



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

ENTERED



Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

DAVE MARTIN
Secretary

BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 15, 2012

Mr. Ed Riege
Environmental Manager
Western Refining, Southwest Inc., Gallup Refinery
Route 3, Box 7
Gallup, New Mexico 87301

**RE: DISAPPROVAL
INVESTIGATION WORK PLAN
SOLID WASTE MANAGEMENT UNIT (SWMU) No. 1
AERATION BASIN
WESTERN REFINING COMPANY SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-12-001**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has reviewed the *Investigation Work Plan Solid Waste Management Unit (SWMU) No.1 Aeration Basin* (Work Plan), dated February 2012, submitted on behalf of Western Refining Company Southwest Inc., Gallup Refinery (Permittee) and hereby issues this disapproval.

Comment 1

In the cover letter the Permittee states, “[d]ue to the fact that the Aeration Basin currently is in service and contains wastewater, no borings are currently planned beneath the basin to avoid the risk of inadvertently causing a release or exacerbating the migration of any existing impacts.” In Section 4.1.2 (Drill Activities), page 12, the Permittee states, “if significant evidence of impacted groundwater is encountered at shallower depths, then Western may terminate borings to prevent creating a potential conduit for vertical migration. In such instances, it may be necessary to install a protective surface casing.” Some vertical migration of water will occur with appropriate

Ed Riege
Gallup Refinery
May 15, 2012
Page 2

boring abandonment, the vertical migration will be negligible and not be deleterious to the environment. No revision is necessary.

Comment 2

In Section 4.1 (Investigation), the Permittee states, “[a]s necessary, investigation beneath the Aeration Basin may be conducted at a later date, after the Aeration Basin is no longer in service and does not contain any free liquids. Any such investigation could potentially be conducted under the Corrective Measures Implementation Work Plan.” If the Permittee chooses to not sample beneath the Aeration Basin during this phase of work, then the Permittee must propose to install a groundwater monitoring network in the Corrective Measures Implementation (CMI) Work Plan.

Comment 3

In Section 2.1 (Aeration Lagoons AL-1 and AL-2), the Permittee discusses that benzene above the regulatory limit of 0.5 mg/L has entered the lagoons; additionally, there have been discharges of F037/F038 waste in the lagoons as well (while aerators were not operating). Revise the Work Plan to describe all instances of hazardous constituents discharged to or generated in the aeration basin.

Comment 4

In Section 2.1.3 (Historical Site Investigations), the Permittee states, “[t]wo groundwater monitoring wells (GWM-1 and GWM-2) were installed immediately downgradient of the aeration lagoons in 2004.” This statement is inaccurate, GWM-1 was installed in 2004; GWM-2 and GWM-3 were installed in 2005. Revise the Work Plan to include the accurate dates of well installation.

Comment 5

There are several issues within Section 2.1.3 (Historical Site Investigations). On page 5, paragraph 1, the Permittee states, “[b]oth GWM-2 and GWM-3 were dry during the 2007 annual sampling event.” GWM-2 and GWM-3 were intended to be dry wells; their purpose is to determine whether or not the aeration lagoons and EP-1 leak. On page 5, paragraph 2, the Permittee states, “[i]n 2008 GWM-1 was sampled on July 10 and results are submitted to NMED annually.” It is accurate to describe GWM-1 as sampled quarterly with results reported in the Annual Facility-Wide Groundwater Monitoring Report. Also in paragraph 2, the Permittee states, “GWM-2 and GWM-3 were not scheduled for sampling during the 2008 annual sampling event.” This statement is not accurate, GWM-2 and GWM-3 are scheduled to be checked for presence of water quarterly; if sufficient water is present a sample is collected. Water was present in GWM-2 in 2008, so a sample was collected (MTBE was detected at 0.028 mg/L). Revise the Work Plan to describe the monitoring and sampling accurately.

