GW - 040

RCRA CORRESPONDENCE

2021

Certified Mail - Return Receipt Requested

September 8, 2021

Mr. Levi Saucedo
Terminal Manager
Western Refining Southwest, Inc.
Bloomfield Terminal
#50 County Road 4490
Bloomfield, New Mexico 87413

RE: DISAPPROVAL
RIVER TERRACE ANNUAL REPORT VOLUNTARY BIOVENTING/AIR SPARGING SYSTEM JANUARY – DECEMBER 2020
BLOOMFIELD TERMINAL (FORMER BLOOMFIELD REFINERY)
WESTERN REFINING SOUTHWEST, INC. - BLOOMFIELD TERMINAL
EPA ID# NMD089416416
HWB-WRB-21-001

Dear Mr. Saucedo:

The New Mexico Environment Department (NMED) has received the Marathon Petroleum Company dba Western Refining Southwest, Inc., Bloomfield Terminal (Respondent) *River Terrace Annual Report Voluntary Bioventing/Air Sparging System January – December 2020* (Report), dated March 30, 2021. NMED has reviewed the Report and hereby issues this Disapproval with the following comments.

Comment 1
NMED has observed an inconsistency with the page numbers in the Report. The page numbers in the hard copy and the page numbers in the electronic copy of the Report do not match. It appears that the blank pages included with the page numbers in the hard copy are not included in the electronic copy. Include the blank pages in the revised electronic Report to be consistent with the number of pages in the hard copy of the Report.

Comment 2
In the Executive Summary (Groundwater Monitoring), page ES-1, paragraph 2, the Respondent states that the Total Petroleum Hydrocarbons (TPH) Diesel Range Organics (DRO)

concentrations in the groundwater samples collected from temporary piezometers (TP)-5, TP-8, TP-9, dewatering well (DW)-3, and the collection gallery exceeded the screening level of 0.0858 mg/L, and the TPH Gasoline Range Organics (GRO) concentrations in the groundwater samples collected from temporary piezometers TP-5, TP-6, TP-8, TP-9, dewatering well DW-3, and the collection gallery exceeded the screening level of 0.0101 mg/L in 2020. However, according to Table 3 (Groundwater Monitoring Summary), page 5 of 7, the TPH-DRO and GRO concentrations in the groundwater samples collected from dewatering well DW-2 are recorded as <1.0 mg/L and <0.050 mg/L for the May 2020 event, respectively, where the Limit of Quantitation (LOQ) values exceed the applicable screening levels. In addition, the LOQ values of TPH Motor Oil Range Organics (MRO) in all groundwater samples exceeded the screening level of 0.0858 mg/L for the 2020 monitoring event. It is impossible to demonstrate whether these analytes are absent or present at concentrations above the applicable screening levels. All analytes whose LOQ values are higher than the applicable screening levels are considered data quality exceptions and must be identified as such in the appropriate sections of the Report. Revise the Report accordingly.

Comment 3

In the Executive Summary, page ES-2, paragraph 3, the Respondent states, "[r]esults from the analytical sampling of the GAC system show signs of breakthrough in the lead GAC unit. Additionally, one sample from the outlet of the lag vessel exceeded the screening level of 0.0858 mg/L for TPH DRO (1.3 mg/L). No additional sample results from the outlet of the lag vessel were above the method detection limit. One GAC vessel was changed out on August 20, 2020." According to Table 5 (GAC Filter Monitoring Data Summary), page 1 of 1, the xylene concentrations in the samples collected from the effluent of the lead GAC unit are recorded as 2,900 µg/L in April 22, 2020, and <7.5D µg/L in June 17, 2020. There appears to be a discrepancy with the analytical data reported for the samples collected from the effluent of the lead GAC unit. According to the June 2020 result, the xylene concentration from the effluent of the lead GAC unit significantly decreased prior to the August 20, 2020 GAC vessel change out. Explain the cause of the reduction in the constituent concentrations from the June 2020 sampling event in the revised Report.

Comment 4

In the Executive Summary, page ES-2, paragraph 4, the Respondent states, "[t]he consistent pressure affirms that there exists an even distribution of air throughout the biovent / air sparging area of influence. However, in 2020 there were no air pressure readings taken from the air injection system due to COVID-19 travel restrictions." If air pressure readings were not collected in 2020 during the normally scheduled monitoring event because of COVID-19 travel restrictions, it would not be possible to conclude that the air pressure readings were consistent or how air was distributed during that time period. However, Table 4 (Soil Gas Monitoring Data Summary), page 1 of 1, reports air pressure readings collected in August 2020 contradicting the statement that no air pressure readings were collected in 2020. Clarify the statement in the revised Report.

