



Certified Mail - Return Receipt Requested



December 14, 2021

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

**RE: DISAPPROVAL
SWMU-1 CLOSURE PLAN
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
MCKINLEY COUNTY, GALLUP, NEW MEXICO
EPA ID # NMD000333211
HWB-WRG-21-016**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has completed its review of the Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery's (the Permittee) *SWMU-1 Closure Plan* (Closure Plan), dated September 30, 2021 and received September 29, 2021. NMED has determined that additional provisions are warranted to satisfy the closure performance standards as defined by 40 CFR § 265.111 (a), (b), and (c). NMED hereby issues this Disapproval with the following comments.

Comment 1

While reviewing the submittal, NMED found that some reference documents are not in NMED's administrative record file. In order for NMED to complete its review, all referenced documents must be included in NMED's administrative record. The following references are missing from the NMED's administrative record file.

- a. NMED, 2021. Response to Approval with Modifications, SWMU-1 Revised Investigation Report, Marathon Petroleum Company LP, Gallup Refinery (dba Western Refining Southwest, Inc) EPA ID# NMD000333211. April.
- b. Western Refining, 2009. Closure Aeration Lagoons, Western refining Company Southwest, Inc., Gallup Refinery, EPA ID # NMD000333211, HWB-GRCC-09-003.

SCIENCE | INNOVATION | COLLABORATION | COMPLIANCE

Regarding the first item listed above, the document was likely issued by the Permittee rather than NMED. The reference appears to contain a typographical error. Correct the error in the revised Plan, as appropriate, or provide an electronic copy of the referenced document. In addition, regarding the second item, it is not clear whether the document referenced as "*RPS JDC. 2009. Closure Plan Aeration Lagoons Gallup Refinery*" listed in Section 8.0 (References), page 34 of 34, second item, is an identical document. If so, remove one of the references from the revised Plan; otherwise, provide an electronic copy of the referenced document. The Permittee must submit an electronic version of the missing documents and/or correct the errors in the revised Closure Plan.

Comment 2

In the Executive Summary, page 2 of 34, paragraph 2, the Permittee States, "AL-1 and AL-2 wastes are classified as F-listed (F037/F038) hazardous waste as approved by the New Mexico Environment Department (NMED) on June 30, 2021 (Suzuki 2021)." The reference (Suzuki 2021) does not provide concurrence with the hazardous waste classifications. The reference rather provides concurrence to the *Response to Approval with Modifications, Response to Disapproval Investigation Work Plan Solid Waste Management Unit (SWMU) No. 1 Aeration Basin and SWMU No. 14 Old API Separator*, dated June 11, 2021. Cite a relevant reference or provide a clarification in the revised Closure Plan.

Comment 3

In Section 1.0 (Introduction), page 9 of 34, paragraph 5, the Permittee States, "[t]he AL-1 trench will protect both AL-1 and AL-2 by depressing the groundwater surface in the area to reduce the potential for impacted groundwater from contacting clean backfill." Separate phase hydrocarbons (SPH) have been detected in well GWM-1 adjacent to AL-2 since the third quarter of 2015. SPH is present on the groundwater table beneath SWMU-1. In addition, SPH has been detected in well NAPIS-1 located upgradient of SWMU-1. It is NMED's opinion that the SPH detected in well NAPIS-1 will likely migrate toward SWMU-1 in the future. The proposed groundwater interceptor trench may reduce influxes of SPH and contaminated groundwater; however, it may not be able to depress the water table sufficiently to completely eliminate the contact with backfill material. Furthermore, the trench may not adequately address potential issues associated with hydrocarbon vapors emitted from the groundwater beneath SWMU-1. The hydrocarbon vapors may affect backfill material in the future. Therefore, NMED recommends the installation of liners that are impermeable to both polar and non-polar compounds to prevent the backfill material from being contaminated to maintain the clean closure performance standard, if achievable. Propose to install liners on the excavation floor, if applicable, in the revised Closure Plan.