Ed Riege
Gallup Refinery
May 15, 2012
Page 3

Comment 6

In Section 2.1.3 (Historical Site Investigations), page 6, paragraph 1, the Permittee states, “[a]dditionally, since the measurements and calculations are in-situ calculations, the SurvCAD program applied no allowances for expansion or compaction to the calculated estimates. Removal of the material from the lagoons or exposure to ambient air reducing the percent moisture of the sediment may impact the volume of material.” The Permittee seems to have adequate information to perform the geotechnical calculations necessary to estimate the volume of material to be removed as part of the complete removal remedial alternative; such an estimate must be included in the revised CME Report and be included in the cost estimates.

Comment 7

In the Executive Summary the Permittee states, “[i]n addition, information will be collected to help determine the source of groundwater that has been observed in monitoring wells GWM-2 and GWM-3.” The Work Plan does not describe the proposed methods to determine the source of the groundwater in GWM-2 and GWM-3. Revise the Work Plan to specify the proposed methods to determine the source of water in the wells.

Comment 8

It is not clear why the discussion of AL-1 and AL-2 is separate from EP-1; combine Sections 2.1 (Aeration Lagoons AL-1 and AL-2) and Section 2.3 (EP-1). Revise the Work Plan to discuss AL-1, AL-2, and EP-1 in the same section.

Comment 9

In Section 3.2 (Subsurface Conditions), page 9, paragraph 4, the Permittee states, “[t]he location of the groundwater monitoring wells, which are near to the aeration lagoons and evaporation pond, is presented in Figure 4-1. A copy of the boring logs for KA-1, KA-2, KA-3, GWM-1, GWM-2, and GWM-3 are provided in Appendix C.” Groundwater monitoring wells KA-1 and KA-2 were replaced by groundwater monitoring wells NAPIS-1, NAPIS-2, and NAPIS-3 in 2008 (KA-1 and KA-2 were abandoned). The old KA-wells may be used to describe the lithology around the Aeration Basin (page 9, paragraph 3); however, if describing the current groundwater monitoring wells reference only the NAPIS wells and KA-3. Revise Figure 4-1 to depict only the current wells and provide the corresponding boring logs and well construction diagrams. Revise the Work Plan accordingly.

Comment 10

In Section 3.2 (Subsurface Conditions), page 9, paragraph 4, the Permittee states, “[t]he occurrence of shallow groundwater in the area is sporadic and temporal, as displayed with the recent absence of groundwater in GWM-2 and GWM-3, as discussed above.” NMED’s January 23, 2012 letter, Comment 3, required the Permittee to find the source of the water in the wells; it is not clear how the Permittee determined that the water detected in GWM-2 and GWM-3 is naturally fluctuating groundwater. The wells were installed in 2005 to monitor whether or not

Ed Riege
Gallup Refinery
May 15, 2012
Page 4

the aeration lagoons leak and were intended to be dry wells. Water was detected in the wells starting in 2008 and continues to appear. The Gallup area has experienced below average precipitation over the last several years, whereas the groundwater levels in GWM-2 and GWM-3 have increased. The Permittee must determine if the groundwater levels have been measured and recorded properly, if there is an increase in the groundwater table that can be correlated to other wells in the vicinity (e.g. NAPIS-1, 2 3), or if the ponds are leaking. Compare the groundwater data from the Aeration Basin to other groundwater wells (around the facility. Propose to evaluate whether or not water in GWM-2 and GWM-3 is natural groundwater or wastewater leaking from the Aeration Basin and discuss, in detail, the proposed methods to determine the water source. See also Comment 4.

