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**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

April 11, 2012

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

**RE: NOTICE OF DISAPPROVAL  
ANNUAL GROUNDWATER MONITORING REPORT:  
GALLUP REFINERY 2010  
WESTERN REFINING COMPANY, SOUTHWEST, INC., GALLUP REFINERY  
HWB-WRG-11-004  
EPA ID # NMD000333211**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has completed its review of the *Annual Groundwater Monitoring Report: Gallup Refinery - 2010* (Report), dated August 31, 2011, submitted on behalf of Western Refining Company, Southwest Inc., Gallup Refinery (Permittee). NMED has reviewed the Report and hereby issues this Notice of Disapproval (NOD). The Permittee must address the following comments.

**Comment 1**

The Permittee did not incorporate direction included in NMED's comments regarding the previous year's report and continues to submit Groundwater Monitoring Reports that are difficult to review. There continues to be inconsistencies between the data presented in the tables and data included in the text. There is a lack of information in several sections of the Report and problems with the figures. The Permittee must submit a revised Report with all revisions

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required by this letter as applicable. All changes required by this NOD must be applied to all future groundwater monitoring reports and work plans as applicable. Further noncompliance with NMED's direction may result in an enforcement action.

### **Comment 2**

In the Executive Summary, paragraph 1, page 3, the Permittee states, “[m]onitoring activities conducted for 2010 followed the guidelines from the Facility Wide Ground Water Monitoring Plan [FWGWMP] (August 25, 2010).” The Permittee did not use the approved FWGWMP for all of the monitoring and sampling activities in 2010. Monitoring and sampling activities conducted for 2010 followed the guidelines from the 2009 FWGWMP for the first and second quarters while the third and fourth quarter monitoring and sampling activities were conducted with the 2010 FWGWMP (approved with modifications on August 25, 2010). Revise the Report to reflect that the 2010 field work was based on the two work plans at different times of the year.

### **Comment 3**

In the Executive Summary, *East Side Ground Water*, page 3, the Permittee states, “[i]n three wells, OW-14, OW-29, and OW-30, [methyl tertiary butyl ether (MTBE)] is in the range of 0.12 ppm to 1.6 ppm and at levels above the EPA [Regional Screening Level (RSL)] standard of 0.012 ppm. In OW-13 trace levels of MTBE was detected in the first quarter of 2010 ranging from 0.0023 ppm first quarter to 0.0048 in the fourth quarter of 2010 which is below the EPA RSL standard of 0.012 ppm.” In the revised Report, define all acronyms when introducing them for the first time or include a more extensive list of acronyms that defines each acronym used in the revised Report. In addition, all reported data values must include the appropriate units of measure.

### **Comment 4**

In the Executive Summary, page 3, the title, *West Side Ground Water*, must be provided on the same page with its' corresponding text. If the title of a document section is the last line on the previous page, the Permittee must move the title of that section to the same page as the associated section text in future documents.

### **Comment 5**

In the Executive Summary, *West Side Ground Water*, paragraph 2, page 4, the Permittee states, “PW-3 will continue to be sampled on an annual basis as directed in the Facility Wide Ground Water Report dated August 25, 2010.” This reference is inaccurate; the Permittee is required to sample PW-3 by NMED's Comment 12 of the May 16, 2011 NOD (May 2011 NOD) for the

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Annual Groundwater Monitoring Report: Gallup Refinery 2009. Revise the Report to accurately cite the correct document.

#### **Comment 6**

In the Table of Contents, page 5, the page numbers for the data tables from pages 103 through 160 are incorrect. The Permittee hand corrected pages 101 through 103 (with the following page corrected as “103a”) and continued through page 108. In addition there are two pages with the page number 108. Revise the Report to provide correct page numbers. In future documents, the Permittee must ensure that all page numbers listed in the Table of Contents correspond to their associated sections, tables, and figures.

#### **Comment 7**

In the List of Figures in the Table of Contents, page 6, the font format is not consistent throughout the page. The font sizes are different and the page numbers do not correspond with the correct figures. In addition, “piezometric” is misspelled in the titles, “Figure 9: Sonsela Water-Pizeometric Surface” and “Figure 10: Chinle Group-Alluvium Interface Water-Pizeometric Surface.” Revise the Report to correct these errors. Be consistent with formatting and review the Report for typographic and other errors prior to submittal.

#### **Comment 8**

The Appendices in the Table of Contents, page 7, states, “Binder 2,3 Appendix L Laboratory Analytical Reports.” However, the title pages for binders 2 and 3 read, “Binder 2 – Appendix K Data Tables 8.1-8.7” and “Binder 3 – Appendix K Data Tables 8.8-8.16.” Provide replacement pages for binders 2 and 3 with the correct reference to Appendix L and include the pages with the revised Report. Ensure that the title page for each binder is correct prior to submittal.

