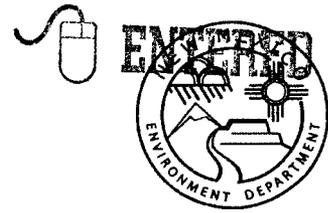




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Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

July 24, 2015

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

**RE: APPROVAL WITH MODIFICATIONS  
FACILITY-WIDE GROUND WATER MONITORING  
WORK PLAN – 2012 UPDATES; 2013 UPDATES; 2014 UPDATES FOR 2015  
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY  
EPA ID # NMD000333211  
HWB-WRG-13-002  
HWB-WRG-14-002  
HWB-WRG-15-001**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has reviewed the revised *Facility-Wide Ground Water Monitoring Work Plan -- 2012 Updates* (Work Plan), dated February 2013; the *Facility-Wide Ground Water Monitoring Work Plan – 2013 Updates*, dated March 31, 2014; and the *Facility-Wide Ground Water Monitoring Work Plan – 2014 Updates for 2015*, dated February 23, 2015 submitted on behalf of Western Refining Southwest Inc., Gallup Refinery (Permittee) and hereby issues this Approval with the following modifications.

This Approval with Modifications addresses the Work Plans submitted for 2012, 2013, and 2014. Many of the comments apply to all three Work Plans; therefore, NMED is providing comments for all of the Work Plans simultaneously. The Permittee must make all required changes presented in this letter to the most recent version (2014) of the Work Plan. Revise only the 2014 Work Plan and resubmit it for NMED's review and approval.

Ed Riege  
Gallup Refinery  
July 24, 2015  
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A general note on the Permittee's requested changes to the Plan: NMED and OCD request that the Permittee provide a table which shows the current approved monitoring schedule and analytical suites, the Permittee's requested changes to the schedule and analytical suites, and rationale for the requested changes. The requested table will facilitate the review process. This table would be in lieu of making changes to Table 1 for requests that have not yet been approved by the agencies.

#### **Comment 1**

The Permittee included a hard copy of the red-line strikeout version of the Work Plan, which highlighted some, but not all changes to the Work Plan. Include a red-line strikeout version of Table 1 if changes are made to Table 1 each year. Additionally, in the future, there is no need to provide a paper copy of the red-line strikeout if an electronic copy is provided.

#### **2012 Work Plan Comments**

##### **Comment 2**

On page 13 the Permittee states, "Method 8021B analysis is required for groundwater detected in GWM-2 and GWM-3 and Western would like to change method 8021B analysis to Method 8260B + MTBE for a more detailed list of volatile organic carbons." This proposed change was incorporated into Table 1 as well. The Permittee also requests this change in Section 5.3.1 (Request for Modifications to the Sampling Plan). NMED hereby approves this proposed change and it must be incorporated into all future Work Plans. Please revise Table 1 as necessary.

##### **Comment 3**

In Section 4.1.1 (Well Gauging) the Permittee states, "[a]ll measurements will be made relative to the same datum for all wells." Each well casing should have been surveyed and a measuring point marked on the top of the casing, all measurements must be made from that surveyed point on the well casing for each individual well as noted in Work Plan Appendix B; Field Data Collection; paragraph two; "wells also have a permanent marked reference point on the well casing from which ground water levels and well depths are measured." In all future Work Plans, revise the sentence in Section 4.1.1 to accurately describe the measurement points as described in Appendix B and ensure that information in the main text and appendices correspond.

##### **Comment 4**

In Section 5.3.1 (Request for Modifications to the Sampling Plan), the Permittee noted that monitoring well OAPIS-1 was included in the monitoring schedule and sampled on a quarterly basis for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), WQCC metals (totals and dissolved), gasoline-range organics (GRO), diesel-range organics (DRO) extended, and major cations and anions. The addition of OAPIS-1 is approved as well as the list of proposed laboratory analyses.

### **Comment 5**

In Section 5.3.1 (Request for Modifications to the Sampling Plan) the Permittee notes that, “[t]here is no more flow at these sample points in the outfalls except for the Pilot Effluent which continues to flow to EP-1.” As long as the Pilot Effluent flow is now routed to STP-1 and the changes made to Table 1 are reflective of the changes to the waste water treatment system; the changes are approved.