Comment 5
In Section 1.1 (Site Location and Description), page 3, paragraph 4, the Respondent states, "[d]ewatering well DW-3 was installed as part of the most recent optimization activities and is constructed with a 4-inch machine slotted polyvinyl chloride (PVC) well casing that is placed inside a 5.5-inch diameter steel pipe. The steel pipe is packed with pebbles, allowing for better groundwater pumping efficiency." The steel pipe may be potentially obstructing groundwater flow. In addition, unless stainless steel was used, the steel may corrode over time. Provide a construction diagram for dewatering well DW-3 with the revised Report or cite a reference to the construction diagram in the response letter.

Comment 6
Section 2 (Background), page 8, paragraph 3, summarizes the events and activities conducted in 2020 but did not discuss the replacement of the GAC vessel. However, the *Executive Summary* states that the GAC vessel was changed on August 20, 2020. Section 2 incudes the statements that the GAC vessels were replaced in 2007 and 2012. Include the statement that the GAC vessel was replaced in 2020 in the appropriate sections of the revised Report.

Comment 7
Section 3.1.2 (Groundwater Field Parameters), page 9, paragraph 4, states, "[g]roundwater field parameters (temperature, pH, conductivity, dissolved oxygen [DO], and oxidation reduction potential [ORP]) were recorded during the low-flow well purging procedure prior to collecting groundwater samples. Groundwater field parameters were collected from TP-5, TP-6, TP-8, TP-9, DW-3, MW-49, and the groundwater collection gallery." According to Table 3 (Groundwater Monitoring Summary), page 5 of 7, dewatering well DW-2 was also sampled in May 2020. However, Table 2 (Groundwater Field Measurements), page 4 of 5, does not include field parameter readings for dewatering well DW-2. Explain why groundwater field parameters were not collected from dewatering well DW-2 or include the data, if available, in the revised Report.

Comment 8
Section 3.1.3 (Groundwater Sampling), page 9 through 10, states, "[g]roundwater samples were collected from TP-5, TP-6, TP-8, TP-9, DW-3, MW-49, and the collection gallery. Groundwater samples were submitted to Hall Environmental Analytical Laboratory and analyzed for the following constituents:

- Volatile Organic Compounds – BTEX and MTBE by U.S. Environmental Protection Agency (EPA) Method 8260;
- TPH – GRO by EPA Modified Method 8015D;
- TPH – DRO by EPA Modified Method 8015D;
- TPH – MRO by EPA Modified Method 8015D; and
- Total lead by EPA Method 200.8.

A summary of the groundwater analyses is provided in Table 3 and summarized on Figure 5. The analytical reports are provided as Appendix B." Address the following comments:

a. The laboratory reports included in Appendix B (Analytical Reports) indicate that volatile organic compounds (VOCs) other than BTEX and MTBE were detected in the groundwater samples (e.g., 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, acetone, 2-butanone, isopropylbenzene, 4-isopropyltoluene, n-butylbenzene, n-propylbenzene, and sec-butylbenzene in the sample collected from the collection gallery). Comment 7 of the NMED's *Approval with Modifications*, dated July 2, 2020, states, "[r]eport analytical results for all volatile organic compounds listed in EPA Method 8260 in future reports." Accordingly, all detections must be reported in an analytical data summary table (revised Table 3 or a separate table) and the concentrations must be compared with the applicable screening levels.

b. It is no longer necessary to include a hard copy of the laboratory reports in the Report. Include an electronic copy of the laboratory reports in future submittals.

c. Although groundwater samples were collected from dewatering well DW-2, the fact was not stated. Correct the statement for accuracy in the revised Report.

Comment 9

Section 3.2.1 (Pressure Readings), page 10, paragraph 3, states, "[p]ressure readings from BV-3, Air Sparging Line B, and the Main Air Blower exceeded the capabilities of the magnehelic gauge and were collected using a dial pressure gauge." Provide the measurement range that is applicable to the magnehelic and dial pressure gauge in the revised Report. In addition, Appendix A (Field Methods) only provides details regarding groundwater sampling (e.g., equipment, procedures) and does not provide any information regarding soil gas sampling (e.g., equipment, procedures). Include the information in the revised Report.

In addition, Table 4 (Soil Gas Monitoring Data Summary) indicates that the pressure readings widely vary among the bioventing wells and air sparging lines. Explain the causes of the disparity in the pressure readings in the revised Report. Indicate the gauge types used to measure the pressure readings for each well in the revised Table 4.