Comment 4

Sections 1.0 (Introduction), page 9 of 34, paragraph 6, and 3.0 (SWMU-1 History), page 16 of 34, paragraph 1 state, "EP-1 was determined to not be a listed waste but was sampled for characteristics," and "[b]ased on the waste investigation, EP-1 was confirmed as non-hazardous

(MPC 2021).” Based on the analytical data presented in the *Solid Waste Management Unit 1 Revised Investigation Report*, dated January 5, 2021, the Total Petroleum Hydrocarbons (TPH) concentrations in the soil samples collected from pond EP-1 exceeded the applicable soil screening levels and the soils in pond EP-1 appears to be contaminated at levels comparable to those in AL-1 and -2. It is not clear how the soils were classified differently between the Aeration Lagoons and pond EP-1. Comments 3 and 31 of NMED’s June 7, 2010 *Second Notice of Disapproval Corrective Measures Implementation Work Plan SWMU-1* state that F037 and F038 waste were likely discharged to EP-1 and EP-2 and the potential listed wastes that could be present in the soils resulting from the various releases to the Aeration Lagoons and EP-1 include D018, F037, F038, and K051 listed wastes. Propose to request a “no longer contained-in” determination to manage the soil removed from EP-1 during closure activities; otherwise, the EP-1 waste must also be treated as hazardous waste and all applicable sections of the Closure Plan must be revised.

Comment 5

Section 3.2 (Estimated Waste Capacity), page 16 of 34, bullets 1 through 3, and Section 5.2.3 (Waste Excavation), page 21 of 34, paragraph 3 state, “AL-1: Average depth 5.2 ft, surface area 13,789 square feet (ft²), volume 2,700 yds³. AL-2: Average depth 5.3 ft, surface area 23,211 ft², volume 4,500 yds³. EP-1: Average depth 5.3 ft, surface area 58,757 ft², volume 11,500 yds³, [and e]xcavation depth will be determined from field observations of a distinct color change in the clay liners of the ponds. This color change is anticipated to be accompanied by an abrupt change of contaminant concentrations, as documented in the SWMU-1 sampling results report (MPC 2021) and as summarized in Table 1.” Comment 4 of the NMED’s August 31, 2020 *Disapproval SWMU-1 Investigation Report* directed the Permittee to “propose to recollect soil samples for mercury analysis or propose to excavate to a depth below the historic water table for maximum soil removal (e.g., more than ten feet bgs) to address potential risk associated with mercury.” Potential contamination associated with mercury may not be identified visually and since the Permittee did not collect soil samples for mercury analysis, the proposed excavation depth must be extended to depths of the historic water table. In addition, NMED could not find evidence that the ponds were ever lined; therefore, a color change may not be observable beyond the change from sludge to native soils. Revise the Closure Plan accordingly.

Comment 6

In Section 4.3 (April 2021 Test Pits Investigation), page 18 of 34, paragraphs 1 through 3, the Permittee states, “[t]he Test Pit Investigation Report will be submitted to NMED under separate cover. Drill cuttings of the test pits were sampled for disposal and indicated non-hazardous soils [and n]o apparent influence was observed in the monitoring wells during the yield tests, which further indicated low transmissivity.” The *SWMU-1 Test Pit Installation Letter Report* was submitted on October 27, 2021; however, the results and conclusions of the test pit investigation discussed in the Closure Plan cannot be referenced or used to make decisions for closure activities because the letter report has not been approved by NMED. All supporting documents included in a closure plan must be approved by NMED. Remove the reference from

the revised Closure Plan and include the data directly to support the assertion in the revised Closure Plan. The letter report may be referenced if approved by the submittal of the Closure Plan revision.

Comment 7

In Section 4.3 (April 2021 Test Pits Investigation), page 18 of 34, bullet 2, the Permittee states, “[g]roundwater levels in wells and test pits surrounding SWMU-1 are generally below the level of the bottom of the sludge in ponds AL-1 and AL-2 (approximate depth of sludge is 5 to 6 ft as determined during SWMU-1 sludge sampling).” The statement is vague and must be clarified with more details about the groundwater level depths at SWMU-1. Provide the following information in the revised Closure Plan:

- a. The estimated average groundwater depths and elevations at ponds AL-1, AL-2, and EP-1;
- b. The average ground surface elevations at the berms and bottoms of ponds AL-1, AL-2, and EP-1; and
- c. The estimated sludge depths and elevations at ponds AL-1, AL-2, and EP-1

Figure 2-2 (SWMU 1 – AL-1 and AL-2 Cross Section) presents depiction of the cross section from NAPIS-1 to TP-1 to support the assertion; however, well GWM-1 located northwestern corner of AL-2 was not used in the cross section diagram. Include the data collected from well GWM-1 in the revised Closure Plan. In addition, the groundwater elevation at well GWM-1 must be referenced as a minimal depth of the excavation at the western boundary of AL-2 and EP-1 because SPH has been detected in well GWM-1. Include the provision in the revised Closure Plan.

