WRG

NEW MEXICO ENVIRONMENT DEPARTMENT

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ENTERED

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 16, 2011

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

RE: NOTICE OF DISAPROVAL
ANNUAL GROUNDWATER MONITORING REPORT:
GALLUP REFINERY 2009
WESTERN REFINING COMPANY, SOUTHWEST, INC., GALLUP REFINERY
HWB-WRG-10-007
EPA ID # NMD000333211

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has completed its review of the *Annual Groundwater Monitoring Report: Gallup Refinery 2009* (Report), dated August 31, 2010, submitted on behalf of Western Refining Company, Southwest Inc., Gallup Refinery (Permittee). NMED hereby issues this Notice of Disapproval (NOD). NMED does not require the submittal of a revised report, but requires a response letter for all comments where a reply is required. All comments contained in this NOD must be implemented in future groundwater monitoring reports submitted to NMED and the Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD).

Comment 1

The format of the Groundwater Monitoring Report for the past four years (2006-2010) has made the review process difficult for several reasons. The Permittee failed to follow the monitoring schedule and analyze the samples according the analytical suites in the OCD Discharge Permit

(GW-032) and did not provide a discussion of deviations from the OCD Discharge Permit. Data table formatting is hard to follow making it difficult for NMED to review. Additionally, data (groundwater data and elevation data) presented in tables are inconsistent and sometimes incorrect.

Comment 2

The Permittee has not complied with all requirements included in NODs from previous Annual Groundwater Monitoring Reports:

a. Comment 10 in the NOD providing comments on the OCD 2006 Annual Groundwater Report (January 16, 2008), states, "[t]he Permittee must revise all tables in the Report to report all water/product measurements in units of hundredths of a foot. All future reports must report water/product measurements in hundredths of foot and not in inches." Similarly, Comment 19 from the NOD dated March 26, 2009 described recovery well information that was presented in feet and inches and that were rounded. NMED responded that "[i]n future Annual Reports, all measurements must be measured to an accuracy of 0.01 foot and be presented in the tables in feet...[i]f the data are collected in inches, they must be converted to feet and the Permittee must explain how the conversions are completed and include any applicable equations or conversion factors." The reported units for the well casing stick up lengths for the tables in Section 9.0 (Annual Well Data Summary Table) are presented in inches.

b. Comment 8 in the NOD providing comments on the OCD 2007 Annual Groundwater Report (and OCD Addendum) dated March 26, 2009 states, "[i]f the Permittee did not sample Potable Well #3 [PW-3] in 2008, it must be sampled in 2009. The Discharge Plan states this well is to be sampled every 3 years starting in 2008. However, because samples from this well had detections of 2-methylnapthalene exceeding the WQCC standard, the well must be sampled annually, unless otherwise directed by NMED." PW-3 was not sampled in 2009. The Permittee must sample well PW-3 during the next monitoring event and annually thereafter until further notice.

c. Comment 10 in the NOD providing comments on the OCD 2007 Annual Groundwater Report (and OCD Addendum) dated March 26, 2009, states, "[t]he Permittee analyzed some samples for RCRA metals and other samples for the larger list of WQCC metals. The Discharge Permit requires all samples to be analyzed for the WQCC metals list." According to the monitoring schedule in Section 2.0 (Scope of Activities 2009) RCRA 8 Metals are listed under the "Parameters of Analysis" for OW-50 and OW-52, KA-3, NAPIS-1, 2, and 3. The Permittee must analyze all water samples obtained from these wells for WQCC metals list.

d. Comment 16 in the NOD providing comments on the Rejected Annual Groundwater Report: Gallup Refinery – 2008 dated January 26, 2010 states, "[m]any of the tables are poorly organized and include inaccurate numbers and notes...[i]t is important to present the data in a clear and organized manner, because NMED uses the tables to review the Report and also as reference material." Although there has been improvement in the presentation of the data in this Report, NMED continues to have difficulty reviewing the data (groundwater data and well elevations and measurements) due to the substandard method of presentation.

The Permittee continues to fail to comply with the requirements of the NODs issued by NMED. Review past NODs dating back to 2006 and submit all future reports that comply with those NOD comments in addition to the comments provided in this letter. The Permittee has access to the Bloomfield Refinery's Annual Groundwater Report which may be used as a template, especially in the formatting of the tables. Further noncompliance with NMED's directions may result in an enforcement action.

