NEW MEXICO
ENVIRONMENT DEPARTMENT

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 4, 2021

John Moore
Environmental Superintendent
Western Refining, Southwest Inc., Gallup Refinery
92 Giant Crossing Road
Gallup, New Mexico 87301

RE: APPROVAL WITH MODIFICATIONS
[REVISED] ANNUAL GROUNDWATER MONITORING REPORT GALLUP REFINERY – 2019
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-20-013

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *[Revised] Annual Groundwater Monitoring Report Gallup Refinery - 2019* (Report), dated March 31, 2021, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Approval with Modifications with the attached comments. The Permittee must address all comments in the attachment to this letter and submit a response letter and replacement pages no later than **August 31, 2021**.

This approval is based on the information presented in the document as it relates to the objectives of the work identified by NMED at the time of review. Approval of this document does not constitute agreement with all information or every statement presented in the document.

If you have questions regarding this Approval with Modifications, please contact Michiya Suzuki of my staff at 505-476-6046.

Sincerely,

Dave Cobrain
Program Manager
Hazardous Waste Bureau

cc: L. Tsinnajinnie, NMED HWB
M. Suzuki, NMED HWB
T. McDill, OCD
L. King, EPA Region 6 (6LCRRC)

File: Reading File and WRG 2021 File

Attachment

Comment 1

In the response to NMED's Disapproval Comment 4, the Permittee states, "[w]here the laboratory reporting limit is greater than [the] applicable standard has been noted in the Report. The reporting limit that the laboratory was able to meet was greater than the applicable standard due to instrument limitations." The sections of the Report where the pertinent discussion is provided must be identified in the response.

Comment 2

In the response to NMED's Disapproval Comment 6, the Permittee states, "[b]ased on recent fluid measurements in the East and West LDUs, it appears that groundwater is leaking through the secondary containment and into the primary containment. The #2 API unit is now non-operational and the fluid level is approximately 13 to 15 feet below top of casing. The West LDU water level is within a few feet of the top of casing. If the API separator was leaking, it would be expected that the fluid levels would be equivalent. In addition, internal inspections have been completed of the API Unit and no leaks were identified. Upgrades to the wastewater treatment system were not completed prior to the refinery becoming indefinitely idled and at this time MPC does not plan to upgrade the wastewater treatment system." The statement is unclear. In a response letter, address the following issues:

a. The relationship between the NAPIS's secondary and primary containments is not clear. Provide a figure of the NAPIS that depicts the secondary and the primary containment systems and explain how each is designed to prevent or contain leaks from the NAPIS.

b. Clarify whether the #2 API unit refers to the East Bay of the NAPIS. The nomenclature used in the response must be consistent with the context of the Report; otherwise, provide a figure of the NAPIS that identifies each component of the NAPIS.

c. The fluid level measured as approximately 13 to 15 feet below top of casing (toc) is presumably referring to the fluid level in the East LDU. According to the *API Detector Leak Detection Units*, dated August 5, 2013, the total depth of the East LDU is 11.82 feet. The reported fluid level exceeded the total depth of the East LDU. Provide clarification in the response letter.

d. The Permittee states, "[t]he West LDU water level is within a few feet of the top of casing. If the API separator was leaking, it would be expected that the fluid levels would be equivalent." The fluid levels in the latter sentence presumably refer to the fluid levels in the East and West Bays. The former sentence references the fluid level in the LDU. If the fluid level in the latter sentence refers to the fluid level in the LDUs, the statement would be incorrect because each LDU was independently installed on the secondary containment wall of the respective unit. Provide clarification in the response letter.

e. The Permittee states, "[b]ased on recent fluid measurements in the East and West LDUs, it appears that groundwater is leaking through the secondary containment and into the primary containment," and "[i]n addition, internal inspections have been completed of the API Unit and no leaks were identified." The statement is contradictory. Resolve the discrepancy in the response letter. In addition, the West LDU water level is measured within a few feet of the top of casing. The measurement indicates that the West Bay is leaking. Repair the leak or propose to install recovery wells adjacent to the West Bay of the NAPIS to capture the leaking wastewater.

f. Since the NAPIS will not be upgraded, the Permittee must repair the leak or propose to install recovery wells adjacent to the West Bay of the NAPIS as directed by Comment 6 of the NMED's Disapproval. If the Permittee elects to repair the leak on the West Bay, the East Bay must not be used during the repair since previous data collected from the East EDU indicates that the East Bay is also leaking. The East Bay also must be repaired prior to use.

Comment 3

In the response to NMED's Disapproval Comment 16, the Permittee states, "[t]he gauging data from the December 3, 2019 sampling event is not available, however, the monitoring well completion log from October 17, 2019 is provided in Appendix A. The gauging data from OW-58A from the completion date is included in Table 9.1." Explain why the gauging data was not collected during the December 3, 2019 sampling event in the response letter.

In addition, well OW-58A was installed in October 17, 2019 and the depth to water gauged on the installation date (October 17, 2019) is recorded approximately four feet lower than that of the twin well OW-58. The lower groundwater elevation may be the result of slow recharge and a lack of groundwater equilibration. Therefore, the October 17, 2019 gauging data may not be consistent with the future data. Remove or qualify the gauging data, as appropriate, from all future reports.

Comment 4

In the response to NMED's Disapproval Comment 17, the Permittee states, "[t]he analytical tables in Section 8 have been revised to list wells that had detections of SPH during 2019." Table 8.5 still did not list wells OW-61 and OW-65 where SPH was detected. These wells must be included in analytical tables and the detection of SPH must be indicated. Revise the tables accordingly. This comment applies to all analytical tables where wells with SPH are not listed. Revise the tables and provide replacement pages.