### **2013 Work Plan Comments**

#### **Comment 6**

On page 13, the Permittee notes the hydrocarbon seep discovered in June 2013 and the 18 permanent monitoring wells that were installed to monitor the seep. In Section 5.3.1 (Request for Modifications to Sampling Plan) the Permittee stated that 18 permanent monitoring wells (MKTF-1 through -18) have been added. The Permittee proposes quarterly sampling for VOCs, SVOCs, WQCC metals (total and dissolved), GRO, DRO extended, and major cations and anions. The Permittee notes that samples would not be collected, if measureable separate phase hydrocarbon (SPH) was detected. The addition of the MKTF monitoring wells to the Work Plan is approved as well as the proposed analytical suites. All SPH in the groundwater wells must be measured and the thickness reported in the Facility-Wide Groundwater Monitoring Reports.

#### **Comment 7**

The Permittee requests several other changes to the Work Plan in Section 5.3.1 (Request for Modifications to Sampling Plan):

- a) The Permittee request to change the analyses for OW-1 and OW-10 to VOCs, major cations and anions, arsenic and uranium. The current requirements for OW-1 are: quarterly monitoring, collection of groundwater elevation data, water quality parameters, and a visual check for artesian conditions and sample for major cations, anions, VOCs, GRO, DRO extended, and WQCC metals. The current requirements for OW-10 are: quarterly monitoring, groundwater elevation data, water quality parameters, and water level measurement of the Sonsela aquifer, analysis for major cations, anions, VOCs, GRO, DRO extended, and WQCC metals. For monitoring well OW-1, the Permittee must continue sampling for chromium, iron, manganese, arsenic and uranium as well as VOCs, GRO, DRO extended, and WQCC metals, and major cations and anions. For monitoring well OW-10, the Permittee must continue sampling for methyl tert-butyl ether (MTBE), GRO, DRO-extended, uranium and arsenic as well as VOCs, and major cations and anions. The OW-series of groundwater monitoring wells are used for detection and compliance monitoring and it is necessary to continue to monitor for these constituents and any changes in groundwater conditions over time. The Permittee must also continue to collect groundwater level measurements, and water quality parameters for both monitoring wells. Revise Table 1 as required.

- b) The Permittee requests to reduce the analyses for groundwater samples collected from groundwater monitoring wells BW-1A, BW-1B, BW-1C, BW-2A, BW-2B, BW-2C, BW-3A, BW-3B, BW-3C to RCRA metals (total and dissolved), and discontinue SVOCs, because the only analyte recently detected is bis-2-ethylhexylphthalate a possible laboratory contaminant. Currently BW-wells are analyzed for major cations, anions, VOCs, SVOCs, WQCC metals, groundwater levels, and water quality parameters. The purpose of the BW-series wells is for boundary detection monitoring and to monitor any potential contamination that may migrate off-site. The Permittee must therefore continue to sample and analyze for major cations and anions, VOCs, WQCC metals, groundwater level, and water quality parameters. The Permittee may discontinue sampling for SVOCs, but must add analysis for GRO and DRO-extended. Please revise Table 1 as necessary.
- c) The Permittee requests that well OW-11 analyses be reduced to major cations and anions and WQCC metals (total and dissolved), stating that there have been no detections of VOCs or SVOCs except one hit of bis-2-ethylhexylphthalate (possible lab contaminant). The Permittee must continue to sample for major cations and anions, VOCs, and WQCC metals. The OW-series of groundwater monitoring wells are used for detection and compliance monitoring and it is necessary to continue to monitor for these constituents and any changes in groundwater conditions over time. The Permittee may discontinue analysis for SVOCs. However, analyses must also include uranium as well as GRO and DRO-extended. Revise Table 1 as necessary.
- d) The Permittee requests to reduce the analytical suites for wells OW-50 and OW-52 to VOCs and WQCC metals. Currently the required analyses are VOCs, SVOCs, GRO/DRO extended, WQCC metals, and general chemistry. The purpose of these wells is to monitor the MTBE plume which appears to be migrating towards OW-50 and OW-52 as well as off-site. Therefore it is not appropriate to reduce the analyses for these wells. However, the Permittee may discontinue analysis for SVOCs, but must include GRO and DRO-extended analyses.
- e) The Permittee requests that groundwater monitoring well SMW-2 sample analyses be reduced to VOCs and WQCC metals. SMW-2 is part of the "sentinel well" system around the closed RCRA Land Treatment Unit. Therefore, the Permittee must continue to sample, as required, at SMW-2 for major cations, anions, VOCs, GRO/DRO-extended, WQCC metals, and cyanide.
- f) The Permittee request to remove recovery wells RW-1, RW-2, RW-5, and RW-6 from an annual sampling schedule since these are hydrocarbon recovery wells. The Permittee proposed to continue to inspect on quarterly basis. The Permittee must continue to monitor separate phase hydrocarbon (SPH) and groundwater levels in these wells and