#### **Comment 9**

Throughout the document, the Permittee uses undefined acronyms (*see* Comment 3) or is inconsistent with their use. The following are examples from the Report.

- a. In the List of Acronyms, page 8, several acronyms used in the Report were omitted.
- b. In Section 1.0 (Introduction), paragraph 2, page 9, the Permittee fails to introduce the acronyms such as New Mexico Water Quality Control Commission (NMWQCC) as well as interchanges different acronyms for NMWQCC throughout the Report. Throughout the Report, the Permittee refers to the NMWQCC as NMWQS, WQCC, and WQCC 20 NMAC 6.2.3103.

- c. In Section 2.0 (Scope of Activities), bullet 3, page 34 the Permittee defines new API Separator as “NAPI.” However, the Permittee also uses “NAPIS” throughout the Report and it is not clear if they are the same unit.
- d. In Section 2.2 (Sampling Methods and Procedures), bullet 8, page 25, the Permittee states, “[t]rip blanks will accompany laboratory sample bottles and shipping and storage containers intended for VOC analysis.” The Permittee did not define VOC as volatile organic compound prior to introducing the acronym.
- e. In Section 6.1 (Monitoring Wells That Have Constituent Levels Above Standards), *SMW-2*, *SMW-4*, page 43, the Permittee states, “SMW-2 is located on the southeast corner of the closed Land Treatment Unit and SMW-4 is located on the north side of the closed Land Treatment Unit. In SMW-2, MTBE was detected at 0.0088 ppm below the EPA RSL standard. Gasoline Range Organics in SMW-2 have ranged from 0.69 ppm in January 2008 to non-detectable level of <0.05 ppm in July 2009.” The Permittee introduced “LTU” in the first paragraph but did not define the acronym until the second paragraph. In addition, “Gasoline Range Organics (GRO)” had already been introduced and the Permittee redefines it in the discussion.

Revise the Report to define the acronyms at their first use and be consistent when using them throughout the Report.

#### **Comment 10**

In Section 1.2 (Background Information), the last sentence in paragraph 1 on page 10, bullet 5 and paragraph 2 on page 11, “feed stock” is misspelled. Correct the spelling error.

#### **Comment 11**

Table 1 (2010 Monitoring Schedule) in Section 2.0 (Scope of Activities) summarizes the sample location IDs, the sampling frequency, sample and inspection dates, analytical suites, and reference tables. The following comments pertain to Table 1:

- a. Report the sample and inspection dates ascending from the first sample/inspection date to the most recent sample/inspection date.
- b. The information in Table 1 is similar to the table in the 2009 FWGWMP. However, Table 1 lists the analytical methods and an expanded inventory of constituents instead of listing only the constituents to be analyzed. The data tables only list some of the analytical methods mentioned in Table 1. Revise Table 1 to only report the constituents to be analyzed (e.g., volatile organic compounds (VOCs), semi-volatile organic

compounds (SVOCs)) and discuss and list all corresponding analytical methods from Table 1 and the data tables in the appropriate section (e.g., Section 2.5 (Analytical Methods)) in the revised Report.

- c. Information in the column titled, "Analytical Suite" does not always pertain to the constituents to be analyzed; there are notes regarding monitoring activities for most of the wells. Change the header of the column to "General Monitoring and Sampling Comments" to reflect the information in the column.
- d. Revise the information in the column labeled "Reference Tables" with the correct references to the analytical data and appendices. Change the title of the column to "Analytical Data."
- e. There are typographical errors in the "Analytical Suite" column regarding some of the analytical methods. For example, in the row for "Sampling Location ID: Influent to AL-1", the Permittee references "8026 + MTBE" as the constituents to be analyzed. "8026" is incorrect. Check that all analytical methods are listed correctly and correct them as necessary (*see* Item a above).
- f. On page 19 in the "Sampling Location ID" column, there is a typographical error: "EP-9" should be "EP-9a" as reported in the approved 2010 FWGWMP. Review all sample location IDs and ensure they are labeled correctly.
- g. Revise note 1 to reference that the sample locations were added to the FWGWMP (approved with modifications on August 25, 2010).
- h. Revise note 3 to reference that the first and second quarter sampling and monitoring activities were conducted using the 2009 FWGWMP and that the third and fourth quarter sampling and monitoring activities were conducted using the 2010 FWGWMP. In addition, change the "3" from a superscripted number to match the text font size.
- i. Include a footnote about the samples collected on 7/15/10 and assign it as note 4.