Comment 5

In the response to NMED's Disapproval Comment 18, the Permittee states, "[f]luoride ions in groundwater may be naturally occurring or may be the result of refinery activities. If elevated concentrations continue MPC will conduct an investigation to determine the source of the

fluoride." Describe the potential refinery fluoride sources and whether fluoride concentrations in the groundwater samples collected from well OW-64 decreased during the 2020 monitoring events. If an elevated fluoride level persisted in 2020, propose to submit a work plan to conduct an investigation to determine the source of the fluoride in the response letter.

Comment 6

In the response to NMED's Disapproval Comment 22, the Permittee states, "MPC requests clarification on the NMED comment on the portion stating EDC is below the screening level." To clarify, the New Mexico Water Quality Control Commission (WQCC) adopted revised regulations that listed 1,4-dioxane as a toxic pollutant on December 21, 2018. As such, the Permittee is required to analyze groundwater samples collected from all monitoring wells where chlorinated solvents have been detected in the past ten years for 1,4-dioxane using EPA Method 8270 Selective Ion Monitoring (SIM). Since the Permittee agreed to include 1,4-dioxane and EDB analyses using appropriate analytical methods for well OW-11 in the 2021 Facility-wide Groundwater Monitoring Work Plan, no response is necessary.

Comment 7

In the response to NMED's Disapproval Comment 23, the Permittee states, "[n]itrate/nitrite chemistry can be subject to several factors, including precipitation, variation in wastewater system influent, seasonal temperature increases (which may spur biological growth and reducing conditions), and pond depth." The nitrite concentrations in wastewater samples collected from the evaporation ponds (e.g., EP-7, EP-8, EP-9, EP-11) are generally one to two orders of magnitude higher than the nitrate concentrations. The data indicates the presence of highly reducing and anaerobic conditions in these ponds. Such anaerobic ponds may generate methane, unpleasant odor, and an acidic environment. In addition, aerated ponds would be more efficient to degrade organic matter. Evaluate whether aerobic conditions should be maintained by mechanical or diffused aeration equipment in these ponds and provide a discussion in the response letter.

Comment 8

In the response to NMED's Disapproval Comment 25, the Permittee states, "[p]esticides are not manufactured onsite and previous pond samples had no detections therefore, and any of pesticides [used] by the facility would be in compliance with manufacturers recommendations and would not constitute a waste. MPC will not be adding pesticides to EP-2 analysis for 2021." Bromomethane was also detected in the sample collected from outfall STP1 to EP-2 above the applicable standards during the fourth quarter of 2019; it appears that bromomethane is present at various locations in the Facility. Whether or not pesticides are manufactured onsite, bromomethane that may be associated with pesticides was detected from the samples at various locations. Since the Permittee asserts that the detection of bromomethane is not associated with pesticides, provide a discussion regarding the source of bromomethane and propose to investigate the source of bromomethane, if necessary, in the response letter.

Comment 9
In the response to NMED's Disapproval Comment 28, the Permittee states, "[t]he Executive Summary, page 8, has been revised in the Report." The pertinent revised sentence in the Executive Summary states, "[b]romoethane was detected in STP1 to EP-2 above the applicable standards during the 4th quarter of 2019." According to Table 8.16.2, the referenced compound is bromomethane rather than bromoethane. Correct the typographical letter in future reports.

Comment 10
In the response to NMED's Disapproval Comment 33, the Permittee states, "[t]he process of purging using a bailer frequently creates significant difficulties in stabilizing parameters within 10% as air and turbulence are added to the fluid each time the bailer enters the well. MPC suggests that after 3 well volumes have been extracted from a well, the well water will have been purged sufficiently to be collecting a sample representative of the aquifer and time further spent trying to stabilize parameters is not necessary. MPC will include this process in the 2021 Facility-wide Groundwater Monitoring Work Plan." The water entering the well is representative of the formation water; however, the water sample would not be representative of the formation water unless the sampling techniques are appropriate. In order to demonstrate that the sampling technique is appropriate, stabilization criteria for each sampling technique (e.g., bailer, low flow pump) must be established. Provide a discussion in the response letter.

Comment 11
In the response to NMED's Disapproval Comment 34, the Permittee states, "Table 2.1 has been included with the revised Report." However, Table 2.1 is not included in the Report. Provide the table with the response letter.

Comment 12
In the response to NMED's Disapproval Comment 39, the Permittee states, "[t]he analytical results have been highlighted blue in the tables to indicate where the analysis was only completed as a single value rather than separate results," and "MPC has coordinated with the lab to analyze the samples within 48 hours for nitrite and nitrate." It is not clear why the Permittee continues to report nitrate and nitrite analytical results as a single value for some wells although the issue associated with short holding time was resolved. The Permittee must report separate nitrate and nitrite analytical results in the future, as directed by previous comments.

Comment 13
In the response to NMED's Disapproval Comment 43, the Permittee states, "MPC will continue to monitor the process wells semiannually." According to Section 10, Table 1, *Gallup Refinery - 2019 Ground Water Monitoring Schedule,* wells PW-2 and PW-4 are required to be monitored quarterly and well PW-3 is required to be monitored every three years. Resolve the discrepancy and provide replacement pages.

Comment 14

In the response to NMED's Disapproval Comment 53, the Permittee states, "Table 8.8.2 has been revised. The mercury results have been changed from mg/L to µg/L so that the detections are appropriate for the results." Table 8.8.2 appropriately presents the mercury results with µg/L; however, other tables that present the mercury results were not revised and still present the values with mg/L. Revise all tables to report the mercury results with µg/L for consistency in future reports.