



Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT



ENTERED

Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov



James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 24, 2019

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

**RE: APPROVAL WITH MODIFICATIONS
[REVISED] INVESTIGATION REPORT NORTH DRAINAGE DITCH AND
OW-29 & OW-30 AREAS
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID# NMD000333211
HWB-WRG-18-008**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the [Revised] *Investigation Report North Drainage Ditch and OW-29 & OW-30 Areas* (Report), dated April 2019, submitted on behalf of Marathon Petroleum Company LPC dba Western Refining Southwest Inc., Gallup Refinery (Permittee) and hereby issues this Approval with Modifications with the following comments.

Comment 1

The Permittee's response to NMED's Disapproval Comment 3 provides justification as to why soil samples were not collected during installation of groundwater monitoring wells. The Permittee's response is adequate since a work plan for additional investigation was submitted to NMED. Potential soil contamination should have been investigated at the same time groundwater monitoring wells were installed and soil contamination should also have been investigated more thoroughly at both sites. It does not make sense to drill through soil to investigate groundwater without collecting information regarding potential soil impacts when

there is an opportunity to do so. There is often a connection between potential contamination in the soil and groundwater or vice versa, depending on conditions. NMED acknowledges that the *Investigation Work Plan North Drainage Ditch and OW-29 & OW-30 Areas* (Work Plan) was approved; however, in the future, the Permittee must propose to collect soil samples when installing monitoring wells in order to fully characterize subsurface conditions. No response is required.

Comment 2

The Permittee's response to NMED's Disapproval Comment 7 states, "[w]e refer you to the Investigation Report for the OW-14 Source Area for more information on the tank farm, as that report is more clearly focused on the source of the observed down-gradient impacts (e.g., the tank farm) while this report is focused on delineating the potential down-gradient impacts to groundwater beyond OW-14, OW-29 and OW-30, as was requested by NMED. The presentation of information in multiple investigation reports for areas that all appear to be impacted from releases within the tank farm is not particularly beneficial to the reviewer and possibly it would make more sense to eventually combine the OW-29 & OW-30 and North Drainage Ditch Investigation Report and the OW-14 Source Area Investigation into a single investigation report." Rather than combining the investigation reports a summary report of investigation results for areas affected by the tank farm will likely be helpful to illustrate the issues.

Comment 3

NMED's Disapproval Comment 11 states, "[a]lso, provide the elevation difference between the ground level at the surface compared to the ground level within the ditch where the boring was installed in the description. Revise the Report to include the type of odor encountered and include a ground elevation for all borings installed within the ditch." The Permittee's response states, "[t]he ditch is approximately one foot deep where NDD-5 was completed in the ditch. Additional surveys were completed and the surveyed locations and land surface elevation of the soil borings have been added to the boring logs in Appendix G." The purpose of NMED's comment was to be able to potentially compare soil interval descriptions, groundwater elevation, and sampling results between borings installed within the ditch compared to borings installed outside of the ditch. While adding elevations to the soil borings is helpful, adding the information to the description of the borings installed during the investigation would have been more helpful. However, NMED's comment did not explicitly state that requirement. No response is required.

Comment 4

The Permittee's response to NMED's Disapproval Comment 13 states, "[i]t is noted that boring NDD-12 was designated to be a hand auger boring to assess potential surface impacts and boring NDD-11, which was completed a short distance from NDD-12 pursuant to the Work Plan, was completed using a drilling rig for deeper sampling for vertical delineation (e.g., the sample collected from 12-14' in boring NDD-11)." NMED used NDD-12 as an example. Another example includes borings NDD-9/NDD-8/NDD-7 which were installed to a total depth of two feet below the ground surface. PID readings in borings NDD-9/NDD-8/NDD-7 increased with depth and the laboratory results demonstrate that boring NDD-9 (south of the ditch) contains DRO at 3,800 mg/kg and NDD-8 (within the ditch) at 6,800 mg/kg in the 1 to 2 foot interval.

This suggests that contamination is also increasing with depth – had the Permittee continued to sample below depths of two feet below the ground surface, the Permittee may have completed the delineation of impacts to soil at the North Drainage Ditch (a goal of the field work as stated in the Work Plan). Additionally, the proposed and approved soil sampling interval in the Work Plan prescribed “> 2.0’ (from the interval in each soil boring with the greatest apparent degree of contamination, based on field observations and field screening)” which the Permittee did not follow. No response required.