### **Comment 12**

In Section 2.2 (Sampling Methods and Procedures), paragraph 1, page 24, the Permittee states, "[f]ield water quality measurements must stabilize for a minimum of three consecutive readings taken at 2 to 5 minute intervals and are within the following limits before purging will be discontinued and sampling may begin: DO-Dissolved Oxygen (10%), Specific Conductance (3%), Temperature (3%), pH (+/- 10 mill volts)." The correct units of measure for pH are

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millivolts (mV). Revise the Report to correct the units of measure for pH. Revise the Report to ensure that all units of measure are correct.

### **Comment 13**

The following comments pertain to Section 2.2.1 (Equipment):

- a. Replace the paragraphs in Section 2.2.1 with bulleted points rather than presenting in paragraph form.
- b. In paragraphs 1 and 4, the unit, inch or inches, can be abbreviated to “in.” after it has been introduced.
- c. In paragraph 2, remove the capital “I” from the first use of “Instrument” and replace with a lower case “i.”
- d. In paragraphs 3 and 4 the Permittee introduces field measurements. Replace the first “dissolved oxygen” with “dissolved oxygen (DO)” and the second “dissolved oxygen” with “DO.”
- e. In paragraph 4, the Permittee states the “[p]olyethylene bailer (1.5” X 36 inches overall length; capacity approximately 1 liter).” Remove the ” symbol and replace with “inches” or “in.” The Permittee must be consistent when reporting units throughout the Report.

In general, the Permittee must proofread and edit submittals and ensure formatting, abbreviations, and acronyms are used correctly throughout the revised Report. Apply all changes described above in the revised Report.

### **Comment 14**

In Section 3.0 (Ground Water Elevation Surveys), page 28, the Permittee states, “[g]round water elevation data are collected from the wells listed in Section 2.0. Figure 6 shows the locations of all the active wells. Section 9 contains the data gathered for 2010.” In Section 5.1 (Potentiometric Map), page 30, the Permittee states, “Figure 8 presents a Potentiometric Elevation Map showing ground water elevations in some of the Chinle/alluvium wells and contours and Section 10 provides ground water elevation data gathered during 2010.” The Permittee does not mention that the wells were resurveyed in 2010 as required by the May 2011 NOD. The May 2011 NOD stated that the elevation data was incorrect in the 2009 Report. In addition, it is unclear if the incorrect elevation data from the 2009 Report were used to generate the figures in Section 10 (Figures) or if the unapproved survey data from *Requirement to Resurvey Ground Water Monitoring Wells and Recovery Wells* (dated December 5, 2011) was

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used. Revise the Report to clarify which elevation data were used to generate the figures in Section 10 and provide statements in Sections 3.0 and 5.1. In future reports, use the approved survey data and correct any associated figures.

**Comment 15**

In Section 6.1 (Monitoring Wells That Have Constituent Levels Above Standards), *BW-1C*, *2B*, *2C*, *3B*, *3C*, paragraph 2, page 32, the Permittee states, “BW-2B dissolved metals also had readings of 0.22 ppm for manganese which is above the WQCC standard of 0.2 ppm, and selenium was also detected at 1.2 ppm which is above the WQCC and EPA [maximum contaminant level (MCL)] standards of 0.05 ppm.” Revise the Report to replace “readings” with “concentrations” to better describe the analytical data.

**Comment 16**

Throughout Section 6.1 (Monitoring Wells That Have Constituent Levels Above Standards), the Permittee presents the sample and monitoring dates in several formats such as “7/15/10, 7-15-10, and July 15, 2010.” Be consistent when presenting monitoring and sample dates. In addition, the Permittee must also report the dates ascending from the oldest date to the most recent date in text of the revised Report (*see* Comment 11a).

**Comment 17**

Throughout Section 6.1 ((Monitoring Wells That Have Constituent Levels Above Standards), the Permittee inserted trended data figures (Tables 2 through 14). Move the trended data figures from this section to a more appropriate section of the revised Report. In addition, the Permittee labeled these trended figures “Tables.” Label them as graphs or figures in the revised Report and include the individual data points on the graphs in the revised Report.

**Comment 18**

In Section 6.1 (Monitoring Wells That Have Constituent Levels Above Standards), *GWM-1*, paragraph 2, page 32, the Permittee states, “[benzene, toluene, ethylbenzene, xylene (BTEX)] constituents analyzed in this well are as follows: Benzene averaged 0.0086 ppm for 2010, with first quarter recording the highest level of 0.012 ppm above the EPA RSL standard of 4.1E-04 ppm, the EPA MCL standard of 0.005 ppm, and the NMWQS of 0.01 ppm.” Throughout Section 6.1, the Permittee makes statements about the average of the concentrations detected for each constituent. The Permittee must not report the data as an average. The Permittee must evaluate and report individual results for each constituent. Remove all statements that discuss averaging in the revised Report.