Comment 3

Section 2.0 (Scope of Activities 2009), pages 15-16, provides a table of the monitoring schedule for the wells and surface water locations sampled during the reporting period. It appears that there are several typographical errors on this table.

a. BW-1A is reported as being sampled on 7/6/2009, however, BW-1A was not sampled during this reporting period. BW-1C was sampled. Explain this discrepancy in the response letter.

b. BW-2A and BW-3A are mentioned twice in the table. Correct this discrepancy in future reports.

c. According to the laboratory analytical data, BW-1C, 2A, 2B, 2C, 3B, and 3C were sampled 7/6/2009 and 8/3/2009, but the table only mentions the July 2009 sample date. Explain this discrepancy in the response letter.

d. RCRA 8 Metals are listed under the "Parameters of Analysis" for OW-50 and OW-52, KA-3, NAPIS-1, 2, and 3. According to the OCD Discharge Permit, these wells must be analyzed for WQCC metals. Explain this discrepancy in the response letter (*see* Comment 2c).

e. MW-2 is missing the sampling date, which is 07/16/2009. Add the sampling date to future reports.

f. Under "Parameters of Analysis" for PW-2, PW-3, and PW-4, cyanide is misspelled. Correct this typographical error in future reports.

g. PW-3 should have been sampled annually per Comment 8 of NMED's NOD Letter dated March 26, 2009. Explain this discrepancy in the response letter (*see* Comment 2b).

Comment 4

Section 2.0 (Scope of Activities 2009), pages 17, provides a table of the sampling frequency for the historical NAPIS spills. NMED has reviewed the OCD Discharge Permit and understands the table was directly copied from the OCD Discharge Permit. However, to provide consistency in the table formatting, revise future tables to present the list of analytes rather than the analytical method information. The analytical method must be discussed in the appropriate section of future Work Plans and reports. No response required.

Comment 5

Section 2.1 (New Monitoring Well Installations), page 17, states "[t]wo new shallow ground water observation wells (OW-50 and OW-52) were installed in October 2009, north of OW-13 and down gradient of OW-29 and PW-30. These wells were installed per NMED HWB request dated 5/28/09 '*Requirement to Install Monitoring Wells*', to determine if any constituent has migrated north, northwest of the refinery and potentially offsite...[t]hese two wells were added to the annual update to the Refinery Wide Groundwater Monitoring Plan to be sampled on a quarterly basis for the following parameters: VOC, SVOC, DRO/GRO, RCRA 8 Metals, and General Chemistry." According to the monitoring schedule, OW-50 and OW-52 were sampled on November 17, 2009 and note 11 states that the"[n]ew wells [were] drilled and installed on 10/5 and 10/7/2009 down gradient of OW-13 and OW-29. [The f]irst samples [were] collected by AMEC Earth and Environmental, Inc."

a. Clarify the date(s) samples were collected from OW-50 and OW-52.

b. The results of the samples collected by AMEC Earth and Environmental, Inc. are not reported in Section 6.0 (Groundwater Monitoring Results) or in the tables in Section 8.0 (Data Tables). The chemical analytical results for samples collected from these wells on November 17, 2009 also are not discussed in the Report. In future reports, all samples collected, including initial sampling results for newly installed wells must be discussed in the Report and all laboratory data must be submitted with the Report.

c. The Permittee lists RCRA 8 metals as a parameter for analysis for OW-50 and OW-52. According to NMED's NOD dated March 26, 2009, "[t]he Discharge Permit requires all

samples to be analyzed for the WQCC metals list." Explain this discrepancy in the response letter (*see* Comment 2c).

Comment 6

Section 6.1 (Monitoring Wells That have Constituent Levels Above Standards), OW-13, OW-14, OW-29, OW-30, page 25, paragraph 1 and 2, there are spelling errors with the following constituents: xylene, 1,2,4-trimethylbenzene, and sec-butylbenzene. Correct these typographical errors in future reports.

Comment 7

Section 6.1 (Monitoring Wells That have Constituent Levels Above Standards), NAPIS-1, NAPIS-2, NAPIS-3, KA-3, page 26, states "[g]round water samples were analyzed for BTEX, 8021B plus MTBE, SVOC, DRO, GRO, RCRA 8 Metals and General Chemistry." According to NMED's NOD dated March 26, 2009, "[t]he Discharge Permit requires all samples to be analyzed for the WQCC metals list." Explain this discrepancy in the response letter (*see* Comment 3d).

