWS – Oil-water float on roof
26	DC_0194.jpg	4/14/2022	API #1 OWS – Oil-water float on roof
27	DC_0197.jpg	4/14/2022	API #1 OWS vent off back bay
28	DC_0198.jpg	4/14/2022	API #1 OWS vent off back bay
29	DC_0199.jpg	4/14/2022	API #1 OWS Effluent Sump
30	DC_0200.jpg	4/14/2022	API #1 OWS Effluent Sump
31	DC_0201.jpg	4/14/2022	API #1 OWS Effluent Sump
32	DC_0202.jpg	4/14/2022	API #1 OWS Effluent Sump
33	DC_0203.jpg	4/14/2022	API #1 OWS Effluent Sump – Staining and Cracks in Cover lining
34	DC_0204.jpg	4/14/2022	API #1 OWS Effluent Sump – Staining and Cracks in Cover lining
35	DC_0205.jpg	4/14/2022	API #1 OWS Effluent Sump – Staining and Cracks in Cover lining
36	DC_0206.jpg	4/14/2022	API #2 – Cover manway
37	DC_0207.jpg	4/14/2022	Expansion Sump
38	DC_0208.jpg	4/14/2022	View of Sumps Leading into API #1 OWS
39	DC_0210.jpg	4/14/2022	Pressure Relief Valve with Atmospheric Bypass off Benzene Stripper in Area 10
40	DC_0214.jpg	4/14/2022	API #1 OWS – Oil-water float on roof
41	DC_0215.jpg	4/14/2022	API #1 OWS – Oil-water float on roof
42	IR_00185.jpg	4/14/2022	Stormwater Sump Cover – Gooseneck Vent (infrared)

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APPENDIX B: FIELD MEASUREMENT DATA

The table below summarizes the field measurements by EPA conducting Method 21 with a Thermo Toxic Vapor Analyzer, Model 2020, and when available confirmed by MPC. Where MPC did not have an instrument available to confirm, EPA confirmed with a 2nd instrument.

Component ID	Equipment Type	EPA's Reading (ppm)	MPC's Reading (ppm)*	Additional Notes
API #1 OWS	Drain hood, East Side, Southwest Corner	562	-	None
API #1 OWS	Floating roof seal - East Side, Northeast corner	2,148	-	None
API #1 OWS	NW Cover on oil skim, and pump to hazardous waste tank	2,908	-	No sealant around the area. MPC indicated maintenance work completed several days prior, and expect to seal soon
API #1 OWS	SW Cover on oil skim, and pump to hazardous waste tank	2,997	-	No sealant around the area. MPC indicated maintenance work completed several days prior, and expect to seal soon
API #1 OWS	NW Cover on oil skim, and pump to hazardous waste tank	2,025	-	No sealant around the area. MPC indicated maintenance work completed several days prior, and expect to seal soon
API #1 OWS	NW Cover on next to back bay	680	-	No sealant or gasket on the cover plate to the valve
Stormwater Sump	Cover plate #1 for pump within the main cover of the sump	600	-	None
Stormwater Sump	Cover plate #2 within the main cover the sump	1,900	-	No sealant around the area around cover plate.
Stormwater Sump	Cover plate #3 within the main cover the sump	600	-	No sealant around the area around cover plate.

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Stormwater Sump	Cover plate seam	800	-	Caulk cracked on seam.
Stormwater Sump	Cover plate at the 3 rd seam from the west side of the sump	10,000	-	Cover warped open with no caulk or seal intact.
Stormwater Sump	Cover plate #4 within the main cover the sump	1,964	-	None
Stormwater Sump	Cover plate at the 1 st seam from the east side of the sump	1,591	-	None
API #2 OWS	Access manway (inner ring) on the west end (Nearest Tag # 60-2239-01)	1,600	-	None
API #2 OWS	Access manway (outer ring) on the west end (Nearest Tag # 60-2239-01)	700	800	None
API #2 OWS	Access manway on east side	3,021	-	On handle not closed to the access door
API #2 OWS	Access manway on east side	1,306	-	On seal to manway
AIS3 Sump	Cover of pump within the main cover of the sump	729	-	Opening to atmosphere from a pinhole
API #1 OWS Effluent Sump	Cover, middle of east end of sump	1,600	-	None
API #1 OWS Effluent Sump	Cover, middle of sump	10,000	-	Cover was warped open and visible steam coming out.
API #1 OWS Effluent Sump	Cover, middle of sump	1,800	-	Cover was actively bubbling.
API #1 OWS Effluent Sump	Cover, middle of sump	650	-	Middle of the sump near pump #2
PH-60-38	Drain	-	-	Oil present, MPC added water upon identification