**Comment 19**

In Section 6.1 (Monitoring Wells That Have Constituent Levels Above Standards), *GWM-2*, *GWM-3*, page 35, the Permittee states, “GWM-2 and GWM-3 are inspected on a quarterly basis and these wells are considered dry wells since its installation in 2005. Water was detected in GWM-2 in 2008 in the first quarter. Notification was given to NMED and OCD respectively. In 2010 during the second quarter inspection, GWM-2 and GWM-3 were found to have a water level of 1.5 feet in GWM-1 and 0.88 feet in GWM-3. Notification was given to NMED and OCD within 24 hours of finding.” The Permittee does not consistently state which wells are only inspected or both inspected and sampled. Clarify the first sentence to explain that when water is detected in these wells, NMED and OCD are notified and state whether the wells are sampled, purged dry, and then re-inspected to monitor for recharge or no action is taken beyond reporting the presence of water in the wells. In addition, there is a typographical error that references “GWM-1;” replace with “GWM-2” and ensure all wells are correctly referenced.

**Comment 20**

In Section 6.1 (Monitoring Wells That Have Constituent Levels Above Standards), *NAPIS-1*, *NAPIS-2*, *NAPIS-3*, *KA-3*, page 39, the x-axis “Date” for the figure, “Table 11: (KA-3 DRO/GRO Levels for 2008 through 2010)” is incorrect. Revise the figure to present the data ascending from the oldest date to the most recent date. Ensure all figures are accurate prior to submittal.

**Comment 21**

In Section 6.1 (Monitoring Wells That Have Constituent Levels Above Standards), *NAPIS-1*, *NAPIS-2*, *NAPIS-3*, *KA-3*, page 40, the Permittee states, “NAPIS-1 General chemistry parameters were below the applicable detectable standards with the exception of nitrates in the third quarter detected at 11.2 ppm, which is above the WQCC and MCL standards of 1.0 ppm. Nitrates also was detected at levels above the the MCL standards in NAPIS-1 in the second quarter at 2.0 ppm to 11.2 ppm in the third quarter. NAPIS-2 had fluoride and chloride levels above the WQCC applicable standard. NAPIS 3 and KA-3 had chloride levels above the WQCC standard 250 ppm with a high reading of 1100 ppm in NAPIS-3 and KA-3.” The Permittee did not report the analytical results or the WQCC screening levels for samples obtained from well NAPIS-2 for either fluoride or chloride. The Permittee must be consistent when reporting the screening levels and analytical results of the constituents throughout the revised Report. In addition, there is an extra “the” in the second sentence. Revise the Report accordingly.

**Comment 22**

In Section 6.2 (Wells with Constituent Levels below Standards), *BW-1*, *BW-2*, *BW-3*, paragraph 2, page 44, the Permittee states, “BW-1A and BW-1 depth to water measurements indicated that both of these wells were dry during the July 2010 annual sampling event. No samples were collected from BW-1A and BW-1B.” There is a typographical error in the first sentence. Revise the Report to correct the second well as “BW-1B.”

**Comment 23**

In Section 6.2 (Wells with Constituent Levels below Standards), *GWM-2*, *GWM-3*, paragraph 4, page 46, the Permittee states, “[f]ourth quarter inspections revealed there was a water level in both wells. Notification was given to NMED and NM OCD. Samples were collected and wells purged of remaining water.” The Permittee is not being consistent when reporting information from sampling and monitoring the wells, *GWM-2* and *GWM-3*. The previous sections provide the date that the water levels were first checked, the notification date to NMED and OCD, and the completion date of the weekly checks. In the bulleted items, the Permittee did not present date(s) for the fourth quarter sampling and inspections. Be consistent in reporting dates throughout the Report and include the missing information for *GWM-2* and *GWM-3* in the revised Report.

**Comment 24**

In Section 6.2 (Wells with Constituent Levels below Standards), *MW-1*, *MW-4*, *MW-5*, and *MW-2*, page 47, the Permittee introduces the “modified skinner list of metals and organics.” In Table 1 (2010 Monitoring Schedule) of Section 2.0 (Scope of Activities), page 21, the Permittee does not report modified Skinner List metals and organics for *MW-1*, *MW-4*, and *MW-5* as the suite of analytes to be tested; rather WQCC metals are reported. In Table 1, the Permittee does not list modified Skinner List metals and organics for *MW-2*; RCRA Skinner List is reported. Explain these discrepancies and provide corrections, where necessary, in the revised Report. In addition, “Skinner List” is a title. Ensure all analytical method and constituent information is consistent throughout the Report.

**Comment 25**

In Section 6.2 (Wells with Constituent Levels below Standards), *OW-1* and *OW-10*, paragraph 2, page 47, the Permittee states that “[t]hese wells are visually checked and water level measurement taken on a quarterly basis. Inspections were done on 2-11-09, 5-4-09, 8-10-09 and 10-27-09.” The inspection dates for wells *OW-1* and *OW-10* in 2010 are not included. Revise the Report to correct the dates of inspection for the 2010 reporting period and discuss accordingly.