report hydrocarbon recovery in the annual Facility-Wide Groundwater Monitoring Report. If SPH are not present in the wells, then the Permittee must sample the wells for the BTEX, MTBE, DRO, and GRO.

- g) The Permittee requests to return to the three-year schedule beginning in 2016 for production well PW-3. No SVOCs or VOCs have been detected in PW-3 since August 2008. However, because PW-3 is located hydrogeologically downgradient and is in proximity to the process areas, it is important to monitor it at least annually. The Permittee must continue monitoring PW-3 annually. Revise Table 1 as needed.

### **2014 Work Plan Comments**

#### **Comment 8**

In Section 1.0 (Introduction), page 1-2, the Permittee states, "Group E includes a total of 45 new monitoring wells installed to delineate a hydrocarbon seep discovered west of Tank 101. Also included in this group is a pre-existing well located directly west of the truck loading rack. This well has been labeled as MKTF-45 as no markings or boring logs have been located to identify when this well was installed." In Appendix C, the Permittee lists the screened interval of MKTF-45. In the Interim Measures Report required by NMED (in a letter dated April 8, 2015), please include a description of the well survey and describe the methods used to determine the screened interval in well MKTF-45. Include information regarding the reasons the monitoring well was installed, if known. No revision to the Work Plan is necessary.

#### **Comment 9**

In Section 3.2 (Drainages) the Permittee discusses the evaporation ponds, springs, ponds, arroyos, and the South Fork of the Rio Puerco River. Please revise this section to include a discussion of the drainage outfalls and other drainage ditches (e.g., the "conveyance" ditch affected by the DGF Feed Tank release, August 2014) in the revised Work Plan.

#### **Comment 10**

In Section 6 (Monitoring Program Revisions) the Permittee requests to change the monitoring plan. Some of the requests are carried over from the previous year (see Comment 7 for NMED requirements and approval or disapproval of the requested changes). In addition, the Permittee requests several other changes:

- a) The Permittee states, "Gallup Refinery has installed twenty-nine (29) monitoring wells to be added to the 2014 sampling plan for 2014 and are listed as follows: MKTF-19 through MKTF-45 and STP1-NW, STP1-SW. MKTF 19 through 34 were developed in early 2014 and have been sampled and or inspected for four consecutive quarters. A review of the quarterly analytical laboratory data does not indicate any significant changes over time that would warrant continued quarterly monitoring. Western request sampling frequency to be changed to an annual basis for wells MKTF-19 through MKTF-26,

MKTF 26, MKTF-28, MKTF-30, MKTF-37, MKTF-38, MKTF-39, MKTF-40, MKTF-43 and MKTF-44 beginning in 2015.” The Permittee is conducting corrective action related to the release from the Contact Wastewater System/Stormwater Collection System. The above-referenced wells are used to monitor the releases from the Contact Wastewater System/Stormwater Collection System. Therefore, the Permittee must continue to sample and analyze these MKTF-series groundwater monitoring wells on a quarterly basis.