Comment 5

The Permittee’s response to Comment 18 states, “NMED states that “it would have made sense to not install a well or that the boring be left open for a period of time to see if groundwater entered the boring.” Can NMED provide a specific time period that borings must be left open before plugging to satisfy NMED that groundwater is not present at a particular location? We note that NMED specified above in comment 17 that wells should be left open two weeks to see if SPH enters a well, but we were recently informed in other correspondence to leave temporary wells open for one week to see if SPH was present. It is this type of uncertainty that drives us to complete borings as permanent wells that were so designated in the approved Investigation Work Plan.” Since saturation was not encountered at all at a time of drilling; groundwater will likely not enter the borehole regardless of time period the borehole is left open. It does not make sense to complete such borings as permanent wells. In cases where there are potential signs of saturation (e.g., dampness is observed) but groundwater is absent at the time of drilling, the borehole must be left open to see if groundwater eventually enters the boring. The time period necessary to allow this to happen depends on factors such as the groundwater seepage velocity and saturated column thickness. In most cases, the time period can be estimated from existing data and field observation. Regardless, the basis for the decision to install permanent groundwater monitoring wells must be provided in all future reports, where applicable. If the Permittee cannot make such decisions based on existing data and field observations, such borings must be left open for a period of 48 hours to confirm the presence or absence of groundwater before the borehole is abandoned or converted to a permanent groundwater monitoring well. The second inquiry is the time period borings/temporary wells to be left open to confirm the presence or absence of SPH. To clarify, there is no specific rule for an observation period. The observation period is discrete and unique to the site conditions. For example, if a boring/temporary well is installed at a location where SPH may potentially be present but only groundwater (no SPH) enters the boring/temporary well, it must be left open for a reasonable period because the seepage velocity of SPH may be lower than that of groundwater. The SPH seepage velocity is variable depending on factors such as the properties of SPH, residual saturation level, depth to water and properties of surrounding media; therefore, it would be difficult to accurately estimate a “reasonable time period” for the boring/temporary wells be left open. The basis for the decision must be provided in all future reports, where applicable. If the Permittee cannot make such decision, the boreholes/temporary wells must be left open for a period of at least 48 hours to confirm presence or absence of SPH.

Comment 6

The Permittee’s response to NMED Disapproval Comment 24 states, “[t]here is no information known to be available regarding the manganese concentrations in crude oil stored at the site.”

The manganese concentrations in crude oil must be evaluated to determine whether the elevated soil concentrations are related to crude oil. Collect crude oil samples and conduct metals analysis. Provide an analytical report that presents the results of the analysis no later than **December 31, 2019**.

Comment 7

The Permittee's response to NMED Disapproval Comment 26 states, "[w]e note that the short holding times for nitrite make it extra difficult to complete the field sampling, especially for such a large number of wells as is involved in the facility-wide sampling program." NMED's Comment 4 in the *Disapproval Annual Groundwater Monitoring Report: Gallup Refinery – 2015*, dated January 31, 2018 states, "[i]nvestigate the possibility of using alternative methods to obtain separate nitrate and nitrite concentrations (e.g., colorimeters), if applicable." Onsite nitrite analysis is acceptable with an appropriate field method to accommodate the short holding time. Propose to collect groundwater samples for nitrate and nitrite separately from all groundwater monitoring wells at the site and discuss methods for onsite nitrite analysis in the upcoming Facility-Wide Groundwater Monitoring Work Plan.

Comment 8

The Permittee's response to NMED Disapproval Comment 31 states, "[t]hese borings were completed during the earlier RFI conducted in the 1990s. As such, it is doubtful they will provide information on current environmental conditions, but they certainly help document environmental conditions when they were installed 20 plus years ago and provide valuable information on the subsurface hydrogeology. NMED request to "[I]nclude this information in the revised Figures 10 and 11." We are not exactly certain to what information NMED is referring, but have included the relevant hydrogeologic information on Figures 10 and 11." The Permittee also states, "[w]e propose to include a copy of all of the historic boring logs in the area in the new work plan required above in comment 28." Logs of the borings depicted in figures in the Report and used to provide historical context must be provided. The hydrogeologic data provided by the historic borings do not necessarily provide accurate data regarding the hydrogeologic conditions other than noting areas of sand or gravel that may be conduits for groundwater migration. In the future, if historic data is used in documents, provide the data or reference the historic documents the data are presented in and provide context in the text of the document as to why the information is included.

Comment 9

The Permittee's response to NMED Disapproval Comment 33 states, "Section 7.2 has been revised to propose submittal of a work plan to investigate the area between the North Drainage Ditch and the tank farm." Section 7.2 (Recommendations) states, "[i]n addition, two permanent monitoring wells are recommended between the North Drainage Ditch and the tank farm." The referenced area between the North Drainage Ditch and the tank farm is located approximately 200 feet east of NDD-4, extending southward approximately 400 feet. Figure 5 in the *Investigation Work Plan North Drainage Ditch*, dated April 2019 does not propose installation of any borings/wells in the referenced area; therefore, it does not comply with the direction provided by Comment 33. The Permittee must revise the April 2019 Work Plan to address this area.

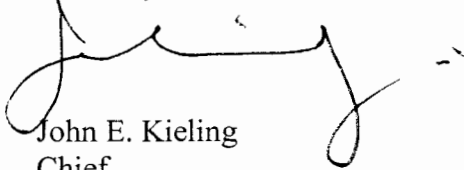
Comment 10

In Section 2.1 (North Drainage Ditch) the Permittee states that, “[a]t the western end of the North Drainage Ditch, as shown on Figures 2 and 5, the ditch basically ends and there is no clearly defined channel beyond this point. It appears any flow of surface water beyond this point would move to the north along the east side of a dirt road a short distance before crossing over the road and continuing west and then southwest eventually making its way to stormwater outfall #1.” It does not appear that stormwater outfall #1 is labelled on the figures. Provide a figure that depicts the location of stormwater outfall #1.

Provide a figure that depicts the location of stormwater outfall #1 to NMED no later than **July 31, 2019** and the analytical report that presents the result of metals analysis for crude oil no later than **December 31, 2019**.

If you have any questions regarding this letter, please contact Kristen Van Horn at (505) 476-6046.

Sincerely,



John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrainm NMED HWB
K. Van Horn, NMED HWB
M. Suzuki, NMED HWB
C. Chavez, EMNRD OCD
B. Moore, Marathon
L. King, EPA

File: WRG 2019 and Reading
HWB-WRG-18-008