**Comment 26**

In Section 6.2 (Wells with Constituent Levels below Standards), *OW-12*, page 48, the Permittee states, "OW-12 is sampled on an annual basis. Ground water samples are analyzed for the following constituents: Major cations/anions, 8260 plus MTBE, 8270 plus phenol, and WQCC Metals. Well was sampled on the following date: 7/22/10. BTEX plus MTBE, SVOCs and VOCs were at non-detectable levels." The Permittee listed several constituents and analytical methods to be analyzed for well OW-12; however, the chain of custody and analytical data indicate that this sample was analyzed for MTBE only. The Permittee did not present any analytical data results for BTEX, SVOCs, VOCs, or WQCC metals and cannot state that the results were not detected if the sample was not analyzed for these constituents. Review the entire section and ensure all analyzed constituents for each monitoring well correlate with Table 1 (2010 Monitoring Schedule) and the analytical lab results before discussing them in each section. Revise the Report to discuss the correct information and ensure the discussion regarding analytical results match chemical analyses that were conducted.

**Comment 27**

In Section 6.2 (Wells with Constituent Levels below Standards), *PW-2, PW-3, PW-4*, page 49, the Permittee provides information about the sampling frequency for these wells after each sample date and in the following paragraph. Remove the information after the sample dates in the revised Report to eliminate redundancy.

**Comment 28**

In Section 6.2 (Wells with Constituent Levels below Standards), *Evaporation Ponds 1 through 12B*, page 50, the Permittee states, "[p]ond water samples are analyzed for the following constituents: General Chemistry, 8260 plus MTBE, 8279 plus phenol, WQCC 20.6.2.3103 constituents, [biological oxygen demand (BOD), chemical oxygen demand (COD)], E-Coli Bacteria and RCRA 8 metals." There is a typographical error with the analytical method presented in this section; there is no analytical method "8729." Correct the analytical method to "8270" in the revised Report and ensure all sections report the correct analytical methods prior to submitting them for review.

**Comment 29**

In Section 6.2 (Wells with Constituent Levels below Standards), *Influent: Infl to AL-1; Infl to AL-2; Infl to EP-1; BW to EP-2*, page 51, the Permittee states, "[g]eneral chemistry parameters analyzed for Infl to AL-1 and AL-2 detected the following: Fluoride levels at 95 to 160 ppm. Sulfate levels ranged from 950 ppm to 990 ppm. [Diesel range organics (DRO)] was detected from a low of 1.3 ppm to a high of 60 ppm to Al-1. Infl to EP-1 fluoride levels ranged from 66

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ppm to 100 ppm and chloride ranged from 440 ppm to 220 ppm. Sulfate averaged 1413 ppm. DRO averaged 64.8 ppm.” The Permittee did not provide the correct name of the sampling location (AL-1 not Al-1) or correctly present the range of results for chloride (220 ppm to 440 ppm). Provide the corrections in the revised Report.

### **Comment 30**

In Section 6.3 (Deviations from OCD Groundwater Discharge Permit GW-032), paragraph 2, page 53, the Permittee states, “[a]ll other outfalls required to be sampled under the OCD Ground Water Discharge permit GW-032, were monitored and the data have been presented in Section 2.0 and Appendix J.” It is unclear why the Permittee references Section 2.0 instead of Section 8.0, which contains the data tables. Provide the correct reference in the revised Report.

### **Comment 31**

In Section 7.0 (Conclusions), paragraph 2, page 54, the Permittee states, “RW-1 and RW-6 are the only two recovery wells where hydrocarbons are recovered on a quarterly basis. In 2010 a total of 0.66 gallons was recovered compared to 1.78 gallons in 2009. RW-6 had a total of 0.15 gallons in 2010.” It is unclear whether the Permittee is reporting a “total of 0.66 gallons” for both RW-1 and RW-6 or only for RW-1. Clarify the statement in the revised Report.

### **Comment 32**

In Section 7.0 (Conclusions), paragraph 2, page 55, the Permittee states, “[a]lso located on the West side are a series of boundary (BW), observation (OW), monitoring (MW), process (PW), and shallow monitoring (SMW) wells. Among the MW and SMW monitoring, levels above the NMWQS of fluoride have been detected in some of the boundary wells. Among the MW and SMW monitoring wells in the west side, a few have shown traces of hydrocarbons. SMW-2 has shown a level of diethyl phthalate at 0.000189 ppm.” The Permittee redefines all the acronyms for the wells at the Refinery in this statement. The acronyms have already been defined and do not need to be reintroduced. Revise Section 7.0 of the Report to use only the acronyms. In addition, the Permittee is not consistent when addressing the location of wells using a capital “W” for “West side” in the first sentence and a lowercase “w” in the second to last sentence. Review the revised Report for consistency and errors. The Permittee also provides a concentration of diethylphthalate of 0.000189 ppm. The method detection limit for this compound is listed in EPA Method 8270D as 10 ug/L. It is unlikely that a concentration of 189 nanograms per liter could be quantified by this analysis. In Comment 14e of the May 2011 NOD for the 2009 Report, NMED requires the Permittee to provide scientific notation for results at or greater than 4 decimal places. Revise the Report to state diethylphthalate as 1.89E-04 ppm or correct the reported result and review the rest of the document to ensure all results are being presented as required.