Comment 8

Section 6.1 (Monitoring Wells That have Constituent Levels Above Standards), NAPIS-1, NAPIS-2, NAPIS-3, KA-3, page 27, paragraph 1, states, "[d]ue to the close proximity of NAPIS 3 and KA 3 these wells were mis-identified by the field technician. NAPIS 3 was identified as KA-3 and KA-3 was identified as NAPIS-3 when samples were labeled. As a result analytical lab data received for these wells did not correspond to the correct well. Analytical lab data received for these wells have been manually corrected on the data sheets with the correct well identification." The laboratory data has been reviewed and all of the data sheets have not been corrected. Provide corrected data sheets (e.g., laboratory data and chain of custodies) to replace the current data sheets in the Report. Verify that this discrepancy did not carry over to monitoring activities (e.g., water level measurements and water chemistry measurements) in the response letter and include corrected tables as necessary.

Comment 9

Section 6.2 (Wells with Constituent Levels below Standards), pages 27-30, discusses the results from sampling and monitoring for the Report; however, the subsections are inconsistent when describing the analyses for each well. For example, on page 27, the section describing the activities at OW-11 lists the parameters for analyses as general chemistry, VOC, MTBE, SVOC, and WQCC metals. On page 30, there is no discussion of the analyses conducted for the samples

collected from evaporation ponds 1-8. In future reports, provide consistency by listing the analyses conducted for all groundwater and surface impoundment samples.

Comment 10

Section 6.2 (Wells with Constituent Levels below Standards), OW-11, page 27, paragraph 2, states, "[u]ranium was also present in this well at 0.216 ppm below the NMWQS and EPA MCLS but above the RRSL of 0.11 ppm." The NMWQS and EPA MCL for uranium is 0.03 mg/L. The uranium concentration detected in the sample obtained from OW-11 exceeds all of the screening levels. The WQCC screening levels presented in Appendix B have recently been updated and the updated screening levels can be found in *Title 20: Environmental Protection, Chapter 6: Water Quality, Part 2: Ground and Surface Water Protection, Item: 3103* (20.6.2.3103) with the following link: http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0002.htm. Correct all tables that inaccurately report uranium screening levels in future Annual Reports.

Comment 11

Section 6.2 (Wells with Constituent Levels below Standards), BW-3B, BW-3C, page 28, discusses sampling and monitoring that was conducted at these two wells; however, there is no mention of the results for BW-3A. The monitoring schedule on page 15 in Section 2 reports that BW-3A was sampled on 7/6/2009. In the response letter, explain why this information is missing from Section 6.2 and the laboratory data and provide the data for BW-3A, if available.

Comment 12

Section 6.2 (Wells with Constituent Levels below Standards), PW-2, PW-3, PW-4, page 29, paragraph 1, states, "PW-3 annual sampling was not done in 2009 as requested by NMED HWB, resulting from the detection of 2-methylnapthalene in 2007 of 0.032 ppm. PW-3 was sampled in 2008 and results were non-detect." Comment 8 from NMED's NOD dated March 26, 2009, states "[i]f the Permittee did not sample Potable Well #3 in 2008, it must be sampled in 2009. The Discharge Plan states this well is to be sampled every 3 years starting with 2008. However, because samples from this well had detections of 2-methylnapthalene exceeding the WQCC standard, the well must be sampled annually, unless otherwise directed by NMED. This information must be included in future Annual Reports. Pending the sampling results, the sampling frequency for this well may be modified." NMED did not direct the Permittee to discontinue groundwater sample collection from PW-3 in 2009. The Permittee was directed to collect a sample in 2009 if the sample was not collected in 2008. Further, the Permittee was also directed to sample this well annually. The Permittee must continue sampling at PW-3 annually until otherwise directed by NMED.

Comment 13

Section 7.0 (Conclusions), page 32, East Side Ground Water, states "[t]wo new wells (OW-50 and OW-52) were installed in October 2009 did not reveal the presence of MTBE and Benzene." The Permittee cannot draw any conclusions or make statements about the presence of constituents in the vicinity of OW-50 and OW-52 because all of the analytical results for OW-50 and OW-52 were not provided in the Report. Although laboratory data was provided for samples collected in November 2009, the laboratory data for October 2009 was not provided. The October 2009 laboratory data for these wells must be submitted with the response letter (*see* Comment 5).

