

A9831
mwillg

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

A983136350	
FACILITY: MARATHON PETROLEUM COMPANY LP	SRN / ID: A9831
LOCATION: 1300 S FORT ST, DETROIT	DISTRICT: Detroit
CITY: DETROIT	COUNTY: WAYNE
CONTACT: Ian Ladomer , Environmental Supervisor	ACTIVITY DATE: 09/07/2016
STAFF: Jorge Acevedo	COMPLIANCE STATUS: Compliance
SUBJECT: MBR	SOURCE CLASS: MEGASITE
RESOLVED COMPLAINTS:	

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
INSPECTION REPORT

COMPANY NAME :Marathon Petroleum Company-
 FACILITY ADDRESS :1300 S. Fort Street, Detroit, MI 48217
 STATE REGISTRAT. NUMBER :A9831
 SIC CODE :2911
 EPA SOURCE CLASS : A
 EPA POLLUTANT CLASS : Mega Site
 LEVEL OF INSPECTION : :PCE
 DATE OF INSPECTION :09/7/16
 TIME OF INSPECTION : 11:30 AM
 DATE OF REPORT : 9/13/16
 REASON FOR INSPECTION : Partial Compliance Inspection.
 INSPECTED BY : Jorge Acevedo
 PERSONNEL PRESENT :Anita Wills
 FACILITY PHONE NUMBER :
 FACILITY FAX NUMBER :

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INSPECTION NARRATIVE:

On September 7, 2016, I conducted a partial compliance evaluation of the Marathon Petroleum Refinery. The focus of the inspection was the Membrane Biological Reactor(MBR). I arrived at 10:30 AM and met with Anita Wills. We went into Ms. Wills' office and explained the purpose of the inspection. Ms. Wills gave a brief description of the MBR process. The MBR air permit was issued in January 2014. The MBR began operation in November 2015. The MBR replaces the carbon unit system that was used to treat wastewater prior to discharging to the city sewer. I asked for records required by the permit to install. Ms. Wills provided the records. After our discussion, we proceeded to go into the Refinery. We drove to Complex 1 and checked in with Operations. Ms. Wills then accompanied me to the part of the facility where the MBR was operating. Skies were cloudy and winds were out of the Southwest during the time of the inspection. Odors were minimal onsite and were not detected outside of the facility. Ms. Wills showed the beginning of the process. Wastewater exits the Induced Gas Flootation units and is piped towards the MBR. Ms. Wills pointed out the area that once housed the carbon units. I verified that they were no longer onsite. The wastewater then enters an anoxic zone, lack of dissolved oxygen, and is mixed to remove nitrogen content. It is then sent into aeration basins. Aeration encourages the microbial activity in removing organic waste. Foam is typical in this area. Ms. Wills showed me a meter which read Dissolved Oxygen and Temperature. Dissolved Oxygen was at 2.60 ppm and 3.28ppm. Temperatures were at 93.8 degrees Fahrenheit and 34.3 degrees Celsius. After the aeration basins, the water enters ultrafine filtration. The Refinery uses 4 or 5 cartridges consisting of ultrafine membranes to remove remaining solids. The water is then skimmed

off, sent into a thickener, and then centrifuged. An employee was present at the time of my inspection taking a sample of the wastewater after the filtration process. The water appeared to be clear. After the water is centrifuged, solids are sent for waste disposal and water is sent to a pulse tank before discharging to the city sewer. After observing the process, we checked out of the Refinery and drove back to Ms. Wills' office. I received additional records and ended the inspection at 11:47AM.

FACILITY BACKGROUND

The Detroit Marathon Petroleum Company Refinery (MPC), situated in the southwest of Detroit, processes approximately 115,000 barrels per day (B/D) of crude oil which is refined into a product mix of approximately 50% gasoline, 25% fuel oil, 18% Asphalt, and 7% other products. The makeup of this production will vary depending on the type of crude used as charge stock. The finished products leave the facility via truck, lake tanker, railroad car, or pipeline. The refinery operates 24 hours per day, 7 days per weeks, and 52 weeks per year. The refinery has been operating at this site for more than 50 years. MPC Detroit refinery is both a PSD and ROP major facility.

COMPLAINT/COMPLIANCE HISTORY

The MPC refinery has been issued two violation notices (VN) over the past twelve months. The MPC refinery has been a source of odor complaints during past years. All complaints have come from neighboring homes in southwest Detroit and the city of Melvindale located to the west.