**Comment 33**

There were several errors and missing analytical data results in Section 8.0 (Data Tables). The following comments pertain to Section 8.0:

- a. The Permittee was required to address formatting errors that were stated in Comments 14a, 14b, 14e, 14f, and 14o in the May 2011 NOD for the 2009 Report; however, not all of these errors were addressed. The Permittee must review the comments from the May 16, 2011 NOD and the comments in this NOD and make all required changes to the revised Report.
- b. There are several data tables in Section 8.0 that do not correctly highlight analytical results that are greater than the screening levels. For example, Table 8.1 (EFFLUENTS (AL-2 to EP-1, Pilot Effluent, NAPIS Effluent) BTEX Analytical Result Summary), page 57, the NAPIS Effluent sample result for toluene dated 9/9/2008 was bolded, but the analytical result is less than the screening levels for toluene. In addition, in Tables 8.10.1 (Evaporation Ponds (1 thru 12B) General Chemistry Analytical Result Summary) through 8.10.6 (Evaporation Ponds (1 thru 12B) Volatile Organics Analytical Result Summary), pages 108 through 121, the Permittee did not highlight any of the analytical results that were greater than the associated screening levels for each constituent. Review all data tables to check that the correct analytical results have been highlighted. Revise the Report as necessary.
- c. Several tables contain errors in column names, sample location names, definitions and/or notes for the data tables. For example, Table 8.1 (EFFLUENTS (AL-2 to EP-1, Pilot Effluent, NAPIS Effluent) BTEX Analytical Result Summary) on page 57 presents "NAPIS" as all capital letters in the title of the data table, but as "Napis Effluent" in the sample location. In addition, Table 8.2 (INFLUENTS (Infl to AL-1, Infl to AL-2, Infl to EP-1) BTEX Analytical Summary Results), page 68, the Permittee did not correctly label the sample location "Infl to AL-1," but as "Infl to Al-1" and incorrectly labeled the column as "Well ID." The locations in Table 8.2 are not wells. Table 8.4.2 (GWM-1, GWM-2, GWM-3) Total Metals Analytical Summary Results), page 93, show "\*\*\*" and "2" in the data table but the symbols are not defined in the footnotes. Review all data tables and correct all errors in the revised Report.
- d. Table 8.1 (EFFLUENTS (AL-2 to EP-1, Pilot Effluent, NAPIS Effluent) BTEX Analytical Result Summary), page 58, explain the difference between "NL = Not listed on laboratory analysis," and "NR = Not requested."
- e. Table 8.1 (EFFLUENTS (AL-2 to EP-1, Pilot Effluent, NAPIS Effluent) General Chemistry Analytical Result Summary), page 59 to 60, the Permittee must carry over the

sample location ID to the following page (60) to ensure the correct sample location remains with the corresponding analytical results. Check all data tables to ensure the sample location names are carried over to subsequent pages, where appropriate, in the revised Report.