Comment 14

The following comments pertain to Section 8.0 (Data Tables):

a. Several tables throughout this section have blank cells that are not explained in the "Notes" section. Also, there are some tables with asterisks (*) either with or without numerical values in cells. In future reports, provide a reference in the "Notes" section of the tables for all symbols.

b. Several tables throughout this section contain text and numerical values that do not fit in the cell. In future reports, format the tables so that all text and numerical values are complete and legible.

c. Several tables throughout this section are missing borders and dividers that separate the individual cells in the tables. In future reports, format the tables to include all cell borders and dividers.

d. In future reports, number the data tables. Numbering the tables aids the review process and the tables can easily be referenced in the Report. For example, the tables on pages 36-37 can be numbered as tables 8.2: Groundwater Data Tables – GWM-1, 8.2.1: Summary of BTEX detected in GWM-1 (2006-2009), 8.2.2: Summary of VOC & SVOC detected in GWM-1 (2007-2009), 8.2.3: Summary of Recoverable metals detected in GWM-1 (2006-2009), and 8.2.4: Summary of General Chemistry parameters in GWM-1 (2006-2009).

e. Several tables throughout this section are inconsistent when reporting results and screening levels. For example, page 39, Summary of Recoverable Metals detected in SMW-2 and SMW-4 (2006-2009), reports the arsenic RSL as 0.000045 mg/L but the RSL for magnesium as 6E-05 mg/L. In future reports, consistently report all screening

levels and results as ordinary decimal notation up to 4 decimal places (e.g., 0.1234 mg/L) and provide in scientific notation if greater than 4 (e.g., 4.5E-06 mg/L).

f. Several tables throughout this section are inconsistent with font size and font type. In future reports, provide tables with consistent formatted font sizes and type. If the table does not fit on 8.5" X 11" paper, use 11" X 17" sized paper instead. Also provide page numbers on the tables (see attached example).

g. In the "Notes" section on page 36, Summary of BTEX detected in GWM-1 (2006-2009), states "2007 samples were taken on January 1, 2008 due to inclement weather conditions in December 2007." This statement appears to be a typographical error because the samples mentioned in the note are not in this table. In future reports, provide the data mentioned in the "Notes" section or remove the statement.

h. On page 38, Summary of BTEX detected in SMW-2 and SMW-4 (2005-2009), states "[t]hese wells were not sampled in 2006." It also appears that SMW-2 was not sampled in 2007. In the response letter, explain why sampling was not conducted in 2006 for both wells and in 2007 only for SMW-2.

i. On page 39, Summary of Recoverable Metals detected in SMW-2 and SMW-4 (2006-2009), the reported SMW-4 results are from 10/28/2006. This result contradicts the statement from the previous table on page 38. In the response letter, explain why this sample was not analyzed for BTEX, SVOCs, VOCs, and general chemistry.

j. On pages 40, 45, 52, and 58, Summary of DRO and GRO Detected, the table reports TPH screening levels. In future reports, reference which TPH screening guideline table (2a or 2b) was used as the source for the screening levels.

k. On page 44, Summary of Recoverable Metals in NAPIS Wells (2008-2009), the results for seven metals (Ca, Mg, K, Na, Ba, Cr, and Pb) are listed for wells GWM-1, SWM-2, and SWM-4. However, on page 37 and 39, the results for 12 or 13 metals are reported for GWM-1, SWM-2 and SWM-4. In future reports, consistently report all metals analyzed or note that only results with detects are presented in the subject table.

l. On page 50, Summary of Recoverable Metals Detected in Process Wells (2008), the EPA MCL for uranium is reported as 0 mg/L. This is a typographical error. The EPA MCL for uranium is 0.03 mg/L. In future reports, ensure that all screening levels are correctly reported.

m. On page 50, Summary of BTEX detected in Process Wells (2004-2009), the results are presented in chronological order from previous sampling event to the current sampling

event. In future reports, be consistent when reporting sample dates starting with the most recent sample date and sequentially to the oldest sample date in all tables. Also report all data for the past four years.

n. On page 51, Summary of Recoverable Metals in Monitoring Wells (2006-2009), "--" defines non-detect results. The barium result for MW-1 (8/4/2008) is reported as <0.02 mg/L which is also non-detect. In future reports, provide non-detect results using the "<" and the detection or reporting limit for the constituent that is included in the laboratory report.

o. On page 53, Summary of BTEX detected in Outfalls (2009), there are several results that are greater than the RSL that are not bolded. In the benzene result column, samples collected for AL-2 to EP-1 on 12/2/2008 (0.012 mg/L) and 3/11/2008 (0.19 mg/L) are greater than the tapwater RSL (0.00041 mg/L). In future reports, provide consistency when highlighting results greater than applicable screening levels.

p. On page 53, Summary of BTEX detected in Outfalls (2009), there as several results that are italicized but there is no explanation for highlighting the result. In future reports, provide foot notes that explain all highlighted results.