Comment 10

In Section 3.2.2 (Soil Gas Field Parameters), page 10, paragraph 4, the Respondent states, "DW-3 was not sampled. The pump is wedged in the well and could not be removed." Dewatering well DW-3 is the only well located south of the air sparging system that is capable of evaluating the southern extent of the influence and must be included in future soil gas sampling events. The Respondent must propose a method of sampling that will be capable of collecting representative soil gas samples from this well. Resolve the issue to continue collecting samples and reporting data from dewatering well DW-3 in the future. No revision required.

Comment 11

Section 3.2.3 (Soil Gas Sampling), page 10, paragraph 5, states, "[s]oil gas samples were collected from sample locations TP-5, TP-6, TP-8, BV-1, BV-3, BV-4, BV-5, BV-6, DW-2, and MW-48." Bioventing well BV-1, BV-3, BV-4, BV-5, and BV-6 are the air injection wells. According to Table 4 (Soil Gas Monitoring Data Summary), page 1 of 1, the purge volumes for bioventing wells range from 1.07 to 1.25 liters. Based on the well construction logs and the purge volume well ranges, the casing volumes of the bioventing wells appear to exceed the purge volumes. As a result, the samples collected from the bioventing wells may not be representative of soil gas from the formation since the casing may be filled with atmospheric air. Explain how the purge volumes are sufficient for the bioventing wells if the casing volume exceeds the purge volumes in the revised Report.

Comment 12

Section 3.3.1 (GAC Sampling), page 11, paragraph 1, states that the, "[e]xtracted groundwater from the active dewatering wells and collection gallery is treated prior to discharging to the raw water ponds, located within the east portion of the terminal." According to Figure 2 (Facility Site Plan), the distance from the River Terrace to the raw water ponds exceeds 1,800 feet; however, the Respondent does not indicate how the treated water is transported from the River Terrace to the raw water pods. Include a statement that explains how the treated water is transported from the River Terrace to the raw water ponds in the revised Report. In addition, the benzene concentration in the sample collected from the lag GAC filter effluent samples was detected at 3.4 µg/L in December 2020. The wastewater that contained benzene was discharged to the raw water ponds. Explain whether constituents are further tested or treated in the raw water ponds in the response letter.

Comment 13

In Section 3.3.1 (GAC Sampling), page 11, paragraph 3, the Respondent states, "detected concentrations at the inlet of the GAC filters exceeded their respective screening levels in the third quarter for benzene (65 µg/L), ethylbenzene (920 µg/L), xylenes (3,400 µg/L), TPH-DRO (0.73 mg/L), and TPH-GRO (15 mg/L). These constituents were non-detectable in the fourth quarter of 2020." It is not clear why there was a sudden reduction in the constituent concentrations between the third and fourth quarters of 2020. The influent of the GAC unit is not treated by the GAC unit; therefore, it would appear that the constituent concentrations in the influent samples from the fourth quarter would likely be similar to the concentrations detected in the samples collected in the third quarter of 2020. Discuss the sudden reduction of the constituent concentrations in the revised Report.

Comment 14

In Section 3.3.1 (GAC Sampling), page 11 through 12, the Respondent states, "[r]eported detectable concentrations exceeding applicable screening levels (in addition to the constituents previously discussed) are as follows:

- GAC Inlet – 2nd Quarter – 1,3,5-Trimethylbenzene (120 µg/L), exceeding the screening level of 60 µg/L (EPA Regional Screening Level [RSL] Tap Water);
- GAC Lead – 2nd Quarter – 1,2,4-Trimethylbenzene (680 µg/L) exceeding the screening level of 56 µg/L (EPA RSL Tap Water);
- GAC Lead – 2nd Quarter – 1,3,5-Trimethylbenzene (73 µg/L), exceeding the screening level of 60 µg/L (EPA RSL Tap Water);
- GAC Lead – 2nd Quarter – 1,2,4-Trimethylbenzene (580 µg/L) exceeding the screening level of 56 µg/L (EPA RSL Tap Water);
- GAC Lead – 2nd Quarter – Naphthalene (130 µg/L) exceeding the screening level of 30 µg/L (NMED Tap Water);
- GAC Inlet – 3rd Quarter – 1,3,5-Trimethylbenzene (62 µg/L), exceeding the screening level of 60 µg/L (EPA RSL Tap Water); and
- GAC Inlet – 3rd Quarter – 1,2,4-Trimethylbenzene (550 µg/L) exceeding the screening level of 56 µg/L (EPA RSL Tap Water)."

It appears that the exceedances for some of the other constituents are not included in the statement. The laboratory reports included in Appendix B indicate that VOCs other than the above listed constituents exceeded the applicable screening levels (e.g., 160 µg/L naphthalene in the GAC Inlet – 2nd Quarter sample). All detections whether reported above or below the applicable screening levels, must be identified and compared with the applicable screening levels in appropriate tables. Revise the Report accordingly.