Comment 8

In Section 4.3 (April 2021 Test Pits Investigation), page 18 of 34, bullet 3, the Permittee states, “[a]t a minimum, the seepage rate is likely low enough to control with standard excavation practices, such as a shallow diversion trench installed at the excavation bottom.” It is NMED’s opinion that the proposed trench may reduce influxes of SPH and contaminated groundwater; however, the trench may not be able to depress the water table sufficiently to completely eliminate the contact with backfill. See Comment 3 above.

Comment 9

In Section 5.1 (Dewatering SWMU-1), page 19 of 34, paragraph 4, the Permittee states, “spent zeolite catalyst is available and may be utilized as an adsorbent material if needed. Analytical characterization data for this material is presented in Appendix B.” The spent zeolite catalyst may be used to stabilize the waste to be transported to the permitted Treatment, Storage, and Disposal Facility (TSDF), as approved by the TSDF. However, Appendix B (Zeolite Catalyst

Characterization Data) indicates that the concentrations of sulfate, Total Petroleum Hydrocarbons (TPH) diesel range organics (DRO), and gasoline range organics (GRO) in the material are recorded as 12,000, 21, and 24 mg/kg, respectively. NMED is concerned that these constituents may leach into groundwater if the spent zeolite catalyst is used to stabilize the excavation floor prior. Therefore, the Permittee must propose other adsorbent materials to stabilize the excavation floor that do not have the potential to leach constituents into the groundwater, if warranted. Revise the Closure Plan accordingly.

Comment 10

Section 5.2.2 (Auxiliary Site Preparation), page 20 of 34, paragraph 4, and Section 5.5.1 (Backfill Sampling), page 28 of 34, paragraph 7 state “[t]he Refinery’s onsite borrow pit will be utilized to source backfill soil [and is] anticipated to be the currently existing borrow pit which provides a source of clay-rich soil.” Groundwater and SPH were observed on the surface of the Borrow Pit area in 2020. Therefore, the Refinery’s onsite borrow pit must not be utilized as a source of backfill material. Clean backfill material must be used to backfill the excavation. Revise the plan accordingly.

Comment 11

In Section 5.2.4 (Berm Excavation), page 21 of 34, paragraph 4, the Permittee states, “the upper 1.5 ft of berm soil will be excavated and segregated for composite soil testing to determine suitability for use as clean backfill. Soil will be tested for the following constituents: VOCs, SVOCs, and metals at a frequency of one sample for every 100 yd³ of segregated material.” The March 31, 2020 *SWMU-1 Investigation Report* indicates that the berm soils may also be contaminated with TPH-GRO, DRO and motor oil range organics (MRO). The berm soil samples must also be analyzed for TPH-GRO, -DRO and -MRO. The berm soils may not be acceptable for use as backfill. Revise the Closure Plan accordingly.

Comment 12

In Section 5.3.1 (Confirmation Soil Sampling Frequency), page 23 of 34, bullet 2, the Permittee states, “[a]ll sidewall confirmation samples will be collected from two locations: one soil sample will be collected from the sidewall at the base of the excavation, and the other soil sample must be collected approximately five ft below the base of the average water line. In areas where these dimensions are separated by less than three vertical ft, then only one sidewall sample will be collected from the base of the excavation.” Since the bottom of the excavation will likely reach a depth below the historic water table, as directed by Comment 5, two soil samples will need to be collected from most of the sidewall sampling locations. In addition, since the bottom of the excavation will reach the historic water table, groundwater may accumulate on the excavation floor. It may be necessary to install monitoring wells once excavation and backfilling is complete. Revise the Closure Plan accordingly.

Comment 13

In Section 5.3.1 (Confirmation Soil Sampling Frequency), page 24 of 34, bullet 1, the Permittee

states, “[confirmation samples will be analyzed for] TPH-GRO and TPH-DRO, USEPA Method 8015.” Since the TPH-MRO concentrations in the samples collected from the ponds also exceeded applicable screening level, all confirmation samples must also be analyzed for TPH-MRO (or TPH-DRO extended). Revise the Closure Plan accordingly.