Comment 15

The following comments pertain to Section 9.0 (Annual Well Date Summary Table - 2009):

a. Define all points of measurement for each elevation and depth measured (e.g., top of casing, ground surface) and define the measuring points in the Report, as well as identify them in the table.

b. On page 67, column "Total Well Depth (ft)," reports OW-12 (7/29/2009) as 145***. The corresponding note states, "OW-12 Annual inspection revealed well depth measurement to be 126 feet instead of 145 feet as listed." In the response letter, explain why the incorrect measurement was not replaced with the correct measurement in the table and provide the correct measurement in future reports.

c. On pages 67-70, it appears the measurements in the "Stick-up length (ft)" column are incorrect. The units of measure are defined as feet, but the measurements appear to be reported in inches. Verify the units of measurement and, if in inches, convert to feet. In future reports, all measurements must be reported in feet (*see* Comment 2a).

d. On page 67, column "Ground Level Elevations (ft)****," the corresponding note states, "Western has determined that in the past, these ground level elevations have been

incorrectly marked as well casing rim elevations. However, from a review of the well logs, we have determined that the elevation levels were in the table as rim casing levels when they should have been listed as ground surface elevations." It appears that all of the elevations and depths reported in this table are still incorrect. The ground level elevations and the well casing rim elevations are reported as the same elevation for many of the wells. According to the stick-up length measurements, none of the wells were installed with the casing rims flush with the ground surface. It also appears that the accuracy of the total depth of the wells is incorrect for many of the wells. The well logs were reviewed by comparing the listed table elevations to those recorded in the well logs, but the elevations in the well logs also appear to be incorrect. The Permittee must provide a corrected well data summary table revised in accordance with the attached example table.

It appears that all the wells need to be resurveyed to provide accurate information. NMED will address resurveying all wells at the refinery in a separate letter.

e. On pages 67-70, it appears that the measurements in the "Well Casing Bottom Elevations" are incorrect. In the response letter, describe the method used to determine this elevation.

f. The measurements in the table are presented in chronological order from previous sampling to current sampling. In future reports, be consistent when reporting measurement dates starting with the most recent measurement date sequentially back to the oldest measurement date.

g. Throughout this section, there are inconsistencies with font size and font type. In future reports, provide tables with consistent formatted font sizes and type. If the table does not fit on 8.5" X 11" paper, use 11" X 17" sized paper instead. Also include page numbers on the tables (see the attached example).

Comment 16

On pages 72-73, Figures 2 (Topographic Map 1 (Gallup Refinery Site)) and 3 (Aerial Photograph 1 (Gallup Refinery)), there is no scale or north indicator. Provide the scale and north indicator on all maps provided in future reports.

Comment 17

On page 75, Figure 5 (Localized Scale 1), the north indicator is obscured and there are no arrows to indicate the direction of flow. Provide the north indicator and direction of flow on all appropriate figures in future reports.

Comment 18

On Figure 6 (Well Locations 1 (Active Wells)), the symbols for some of the monitoring wells are bolded (e.g., Sonsela wells) and some are not (e.g., Chinle/Alluvium interface wells and process wells). In future reports, bold all symbols representing monitoring wells to make their locations more visible.

Comment 19

On Figure 6 (Well Locations 1 (Active Wells)), the numbered tanks within the vicinity of RW-5 and RW-6 are not legible. Provide a legible font for these tanks in future reports.

Comment 20

Throughout the review process, NMED found it difficult to compare the data to the laboratory results because of inconsistencies with the sample IDs and their corresponding locations. When compared to the OCD Discharge Permit and the Facility-wide Groundwater Monitoring Plan: Gallup Refinery (Groundwater Monitoring Plan), dated June 2010, it was difficult to match up the sampling schedule sample IDs and Report sample IDs to the laboratory data. In the future, the sampling schedule must be revised to provide the sample location description with the corresponding sample ID. The sample IDs must be consistently used throughout the monitoring period without modification to the names. The sample IDs must be consistent in the sampling schedule, the Ground Water Monitoring Plan, the Report, chain of custody forms, and analytical data. The sample locations must easily be identified with corresponding sample ID on the chain of custody forms and all reported laboratory data.