Comment 15

In Section 3.3.2 (Aeration System Monitoring), page 12, paragraph 3, the Respondent states, "[t]he air pressure reading had decreased from 3 psi in 2018 to 1 psi when checked in August 2019. However, an air leak was repaired in December 2019 and the pressure was restored to 3.0 pounds per square inch gauge (psig)." The Respondent did not provide a discussion about the 2020 pressure readings. In addition, the air pressure measurements may or may not have been collected according to the Report (see Comment 4). Include a discussion regarding the pressure readings collected in 2020 or explain why the pressure readings were not collected in the appropriate section(s) of the revised Report.

Comment 16

Section 4.1.1 (Groundwater Monitoring), page 13, bullets 10 and 11, states, "[b]enzene was detected at a concentration of 0.0064 mg/L in the groundwater sample collected at the collection gallery, which exceeds the screening level of 0.005 mg/L," and "[t]otal xylenes were detected at a concentration of 0.900 mg/L in the groundwater sample collected at the collection gallery, which exceeds the screening level of 0.62 mg/L." According to Table 5 (GAC Filter Monitoring Data Summary), page 1 of 1, the highest benzene and xylene concentrations in the samples collected from the GAC-Inlet are reported as 65 P µg/L and 3,400 P µg/L, respectively. Although the constituent concentrations at the influent of the GAC unit would be diluted with less contaminated extracted groundwater and expected to be lower, they appear

to be more elevated than those in the groundwater samples directly collected from the wells. Explain why the constituent concentrations in the samples collected from the GAC-Inlet are higher than the concentrations detected in groundwater samples obtained from the wells in the revised Report.

Comment 17

In Section 4.1.2 (Bioventing/Air Sparging Performance Monitoring), page 15, paragraph 1, the Respondent states, "[t]he decreasing concentrations in samples collected at the GAC inlet, as well as in individual wells, also shows the effectiveness of the system since installation." Table 5 (GAC Filter Monitoring Data Summary) presents data collected in 2020 but previous years' data are not presented; therefore, the trend of the constituent concentrations whether increasing or decreasing at the GAC inlet cannot be evaluated. In order to evaluate the trend, include the data collected from the past three monitoring events at a minimum. Revise the table accordingly.

Comment 18

According to Table 1 (Fluid Levels), the ground surface elevations for all temporary piezometers are indicated as "Not Available (NA)". Comment 5 of the NMED's *Approval with Modifications,* dated July 2, 2020, states, "[t]he data presented in Table 1 does not allow NMED to evaluate the appropriateness of the screened intervals for separate phase hydrocarbon (SPH) measurement. All data reported in feet below TOC must be converted to feet bgs in future reports for consistency. Conduct an elevation survey, if necessary." The water level and screened interval elevations for dewatering and monitoring wells were provided in Table 1 and the screened intervals of these wells were found to intercept the water table; therefore, were determined to be appropriate for SPH measurement. However, the information was not provided for the temporary piezometers; therefore, NMED cannot evaluate the appropriateness of the screened intervals. Conduct an elevation survey for all temporary piezometers and report the ground surface elevations for temporary piezometers in the 2021 Annual Report. No revision to this Report is necessary.

Comment 19

Table 4 (Soil Gas Monitoring Data Summary) provides the data collected in 2020. However, it is not possible to evaluate the effectiveness of the remediation system from one data point collected in 2020. In order to evaluate the effectiveness, the 2020 data must be compared with previous data. Include the data collected from the past three sampling events, at a minimum in the revised table and discuss whether or not the remediation system is effectively working in the appropriate sections of the revised Report.

Comment 20

Table 4 (Soil Gas Monitoring Data Summary) lists some sample locations that are not identified by the figures included in the Report (e.g., FB-1). Include the sample locations in the figures in the revised Report.

Comment 21

Table 5 (GAC Filter Monitoring Data Summary) contains typographical errors. The screening levels for ethylbenzene, xylene, and MTBE are not correctly presented in Table 5 (e.g., irrelevant dates are presented rather than numerical screening values). Correct the typographical errors in the revised Report. In addition, it is not clear whether the "xylene" listed in Table 5 is the concentration of total xylenes or an isomer (m-, o-, or p-xylene). Provide a clarification in the revised Report and a note in Table 5.

Western must address all comments in this Disapproval and submit a revised Report no later than **November 1, 2021**. The revised Report must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, Western must submit a redline-strikeout version that identifies all changes and edits to the revised Report and a clean version of the revised Report.

If you have any questions regarding this letter, please contact Michiya Suzuki at (505) 690-6930.

Sincerely,

for

Ricardo Maestas
Acting Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
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