- f. Table 8.1.2 (EFFLUENTS (AL-2 to EP-1, Pilot Effluent, NAPIS Effluent) BOD/COD Analytical Result Summary), page 61, the Permittee has left the "Parameters" section of the data table blank with no information to explain the meaning of blank cells for BOD and COD. However, Table 8.2.1 (INFLUENTS (Infl to AL-1, Infl to AL-2, Infl to EP-1) General Chemistry Analytical Result Summary), page 69, provides screening levels and notes for BOD and COD. Revise the Report to fill in missing information for all data tables and ensure information is consistent in the data tables.
- g. Table 8.1.3 (EFFLUENTS (AL-2 to EP-1, Pilot Effluent, NAPIS Effluent) Total Metals Analytical Summary Results), page 63, is a page with a title and notes, but the Permittee does not include a data table with the total metals analytical data results. Appendix L (Laboratory Analytical Reports) contains analytical results for the total metals for the sampling locations AL-2 to EP-1, Pilot Effluent, and NAPIS Effluent. Provide a data table that summarizes the analytical results for these sampling locations in the revised Report.
- h. Table 8.1.4 (EFFLUENTS (AL-2 to EP-1, Pilot Effluent, NAPIS Effluent) Dissolved Metals Analytical Summary Results), page 64, presents dissolved metals analytical data results for the sampling locations AL-2 to EP-1, Pilot Effluent, and NAPIS Effluent. The names of the constituents are cut off due to the small cell size. In addition, the Permittee is not consistently creating the same border format for all cells. Review all data tables to ensure that all names/labels fit in each cell and that all tables are formatted consistently.
- i. Table 8.1.6 (EFFLUENTS (AL-2 to EP-1, Pilot Effluent, NAPIS Effluent) Volatile Organic Analytical Summary Results), page 67, presents analytical results for VOCs. The column labeled "Aniline" contains analytical results that are presented in bold print but the EPA Tap Water screening level (RSL = 11.6 ug/L) is not listed for this constituent. Remove the bold format and review all data tables to check that the correct analytical results have been highlighted and bolded (*see* also Item b above). In addition, the analytical result for pyridine collected on 6/8/2010 was omitted. Provide the missing analytical results in the revised Report. Review all data tables to ensure that there are no missing analytical results or information in the data tables.
- j. Table 8.2 (INFLUENTS (Infl to AL-1, Infl to AL-2, Infl to EP-1) BTEX Analytical Summary Results), page 68, presents analytical results for BTEX. The Permittee must

provide footnote numbers to bring attention to the dated notes on the bottom of the page of the table. Revise the Report accordingly.

- k. Table 8.2.1 (INFLUENTS (Infl to AL-1, Infl to AL-2, Infl to EP-1) General Chemistry Analytical Summary Results), page 69, the Permittee presents general chemistry analytical results. Correct the units for "Specific Conductance" which are reported as microsiemens per centimeter ( $\mu\text{S}/\text{cm}$ ) in the laboratory analytical reports, but as milligrams per liter (mg/L) in the table. Revise the table and check all other data tables to ensure the correct units are presented in the revised Report.
- l. Table 8.4 (OW-1, OW-10) BTEX Analytical Summary Results), page 78, the Permittee presents BTEX analytical results for OW-1 and OW-10. The Permittee must provide all data results for OW-1 and OW-10, including results from previous sampling to compare to sample analytical results for 2010. Revise the table to include the data results for OW-1 and OW-10 prior to 2010. If samples were not analyzed prior to 2010, state as such in the results discussion.
- m. Table 8.4.2 (GWM-1, GWM-2, GWM-3) Total Metals Analytical Summary Results), page 93, presents the total metals analytical results for GWM-1, GWM-2, and GWM-3. However, the results shown include the dissolved metals results. Provide a separate data table for dissolved metals results in the revised Report.
- n. Several of the data tables have been printed on legal paper (8.5 X 14 inch). There are also several data tables that have different fonts and font sizes. Revise all the data tables to be consistent with the font size and font style. In addition, print all data tables that do not fit on an 8.5 X 11 inch paper onto 11 X 17 inch paper per Comment 14o of the May 2011 NOD.
- o. Section 8.10.2 (Evaporation Ponds (EP-1 thru EP-12B) BOD/COD, E-COLI Analytical Result Summary) is missing page 112. Provide the missing page in the revised Report.

#### **Comment 34**

In Section 9.0 (Well Summary Table), page 147, the Permittee states, "[t]he Well Data Summary Table was submitted with current survey measurements provided by DePauli Engineering on August 1, 2010 to NMED-HWB. The revised data table was disapproved and will be revised as requested by correspondence received from NMED-HWB on August 22, 2011. A "Notice of Disapproval Requirement to Resurvey Ground Water Monitoring Wells and Recovery Wells" was received by Western and is currently addressing the comments listed in the disapproval. Per NMED-HWB request a work plan will be submitted on or before December 30, 2011." The Permittee did not mention that the wells were resurveyed in 2010 because the previous survey

data was inaccurate. In addition, it is unclear if the unapproved survey data from *Requirement to Resurvey Ground Water Monitoring Wells and Recovery Wells* (dated December 5, 2011) was used to generate the figures from Section 10 (Figures). Revise Section 9.0 to acknowledge that the survey was conducted to correct the elevation inaccuracies from previous surveys and that the Well Data Summary Table will be submitted once the survey data has been approved by NMED. In addition, the Permittee did not submit a work plan, only a response letter to NMED. Revise the Report by removing the last sentence of the above-referenced paragraph.

**Comment 35**

Page 151, the figure's title has been printed on the following page (152). In addition, the Permittee was required to provide arrows on the figure indicating the direction of flow per Comment 17 of the May 2011 NOD. Provide a revised figure to include the title and arrows indicating the direction of groundwater flow in the revised Report.

