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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

January 24, 2017

Mr. Ed Riege
Remediation Manager
Western Refining, Southwest Inc., Gallup Refinery
92 Giant Crossing Road
Gallup, New Mexico 87301

**RE: DISAPPROVAL
INVESTIGATION WORK PLAN
SOLID WASTE MANAGEMENT UNIT (SWMU) NO. 1 AERATION BASIN AND
SWMU NO. 14 OLD API SEPARATOR
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-14-005**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has received the *Investigation Work Plan Solid Waste Management Unit (SWMU) No. 1 Aeration Basin and SWMU No. 14 Old API Separator* (Work Plan), dated July 2015 and submitted on behalf of Western Refining Southwest Inc., Gallup Refinery (Permittee) regarding proposed additional investigation at the SWMUs. NMED delayed review of the Work Plan, because review of the Permittee's revised *Investigation Report Solid Waste Management Unit (SWMU) No. 1 Aeration Basin and SWMU No. 14 Old API Separator* (Report), revised June 2014 and August 2015 and re-submitted April 26, 2016, had not been completed. NMED finalized review of the revised Report and hereby issues this Disapproval. The field investigation proposed in the Work Plan does not appear to adequately address soil and groundwater contamination delineation at either the Aeration Basin or the OAPIS; the Permittee must address the following comments.

Comment 1

The comments below are related to the proposed boring locations. In the Executive Summary, final paragraph, page 1, the Permittee states, “[t]his earlier investigation, which was conducted July 16, 2012 through October 16, 2012, was successful in characterizing the nature of the impacts, but did not fully delineate the extent in all areas. The investigation activities proposed in this work plan, which include sampling of soils and groundwater surrounding the Aeration Basin and the Old API Separator, are intended to complete the delineation of impacted environmental media.”

- a) The field work proposed in the Work Plan does not appear to address contamination related to the operation of the Old API Separator (OAPIS) and the Aeration Basin. Furthermore, the extent of soil contamination has not been vertically delineated at either of the SWMUs and the proposed soil locations will not provide this information. However, the proposed locations will provide further delineation for contamination that may not be related to the units. For example, the Permittee proposes to install a soil boring “[n]orth of soil borings SWMU 1-6 and SWMU 1-28 to define the northern extent of benzene found in soils at a depth of 1.5 – 2.0 feet;” The proposed location is approximately 25 feet north of those boring locations. Soil samples collected from boring 1-28 contained a concentration of 2.53 mg/kg benzene at the depth of 1.5-2.0 feet bgs, which was the total depth of the boring. Soil boring 1-6 was completed to a depth of 12 feet bgs and benzene was not detected in the soil sample or in the groundwater sample. Soil boring 1-6 and 1-28 are approximately 12 feet distant from each other. The elevated benzene concentration in boring 1-28 may be related to releases from the Aeration Basin or may be possibly related to historic releases from the New API Separator or another unit; it seems anomalous to have a benzene concentration at that depth north of EP-1. Installation of a soil boring/temporary well approximately 25 feet north of soil boring 1-6 and 1-28 may not provide data that will be useful in determining the extent of contamination. Similarly, the proposed soil boring location “[e]ast of SWMU 14-23, which had benzene detected at a depth of 12 – 14 feet bgs” may be related to releases upgradient of the OAPIS rather than from the OAPIS. Another example, the proposed soil boring/temporary, “[s]outhwest of SWMU 1-37, where manganese, nickel, MTBE, and DRO were observed at concentrations above the screening levels” is approximately 100 feet from the southwest edge of AL-2. It seems likely that contaminants in the groundwater at this location are not from the Aeration Basin or the OAPIS. The Permittee may delineate the horizontal impacts as proposed, but to fully characterize the sites the Permittee must determine the vertical extent as well.
- b) The Permittee proposes to install a soil boring with a temporary well approximately 20 feet north of groundwater monitoring well OAPIS-1. Analytical results from OAPIS-1 demonstrate that groundwater is affected by benzene, methyl tert-butyl ether (MTBE), diesel range organics (DRO), 1-Methyl naphthalene, and several metals above the groundwater standards. A hand auger sample (1-12) was collected just north of OAPIS-1, near the proposed sampling location, to a total depth of 1 foot below the ground surface (stopped due to refusal in gravel). The analytical detections of contaminants

demonstrate some impacts but no results were above the soil screening levels (SSLs). There is likely an upgradient source for the contaminants in groundwater samples from OAPIS-1. Investigation upgradient from the OAPIS is more appropriate than investigating the 40 feet between the former benzene strippers and the Aeration Basin. In the revised Work Plan discuss the rationale for the selection of this location and/or propose a more appropriate location for the boring/temporary well.

- c) The results of the investigation at the OAPIS demonstrate impacts directly beneath the OAPIS. Three hand auger borings (14-12, 14-13, and 14-14) were installed in the footprint of the OAPIS. The total depth of the hand auger borings were 2 feet bgs. Three hand auger borings (14-15, 14-16, 14-17) to a total depth of 2 feet bgs were also installed along the southern boundary of OAPIS and also demonstrate impacts to soils. Soil analytical results demonstrate increasing concentrations at depth. Further horizontal delineation of soil impacts is required. The Permittee must propose to install additional soil borings at the OAPIS.
- d) In the Investigation Report (revision, dated August 2015) the Permittee asserted that further investigation of the area between the OAPIS and the Aeration Basin was not warranted; however, several boring locations between the OAPIS and the Aeration Basin are proposed in the Work Plan. In the revised Work Plan discuss the reasons why this area is being investigated, if the Permittee does not think additional data in this area is necessary.