Comment 21

The following comments pertain to the table in Appendix A (Separate Phase Hydrocarbons Recovered (RW-1)):

a. There are several measurements on the first page of the table that are in feet and inches. Convert all measurements to feet (to an accuracy of 0.01 foot) in future reports. For example, on the first page, date of measurement 2/22/2005 the depth to product is 32'-5 ½". Report the measurement as 32.46 feet.

b. There are several notes within the measurement columns (e.g., 3/11 to 3/19/05 "Started Pumping Well on 3/11/05"). Provide separate columns for the method of removing the product (Method) and status of removal (Status). See the attached example table. Revise the table in future reports. Additionally, the notes within the measurement columns do not provide information about the initial depth to product, depth to water, and product

thickness prior to product removal. There are also instances where the pump is stopped to obtain measurements, but there is no information or indication if the measurement was collected the same day. For future monitoring events, record measurements prior to starting product removal activities and upon ceasing removal activities.

c. When reporting the measurement time, "hrs" does not have to follow the time. Remove this from future reports.

d. The table contains different font types and sizes. Be consistent with font size and type in future reports. If the table does not fit on 8.5" X 11" paper, use 11" X 17" sized paper instead. Also provide page numbers on the tables (see attached example).

e. It appears that there is a typographical error associated with the volume of product bailed/pumped for the RW-1 sample dated 10/28/2009 which is reported as 0.19 gallons. The recovery well inspection log for 10/28/2009 reports the volume of product bailed/pumped as 0.15 gallons. Correct the error in future reports.

f. Currently, the table reports the total product and water removed for all reporting periods. Add another table to provide a total for each year (e.g., 2005, 2006, 2007, 2008, and 2009) and provide a combined total for all years. See the attached table as an example. Also, verify that the totals add up to the reported total volume of water and product removed and include this data in future reports.

Comment 22

The following comments pertain to Appendix B (Listing of Applicable Standards):

a. Provide page numbers for all appendices in future reports.

b. The WQCC screening levels presented in Appendix B have recently been updated and the updated screening levels can be found in *Title 20: Environmental Protection, Chapter 6: Water Quality, Part 2: Ground and Surface Water Protection, Item: 3103* (20.6.2.3103). Report these standards in table format and include the table in future Annual Reports (*see* also Comment 10).

c. Identify the TPH screening level table used to derive the comparison values (*see* Comment 14j).

d. Provide references for all tables in Appendix B.

Comment 23

The following comments pertain to Appendix C (Well and Field Logs):

a. Include the full name in the title "Annual Well Sampling, Inspection, and Field Logs."

b. According to Section 6.1 (Monitoring Wells That have Constituent Levels Above Standards), NAPIS-1, NAPIS-2, NAPIS-3, KA-3, the field technician swapped the laboratory containers for the NAPIS-3 and KA-3 samples. NMED has reviewed the field notes/logs and did not find any notes pertaining to the mix up. Verify that only the samples were switched and not the field measurements obtained during the sampling and provide a discussion in the response letter. Also, provide field notes/logs that support the discussion.

c. Section 9.0 (Annual Well Date Summary Table - 2009), Appendix A (RW-1 Hydrocarbon Recovery Log), and the Recovery well inspection logs included in Appendix C all report the depth to product, depth to water, and product thickness. Appendix A and the recovery well inspection logs report the same measurements for all three parameters, but different values are reported in the data tables in Section 8.0. Provide the source of the measurements reported in Section 8.0. If all three sections are supposed to report the same measurements, explain the discrepancy in the response letter and provide replacement tables for Section 8.0 with the correct values.

d. According to the recovery well inspection logs, 0.23 gallons of product was recovered from RW-6 for 2009. Also, in the second, third, and fourth quarter, a thickness of at least 0.2 feet of product was reported but only a small amount of product was removed from RW-6. RW-1 contained 0.19 feet of product in the fourth quarter and 0.15 gallons of product was bailed from the well, but 0.22 feet of product was detected in RW-6 and only 0.04 gallons was removed. In the response letter, explain the variation in product recovery in RW-1 and RW-6 and why the amount recovered for 2009 was not included in the Report.

Comment 24

NMED did not review Appendix D through H and J through L. These documents were submitted as a requirement for the OCD Discharge Permit and are subject to review by OCD.

Comment 25

The following comments pertain to Appendix I (New Well Drilling Logs, Survey and Lab Data):

a. NMED reviewed this appendix and did not find drilling logs for the new wells. Provide the drilling logs and well construction diagrams for OW-50 and OW-52 with the response letter.

b. The monitoring schedule footnote for OW-50 and OW-52 in Section 2.0 (Scope of Activities 2009) states "[n]ew wells [were] drilled and installed on 10/5 and 10/7/2009 down gradient of OW-13 and OW-29. [The f]irst samples [were] collected by AMEC Earth and Environmental, Inc." These sample results were not included in this appendix. Include this data with the response letter (*see* Comment 5).

c. The data provided in this appendix reports barium concentrations detected in samples obtained from OW-50 and OW-52 as 0.042 mg/L and 0.027 mg/L, respectively. Although these concentrations are less than the screening level for barium (1.0 mg/L, New Mexico Water Quality Standards (NMWQS)), they were not mentioned in the Report. All detected concentrations must be reported in the appropriate tables and discussed in future reports. Include the detected concentrations in the next annual report.

d. Provide photos of the new wells to show the well casing structure. Section 9.0 (Annual Well Data Summary Table) reports a stick up length of 32.50 feet (inches?) for OW-50 but the top of casing elevation and ground surface elevation for OW-50 are the same value (6,914.37 feet). The stick up length listed for OW-52 is 26.5 feet (inches?), the top of casing elevation is 6,907.68 feet and the ground surface elevation is 6906.26 feet. Explain these discrepancies in the response letter.