**Comment 36**

The following comments pertain to Figures 6 (Facilities and Wells) through 13 (Product Thickness Map (Separate Phase Hydrocarbon Thickness – Nov 2010)):

- a. All figures did not include the figure number in the title, for example, "Figure 6: Facilities and Wells." In addition, the groundwater monitoring and recovery well names are not always visible (i.e., obscured by cross-hatching). Revise the figures to include both a description and the figure number in the title as well as ensure that all groundwater monitoring and recovery well names are visible on the figures.
- b. On Figure 6 (Facilities and Wells), page 153, the Permittee labeled monitoring wells near SWMU 1 (Aeration Basin) as "KA-1R, KA-2R, and KA-3R" instead of "NAPIS-1, NAPIS-2, and NAPIS-3." In addition, the Permittee did not provide a note explaining the cross-hatching found in the Figure 6. Revise the figure to be consistent with the monitoring well designations in the Report. In addition, provide a note that explains the purpose of the cross-hatching.
- c. Figures 7 (Typical South – North Profile, Western Refining – Gallup Refinery) through Figure 12 (Alluvial/Fluvial Upper Sand Water, Water Elevations (July 2010)) are considered to be inaccurate. The Permittee has not provided a data table presenting elevation data or a reference for the elevation data from these figures. Correct these figures using the approved elevation data and resubmit them with the revised Report.

- d. Figures 7 (Typical South-North Profile, Western Refining – Gallup Refinery) and 8 (South – North Section Westerly Plant Area) provide cross-sections based on monitoring wells and possible borings. The following must be completed for these figures.
  1. Provide different symbols or colors to differentiate between monitoring wells and borings and provide a legend to explain the symbols on the figure.
  2. Ensure scale and legends of cross-section figures are legible.
  3. Increase the font size of the elevation and station numbers so they are legible.
  4. Provide a north arrow and clearly label relevant features (e.g., ponds above and below cross-section in Figure 8).
  5. Provide consistent font sizes in figures.
- e. Figure 13 (Product Thickness Map (Separate Phase Hydrocarbon Thickness – Nov 2010)) provides information about the separate phase hydrocarbon (SPH) thicknesses near RW-1, RW-5, and RW-6. Provide the numerical values for all of the contours for each area presented in Figure 13 in the revised Report.

### **Comment 37**

Appendix A (Separate Phase Hydrocarbons Recovered (RW-1)) provides two tables with information regarding the recovery of SPH from RW-1; however, the Permittee does not provide any information or data for wells RW-5 and RW-6. Because SPH recovery has been mentioned in past reports, provide similar data tables with information for these recovery wells in the revised Report.

### **Comment 38**

Appendix B (Applicable Standards) provides a collection of information pertaining to the screening levels used to evaluate the analytical results from the Report. However, the Permittee must separate each set of standards by providing title pages for each section. For example, the title page for the New Mexico Water Quality Control Commission (WQCC) standards can be labeled as “Appendix B.1: WQCC Standards,” and so on. The Permittee also provided Table 2b (TPH Screening Guidelines – Vapor Migration and Inhalation of Groundwater (GW-2)) as a reference for the standard used to compare to the DRO analytical results; however, Table 2a (TPH Screening Guidelines for Potable Groundwater (GW-1)) was used. Provide the correct information in the revised Report. In addition, the Permittee provided the Regional Screening Level (RSL) Summary Table June 2011 in Appendix B. The Permittee positioned the table so

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that some of the tables faced backwards. The Permittee must check all data tables and submitted documents to ensure that all tables and documents face the same direction prior to submitting the Report for review. Recently, NMED sent out a notice that NMED's current Risk Assessment Guidance has been updated. These screening levels must be applied to future work plans and reports.

**Comment 39**

In Appendix C (Well and Field Logs), Well # BW-2A dated 7/14/2010, the Permittee did not calculate the well volumes or provide a water level for this well log. Provide a corrected well log with the revised Report.

**Comment 40**

NMED conducted a preliminary review of Appendices D (Summary of Waste Water Treated and Water Balance) through K (Monthly Flow Rate to NAPIS); however, these documents were submitted as a requirement for the OCD Discharge Permit and are subject to review by OCD. OCD may provide comments in separate correspondence.

**Comment 41**

In Appendix F (Summary of all EPA/NMED/RCRA Activity), the Permittee did not include the data obtained from resurveying the wells required by the May 2011 NOD. Include the data in the revised Report.

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The Permittee must submit a response letter and revised Report addressing all comments included in this NOD and provide the revised Report by **July 13, 2012**. All comments in this NOD that pertain to all reports must also be addressed in future Annual Reports.

If you have questions regarding this NOD please contact Leona Tsinnajinnie of my staff at 505-476-6057.

Sincerely,



John E. Kieling  
Acting Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
K. Van Horn, NMED HWB  
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C. Chavez, OCD  
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File: Reading File and WRG 2012 File  
HWB-WRG-11-004