Comment 14

In Section 5.3.2.2 (Sample Methodology), page 25 of 34, paragraph 2, the Permittee states, “[t]he material will placed [sic] directly from the trowel or other appropriate sampling device into a clean glass jar. The jar will be filled completely to minimize headspace (by tamping during filling), and immediately sealed with a Teflon-lined lid.” Soil samples collected for VOC analyses must be obtained using Encore or equivalent sampling devices or other method to collect undisturbed samples approved by NMED. Revise the Closure Plan accordingly.

Comment 15

In Section 5.3.2.2 (Sample Methodology), page 25 of 34, paragraph 4, the Permittee states, “[t]he instrument will be inserted into the bag and the reading taken. All samples shall be screened at as close to the same temperature as possible to obtain consistent results. After collecting the reading, the material will be transferred from the bag into a clean glass jar as described above.” Since some VOCs can potentially be volatilized and lost from the soil during the collection of PID/FID readings, the same soil used for the collection of PID/FID readings must not be used as confirmation samples. All confirmation samples must be collected separately in a manner that is representative of field conditions. See Comment 14 above. Revise the Closure Plan accordingly.

Comment 16

In Section 5.3.2.2 (Sample Methodology), page 25 of 34, paragraph 5, the Permittee states, “[s]ampling devices will be decontaminated between sampling locations using a four-stage decontamination system consisting of a two detergent/water washes and two deionized water rinses.” Include a description about how the fluids generated by the decontamination process will be managed in the revised Closure Plan.

Comment 17

In Section 5.3.5 (Reporting Limits), page 27 of 34, paragraph 7, the Permittee states, “[f]or non-residential properties (e.g., the Refinery), the soil screening levels must be protective of commercial/industrial workers throughout the upper one foot of surface soils and construction workers throughout the upper 10 ft based on NMED criteria.” The Permittee must utilize the residential soil screening levels to guide the soil/sludge removal. If residential soil screening criteria cannot be met, non-residential soil screening criteria may be used for the guidance of removal; however, the Permittee will be required to implement institutional controls at the time of corrective action completion (i.e., post closure care). Revise the statement accordingly.

Comment 18

In Section 5.4 (Installation of Groundwater Interceptor Trenches for Future Control of Groundwater), page 28 of 34, paragraph 3, the Permittee states, “[b]ased on the depth of local groundwater, the expected depth of this excavation is approximately 4 to 5 ft bgs at the bottom of the excavation. A cross section of the interceptor trench is also shown on Drawing Sheet 4.” According to Drawing Sheet 4, the trench depth is designed to be five feet below the existing ground surface. The gauging data collected from the NAPIS and KA wells indicate that the depth of groundwater would be deeper than five feet below ground surface (bgs) at the location. Therefore, groundwater will not likely be intercepted at the proposed depth of the interceptor trench (5 feet bgs). The depth of the interceptor trench must be lower than the depth of the excavation or the historic water table at a minimum. Revise the proposed depth of the trench to ensure that groundwater is intercepted in the revised Closure Plan.

Comment 19

In Section 5.5.1 (Backfill Sampling), page 28 of 34, paragraph 7, the Permittee states, “[s]oil will be tested for the following constituents: VOCs, SVOCs, and metals.” The backfill soil samples must also be analyzed for TPH-GRO, -DRO and -MRO. In addition, clarify the Closure Plan to state that discrete soil samples will also be collected and analyzed for VOC analysis (see Comment 14 above). Revise the Closure Plan accordingly.

The Permittee must submit a revised Closure Plan that addresses all of the comments contained in this letter. Two hard copies and an electronic version on CD/DVD of the revised Closure Plan must be submitted to the NMED. The Permittee must also include a redline-strikeout version in electronic format showing where all revisions to the Closure Plan have been made. The revised Closure Plan must also be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED’s numbered comments. The revised Closure Plan must be submitted to NMED no later than **February 11, 2022**.

If you have questions regarding this letter, please contact Michiya Suzuki of my staff at 505-690-6930.

Sincerely,



Dave Cobrain
Program Manager
Hazardous Waste Bureau

cc: L. Tsinnajinnie, NMED HWB
M. Suzuki, NMED HWB

Mr. Moore
December 14, 2021
Page 8

L. Barr, EMNRD OCD
L. King, EPA Region 6 (6LCRRC)
H. Jones, Trihydro

File: Reading File and WRG 2021 file