The Permittee states in Section 4 (Scope of Services) that “[t]he site investigation of soils and groundwater will be conducted to facilitate the remedy selection and final design process.” It does not appear that the proposed soil boring locations will facilitate either goal. The Permittee must re-evaluate the proposed soil boring locations and propose to install additional soil borings in more appropriate locations in the revised Work Plan.

Comment 2

In Section 2.1.1 (Operational History), page 5, the Permittee states, “Western recently completed construction of a new wastewater treatment plant that replaces the Aeration Basin. In April 2012, wastewater flows from the refinery were redirected to the new wastewater treatment plant. The Aeration Basin continued to receive wastewater from the nearby Pilot Travel Center until June 2013, when all wastewater flows were directed to the new wastewater treatment plant.” The wastewater treatment plant did not replace the Aeration Basin. New pond, STP-1, replaced the Aeration Basin. There appears to be similar errors throughout the Work Plan, for example on page 6, third full paragraph, the Permittee states, “[i]n 2008 GWM-1 was sampled on July 10 and results are submitted to NMED annually.” Another example, in Section 2.3.3 (Historical Site Investigation) regarding the OAPIS the Permittee states, “[t]here were no documented historical releases from the OAPIS with the aforementioned noted exception of the identification of some surface soils with hydrocarbon stains around the sides of the unit.” This statement is not accurate as illustrated by the list of releases discussed in Section 2.1.2 (Prior Maintenance

Activities) regarding the Aeration Basin. Ensure that submittals are edited for accuracy. Revise the Work Plan to accurately state the available facts.

Comment 3

In Section 2.1.3 (Historical Site Investigations) the Permittee discusses the sediment sampling conducted within the Aeration Basin ponds in 2008. The sediment sampling was useful in characterizing the sludge; however, sampling did not reach depths below the base of the Aeration Basin ponds or sample native soil beneath the ponds. Therefore, the vertical extent of contamination at the Aeration Basin has not been defined. The Permittee stated in the past that sampling through the base of the Aeration Basin will cause a conduit for contamination to reach groundwater; however, groundwater is already contaminated from the Aeration Basin and also is present in the Aeration Basin. Any proposed remedy that includes removal of the sludges from the Aeration Basin must include confirmation sampling to demonstrate that all soil contamination above soil screening limits at the base of the Aeration Basin is addressed. Samples must be collected from the base of the unit as well as five feet below the base of the unit. Soil samples also must be collected to determine the horizontal extent of potential contaminants. Revise the Work Plan to propose installation of borings to determine the vertical and horizontal extent of contamination.

Comment 4

In Section 4.1.1 (Soil Sample Field Screening and Logging) the Permittee states, “[d]iscrete soil samples will be retained for laboratory analyses from within the following intervals:

- 0-6” (at soil borings with evidence of significant impacts near the land surface);
- 18-24” (at soil borings with evidence of significant impacts near the land surface);
- 24” (from the interval in each soil boring with the greatest apparent degree of contamination, based on field observations and field screening);
- From the same depth / lithologic interval(s) in which impacts were present above screening levels in the adjacent soil borings completed in 2012 (Appendix C);
- From the bottom of each borehole (all soil borings);
- From the 6” interval at the top of saturation (applicable only to borings that reach saturation); and
- Any additional intervals as determined based on field screening results.

The description of “significant impacts” used above cannot be quantified, but rather may involve a combination of factors (e.g., PID readings elevated above background readings, visible hydrocarbons stains, and/or strong hydrocarbon odors).” Field screening for collection of soil samples is helpful when deciding whether or not to collect a soil sample. However, the Permittee used a similar sampling scheme for the Phase I investigation which resulted in several data gaps. For example: surface soil samples were collected to a total depth of 0-0.5 feet from seven hand auger borings along the eastern edge of the Aeration Basin. A soil boring (1-7) was installed and soil samples were collected from 12 to 18 feet below the ground surface leaving a data gap along the eastern edge of the Aeration Basin from 0.5 feet to 12 feet bgs. As observed with soil boring 1-28, where the 2.53 mg/kg benzene concentration from the 1.5-2’ sample, field observations are not always good indicators for the presence of soil contamination. The description of the soil

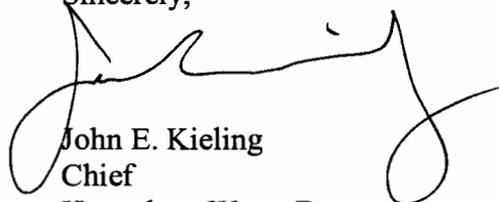
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investigation for soil boring 1-28 noted that no petroleum odors were observed and that the highest PID reading (4.8ppm) was observed at 2-4 ft bgs. In order to provide a more complete data set, the Permittee must collect soil samples in accordance with Permit Section IV.J.2.d.ii (Soil and Rock Sampling) and collect samples from the surface of all proposed boring locations as well as from 2.5-foot intervals and sample intervals where evidence of contamination (e.g., visual, olfactory) is observed.

The Permittee must submit a revised Work Plan. The submittal must include two bound paper copies and also an electronic copy that includes a redline-strikeout version of the Work Plan that shows where all changes have been made to the Work Plan. The revised Work Plan must be submitted on or before **June 30, 2017**.

If you have questions regarding this Disapproval, please contact Kristen Van Horn of my staff at 505-476-6046.

Sincerely,



John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain NMED HWB
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File: Reading File and WRG 2017 File
HWB-WRG-14-005