- b) The Permittee states, “STP1-NW and STP1-SW. Initial sampling began in the second quarter of 2014. Analytical data for the past three quarters indicate no detection of BTEX, VOCs, or SVOCs in STP1-NW. No detection of fluid has been detected in STP1-SW in 2014. Based on the analytical data, Western requests changing the test methods to VOCs and WQCC Metals and change the sampling frequency of these wells to an Annual basis beginning in 2015.” The Permittee must continue quarterly monitoring of the STP-wells and analyze for GRO, DRO, MRO, VOCs, and metals. Revise Table 1 as needed.
- c) Requests in paragraphs C through I are carried over from 2013, see Comment 7.
- d) The Permittee states, “MKTF 1-18: MKTF 1 through 18 have been sampled or inspected on a quarterly basis for all of 2014. A review of the quarterly laboratory results does not indicate any significant changes over time that would warrant continued quarterly monitoring. Western requests quarterly sampling frequency be changed to annual beginning in 2015.” See Comment 10a above.
- e) The Permittee requests to, “[r]evise statement ‘All wells including the recovery wells containing separate phase hydrocarbons’, to read ‘Annual sampling for all wells that are not currently on an annual schedule will also include Major cations/anions, VOC, SVOC, WQCC metals.’ Do not sample wells that have an SPH level.” The Permittee’s statement is unclear; therefore NMED’s decision regarding this request is deferred pending the Permittee’s clarification in the revised Work Plan.
- f) The Permittee notes that the requested changes have been made to Table 1. Provide a revised Table 1 that reflects the original sampling and monitoring approved in the 2011 Work Plan and include the approved changes to the Work Plans from this letter. In addition, provide a red-line strikeout version of Table 1 with the revised Work Plan.

**Comment 11**

It is not clear why Appendix A was included in the submission since Appendix A does not contain any information. Remove Appendix A from the Work Plan or revise to include the necessary information.

**Comment 12**

The table presented in Appendix C-1 (Well Data 2014 Annual/Quarterly Sampling DTB/DTW Measurements) contains several errors:

- a) It appears that the some of the data presented is incorrect (for example, the 2011 Survey Well Casing Rim Elevation, Stick Up Lengths for monitoring wells BW1-A through C). Review and correct the table as necessary.
- b) The Permittee lists "DRY" for several wells and "0.00" for several other wells. For the wells with 0.00 reported in the Depth to Water (ft) column, there are groundwater elevations listed in the Groundwater Elevation (ft) column. A reading of 0.00 indicates that groundwater is at the top of the well casing. NMED suspects that 0.00 is not an indicator that groundwater is at the top of casing. Either explain the difference between a dry well and a well with 0.00 recorded for the depth to water (ft) or revise the table to display the correct data.
- c) The Permittee must ensure that the table in Appendix C-2 is correct and that the data in that table is correlated to the data presented in the table in Appendix C-1.
- d) Review all tables included in the Work Plan for accuracy and make corrections as necessary.

**Comment 13**

Revise Table 1 in Appendix D to reflect the changes required in this letter. Provide a red-line strikeout version of the table indicating where all of the changes were made.

**Comment 14**

The Permittee included well logs for the new MKTF-series groundwater monitoring wells in Appendix E. The Permittee also included the logs in the 2013 Annual Groundwater Monitoring Report. NMED will review the logs as part of the required Interim Measures Report for the Hydrocarbon Seep (NMED letter dated April 8, 2015). NMED did not review the logs as part of the Work Plan, but they may remain in the Work Plan for informational purposes.

**Comment 15**

Figure 6 depicts the groundwater elevation for the Chinle/Alluvium interface. The groundwater contours are heavily influenced by the MKTF-series groundwater monitoring wells which were affected by the hydrocarbon seep and represent what is likely a temporary groundwater elevation level. No response is required.

Ed Riege  
Gallup Refinery  
July 24, 2015  
Page 8

The Permittee must revise and submit only the 2014 Work Plan for NMED review. The Permittee must address all comments in this Approval with Modifications and submit a revised Work Plan by **September 28, 2015**. The revised 2014 Work Plan must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, the Permittee must submit a redline-strikeout version that identifies all changes and edits to the 2014 Work Plan (the red-line strikeout may be an electronic copy) with the response.

If you have questions regarding this Approval with Modifications, 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 2015 File  
HWB-WRG-13-002  
HWB-WRG-14-002  
HWB-WRG-15-001