Comment 26

In Appendix M (Analytical Data), all of the data sheets for NAPIS-3 and KA-3 have not been corrected. Section 6.1 (Monitoring Wells That have Constituent Levels Above Standards), states, "[a]nalytical lab data received for [NAPIS-3 and KA-3] have been manually corrected on the data sheets with the correct well identification." Provide the corrected data sheets (e.g., laboratory data and chain of custody forms) with the response letter (*see* also Comments 7 and 24b).

Comment 27

NMED understands that the OCD Discharge Permit was followed to conduct the sampling and monitoring activities during 2009, however, the Annual Groundwater Monitoring Plan was approved August 25, 2010 and should have been implemented for the second sampling event in 2010. The approved Annual Groundwater Monitoring Plan must be implemented for the 2011 sampling and all future monitoring and sampling until a revision is approved by NMED.

OCD COMMENTS

Appendix E: Summary Underground Waste Water Lines Tested

Comment 1

The operator places responsibility on NMED to notify OCD when line testing activities are being conducted at the site. The operator must provide direct notification to OCD at least 72 hours in advance of line testing under the discharge permit.

Appendix I: New Well Drilling Logs, Survey, Lab Data

Comment 2

Based on NMED's recent evaluation of survey datums and observations of the hydrogeologic depiction of ground water flow direction and hydraulic gradients, OCD is in agreement with NMED that the wells need to be resurveyed to establish corrected datums for all future hydrogeologic information (e.g., flow diagrams) based on each aquifer system (*see* NMED Comment 15d).

Comment 3

It has come to OCD's attention that Hall Environmental Laboratory appears to have low or unacceptable recovery for several constituents such as phenols, pyrene, and other SVOCs. RPDs were not reported in this report, which is considered unacceptable by EPA QA/QC Lab Standards. The operator must work with the laboratory to ensure that acceptable standards are attained for the QA/QC analytical data results.

Appendix K: Temporary Landfarm Analytical Results

Comment 4

It has come to OCD's attention that the Central LF Cell 91 and 110 exhibited chloride concentrations of 1900 and 650 ppm, respectively on 12/22/2008. Currently, the operator is working with OCD to comply with the OCD discharge permit performance standards so that soil from the landfarm can be reused elsewhere at the facility. The operator is also currently working to develop background criteria under OCD DP by May of 2011.

The Permittee must address all comments included in this NOD in future Annual Reports and submit a response letter and required replacement pages by July 8, 2011. The Permittee must also ensure that a complete set (i.e., the report and all appendices) of the Annual Report is provided to both NMED and OCD as a hard copy and an electronic version.

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
L. Tsinnajinnie, NMED HWB
C. Chavez, OCD
T. Larson, Western Refining Company, Gallup Refinery
A. Haines, Western Refining Company, El Paso, Texas

File: Reading File and WRG 2011 File
HWB-WRG-10-007

EXAMPLE

APPENDIX A

Table 1.1: RW-1 HYDROCARBON RECOVERY LOG

2/22/2005 to 10/28/2009

WESTERN REFINERY - GALLUP REFINERY

Jamestown, New Mexico

Measurement Date	Time	Quarter	Method	Status	Depth to Product (ft)	Depth to Water (ft)	Product Level Thickness (ft)	Product Bailed/Purged (gal)	Water purged (gal)
2/22/2005	830	1st			32.46	36.5	4.04	14	NR
3/11 to 3/18/05		1st	Pump	Start	NR	NR	NR	74	NR
3/18 to 3/23/05		1st	Pump	Continue pumping	NR	NR	NR	48	NR
3/23 to 4/1/05		1st	Pump	Continue pumping	NR	NR	NR	62	NR
4/1 to 4/4/05		1st	Pump	Shutdown to measure	NR	NR	NR	27	NR
4/5/2005	1130	2nd			34.75	38.92	4.17	NR	NR
12/29/2005	1400	4th	Bailer	Hand bailed	NR	NR	NR	0.5	4.5
9/12/2008	1430	3rd	None	Not bailed [1]	30.03	34.59	4.56	0	0

Notes: ft = feet NR: not recorded

gal = gallons

(1) 9/12/2008: RW-1 was not bailed because _____.