OUTSTANDING CONSENT ORDERS

United States of America (Civil No. 01-40119) lodged May 11, 2001 and entered August 28, 2001. The County of Wayne, Michigan and the States of Minnesota and Louisiana are Plaintiff-Intervenors.

The other is with the Department of Justice and U.S. EPA (Civil No. 12-11544) lodged on April 5, 2012 and entered August 30, 2012.

OUTSTANDING LOVs

None

OPERATING SCHEDULE/PRODUCTION RATE

The MPC Detroit Refinery operates 24 hours per day, 7 days per week and 52 weeks per year, or 8760 hours per year. The crude unit raw crude oil capacity is nameplated at 115000 barrels per day; the actual crude oil throughput varies depending upon type.

PROCESS DESCRIPTION

Marathon's Wastewater Treatment Unit handles all wastewater generated by the desalting of crude oil. The MBR provides tertiary treatment of wastewater prior to discharging to the city sewer.

EQUIPMENT AND PROCESS CONTROLS

MBR consists of anoxic basins, aeration basins, membrane filtration, and centrifuging.

APPLICABLE RULES/PERMIT CONDITIONS:

Marathon Petroleum Company is subject to the ROP because they are major for NSR and Title V. They are a major source for Hazardous Pollutants. ROP-MI-A9831-2012 was issued on September 27, 2012.

The MBR is covered by PTI 157-13.

Permit Conditions are evaluated in Appendix A:

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EU-MBR	Membrane biological reactor (MBR) activated sludge process for wastewater pre-treatment.	Date of PTI	NA
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.			

The following conditions apply to: EU-MBR

DESCRIPTION: Membrane biological reactor (MBR) activated sludge process for wastewater pre-treatment.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Compliance Determination
1. Benzene	0.238 tpy ¹	12-month rolling time period ^A	EU-MBR	Compliance- Emission records were provided and less than .05 TPY.
2. VOC	7.61 tpy	12-month rolling time period ^A	EU-MBR	Compliance- Emission records were provided and less than 1 TPY.
A 12-month rolling time period as determined at the end of each calendar month.				

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. (R 336.1205(3), R 336.1225, R 336.1702)

Compliance- Records were provided upon request as well as emission calculations.

2. The permittee shall monitor and record, in a satisfactory manner, the EU-MBR wastewater influent flow rate on a daily basis. (R 336.1205(3), R 336.1225, R 336.1702)

Compliance- Effluent from the IGF is measured and is equal to the influent flow rate for the MBR.

3. The permittee shall monitor and record, in a satisfactory manner, the benzene and VOC concentration in the EU-MBR wastewater influent on a monthly basis. (R 336.1205(3), R 336.1225, R 336.1702)

Compliance- Benzene sampling and VOC sampling is done monthly. Records were provided for some of the sampling events.

4. The permittee shall keep, in a satisfactory manner, records of the dimensions of the splitter box, anoxic basins, and aeration basins and shall use these dimensions when calculating the emissions rates from EU-MBR. (R 336.1205(3), R 336.1225, R 336.1702)

Compliance- Records of the dimensions for the splitter box, anoxic basins, and aeration basins were provided.

5. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period, as determined at the end of each calendar month, records of the benzene and VOC emission rates from EU-MBR on file at the facility and make them available to the Department upon request. (R 336.1205(3), R 336.1225, R 336.1702)

Compliance- The emission rates are calculated on a monthly basis and were provided to the AQD.

6. The permittee shall notify the Department if a change in land use occurs for property classified as industrial or as a public roadway, where this classification was relied upon to demonstrate compliance with Rule 225(1) for benzene emissions from EU-MBR. The permittee shall submit the notification to the AQD District Supervisor, within 30 days of the actual land use change. Within 60 days of the land use change, the permittee shall submit to the AQD District Supervisor a plan for complying with the requirements of Rule 225(1). The plan shall require compliance with Rule 225(1) no later than one year after the due date of the plan submittal.1 (R 336.1225(4))

NA- No change in land use has occurred since the air permit was issued.

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

N/A

MAERS REPORT REVIEW:

Pollutant	2015 Emissions(TPY)(Total Source)
CO	166
NOx	401
PM	75
Sox	192
VOC	370

FINAL COMPLIANCE DETERMINATION:

Based on the inspection and a review of the records, the facility appears to be in compliance.

NAME 

DATE 9-13-16

SUPERVISOR W.M.