Comment 11

In Section 4.1 (Investigation), the Permittee states, “[t]his investigation will include surface (0-6”) and shallow subsurface (18-24”) samples collected on 50-ft spacings around the perimeter of the Aeration Basin (Figure 4-1). In addition, seven soil borings will be installed around the perimeter as shown in Figure 4-1 to determine if constituents have migrated laterally from the surface impoundments impacting either soils or groundwater.” In Section 4.1.1 (Soil Sample Field Screening and Logging), the Permittee states, “[d]iscrete soil samples will be collected for laboratory analyses from within the following intervals: 0-6” (at soil borings with evidence of significant impacts near the land surface and all hand auger locations); 6-24” (at soil borings with evidence of significant impacts near the land surface and all hand auger locations); >24” (from the interval in each soil boring with the greatest apparent degree of contamination, based on field observations and field screenings; From a one-foot interval, which lies approximately five feet below the bottom of the Aeration Basin (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.” Revise the sampling plan to ensure that samples are collected at the bottom of each borehole. In the revised Work Plan propose that a percentage of the hand auger bore holes be advanced at least 6 inches below the bottom of the berm material if the berm material is present deeper than 24 inches (to be determined in the field). Describe in more detail the “significant impacts” that will determine whether or not a sample will be collected from 0-6 inches and 6-24 inches. Add additional soil borings, one near GWM-2 and one near GWM-3 to further characterize the area. Revise the Work Plan as needed.

Comment 12

In Section 4.1.2 (Drilling Activities), the Permittee states, “[s]oil borings will be drilled using either cone penetrometer (CPT), hollow-stem auger or if necessary, air rotary methods including ODEX.” NMED assumes that CPT refers to direct push technology. Direct push/geoprobe (with CPT) may be an appropriate drilling method, if a problem arises while using direct push/geoprobe, the Permittee must use hollow-stem auger; air rotary is not appropriate to use at the facility. In general, the Work Plan must be sufficiently specific that it can be used to generate information such as an accurate cost estimate and be used to direct field activities.

Ed Riege
Gallup Refinery
May 15, 2012
Page 5

NMED realizes that contingencies arise during field work; these can be addressed by contacting NMED and also describing any deviations from the work plan in the investigation report. Revise the Work Plan to be more specific; the Permittee must propose to use either direct push and/or hollow stem auger for soil borings.

Comment 13

Section 4.1.2 (Drilling Activities), page 13, paragraph 13, the Permittee states, “[s]oil samples will be collected continuously and logged by a qualified geologist or engineer.” This statement is not accurate. Soil borings will be sampled continuously, but soil samples (discrete) will be collected as described in Section 4.1.1 (Soil Sample Field Screening and Logging). Revise the Work Plan to provide more accurate phrasing.

Comment 14

Figure 4-1 (Proposed Sample Locations) shows the proposed locations of the hand auger borings and direct push/hollow stem auger boring locations. Ensure that all of the boring locations are labeled (location and boring designation) on the final sample location figure in the investigation report. Additionally, in revised Figure 4-1 include the additional borings required by Comment 11 and update the groundwater monitoring wells as required by Comment 9.

Comment 15

Appendix A (Appendices I-1 and I-2 of the RCRA Post-Closure Permit Application) contains information regarding SWMU 1 (the Aeration Basin) and SWMU 2 (the Evaporation Ponds). This information has previously been submitted to NMED. It is not clear why information about the Evaporation Ponds is included (Appendix A is referenced in Section 1 (Introduction); if it is meant to be evidence that EP-1 is part of SWMU 1, NMED agreed in its letter from January 23, 2012, Comment 2, that EP-1 is part of SWMU 1). It is not clear why the appendix was included; remove Appendix A from the Work Plan.

Comment 16

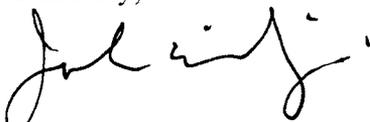
Appendix B (Trihydro Report, June 2008) contains a sediment investigation report for the Aeration Basin. This report has been previously submitted to NMED; therefore, including a copy in the Work Plan is not necessary. Reference the Trihydro Report in the appropriate sections of the Work Plan and NMED will utilize the existing copy to confirm the references. Remove Appendix B from the Work Plan.

Ed Riege
Gallup Refinery
May 15, 2012
Page 6

The Permittee must address all comments in this disapproval and submit a revised Work Plan. The revised Work Plan must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments and a red-line strikeout version of the Work Plan that shows where all changes have been made. The revised Work Plan must be submitted to NMED no later than **June 9, 2012**.

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
K. Van Horn, NMED HWB
A. Haines, WRG
C. Johnson WRG

File: Reading File and WRG 2012 File
WRG-12-001