EXAMPLE

APPENDIX A

Table 1.2: Summary of Total Product Removed and Total Water Purged per year for RW-1 from 2005 to 2009

WESTERN REFINERY - GALLUP REFINERY

Jamestown, New Mexico

Year	Product Bailed/Purged (gal)	Water purged (gal)
2005		
2006		
2007		
2008		
2009		
Total	459.78	2571

EXAMPLE

Table 9.0: Annual Well Data Summary Table - 2009
WESTERN REFINERY - GALLUP REFINERY
Jamestown, New Mexico

Date of Installation	Well ID No.	Measurement Date	Casing Diameter (in.)	Ground Level Elevation (ft) [1]	Well Casing Rim Elevation (ft) [2]	Stick-up Length (ft) [3]	Well Casing Bottom Elevation (ft) [4]	Total Well Depth (ft) [5]	Depth to SPH (ft) [6]	SPH Thickness (ft) [7]	Depth to Water (ft) [8]	Groundwater Elevation (ft) [9]	Corrected Water Table Elevation (ft) [10]	Screened Interval Depth (ft) [11]	Purge Volume (gal) [12]
11/10/2003	BW-1A [13]	7/6/2009	2.00	6876.73	6876.73	52.50	6836.73	40.00 [15]	0.00	0.00	37.85	6838.88	NA	30-35	1.05
10/28/2003	BW-1B [13]	7/6/2009	2.00	6876.91	6876.91	28.63	6811.71	67.55 [16]	0.00	0.00	67.51	6809.40	NA	30-36	0.02
11/10/2003	BW-1C [14]	7/6/2009	2.00	6876.75	6876.75	54.25	6719.75	157.00	0.00	0.00	6.66	6870.09	NA	30-37	73.5
11/10/2003	BW-2A [13]	7/6/2009	2.00	6874.72	6874.72	51.25	6809.22	65.50	0.00	0.00	31.97	6842.75	NA	30-35	16.5
10/28/2003	BW-2B [14]	7/6/2009	2.00	6874.58	6874.58	54.00	6784.08	90.50	0.00	0.00	27.93	6846.65	NA	30-36	30.6
11/10/2003	BW-2C [14]	7/7/2009	2.00	6874.40	6874.40	35.75	6724.40	151.00	0.00	0.00	20.62	6853.78	NA	30-37	63.8
12/15/1980	OW-12 [14]	7/29/2009	4.00	6940.43	6940.43	22.50	6795.43	145.00 [17]	0.00	0.00	48.85	6891.58	NA	117.8-137.8	213.5

Note:
NA= Not Applicable
ND= Non-detect
SPH= Separate Phase Hydrocarbons
in. = inch
ft = feet
gal= gallons

(1) Ground Level Elevation (A): Measurement taken _____. Western has determined that in the past, these ground level elevations have been incorrectly marked as well casing rim elevations. However, from of the well logs, we have determined that the elevations levels were in the table as rim casing elevationswhen they should have been listed as ground surface elevations.
(2) Well Casing Rim Elevation: Measurement taken _____.
(3) Stick-up Length: Measurement taken _____.
(4) Well Casing Bottom Elevation: Measurement taken _____.
(5) Total Well Depth: Measurement taken _____.
(6) Depth to SPH (B): Measurement taken _____.
(7) SPH Thickness: Depth to Water - Depth to SPH. Measurement taken _____.
(8) Depth to Water (C): Measurement taken _____.
(9) Groundwater Elevation (D): Ground Level Elevation (A) - Depth to Water (C)
(10) Corrected Water Table Elevation (E): 0.8 * SPH Thickness (B) + Groundwater Elevation (D), only corrected in SPH is present
(11) Screened Interval Depth: Top of the screen to the bottom of screen
(12) Purge Volume: 3 Well Volumes
(13) Stratigraphy unit location of screen: Chinle/alluvium
(14) Stratigraphy unit location of screen: Sonsela Sandstone
(15) Annual inspection revealed well depth to be 37.89 feet. There was a water level in this well of 0.03 feet. Not enough water to bail or sample. Well is usually dry.
(16) Annual inspection revealed a water level of 0.04 feet. Not enough water to bail or sample. Well is usually dry.
(17) Annual inspection revealed well depth measurement to be 126 feet instead of 145 feet as listed.
(18) OW-50 and OW-52: Initial groundwater samples were taken by AMEC on 11/17/09 after well was allowed to develop.