AP - 111

Hydrocarbon Seep Interim Measures (SWMU No.12)

2017

State of New Mexico
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

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Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

March 2, 2018

Mr. William Bailey
Environmental Supervisor
Western Refining, Southwest Inc., Gallup Refinery
92 Giant Crossing Road
Gallup, New Mexico 87301

RE: APPROVAL WITH MODIFICATIONS
HYDROCARBON SEEP INTERIM MEASURES
2017 4TH QUARTER STATUS REPORT
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-18-001

Dear Mr. Bailey:

The New Mexico Environment Department (NMED) has reviewed the *Hydrocarbon Seep Interim Measures 2017 4th Quarter Status Report* (Report), dated January 31, 2018, submitted on behalf of Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Approval with Modifications. The Permittee must address the following comments.

Comment 1
In *Stand Pipes Recovery Records*, the volume of recovered hydrocarbons and water is recorded to an accuracy of one-gallon during the fourth quarter measurements. For example, the volume of recovered hydrocarbons and water for November 9, 2017 is recorded as 24 and 4,976 gallons, respectively. Previously, the measured volumes were recorded to an accuracy of five-gallons. Provide an explanation regarding the variance of the measuring techniques in a response letter.

Comment 2
In the first bullet of the list of activities conducted during fourth quarter 2017, the Permittee states, "[a]pproximately 38,400 gallons of groundwater/hydrocarbon mixture were recovered during the fourth quarter. That represents a reduction from the previous quarter at 59,400 gallons. An estimated volume of 1,145 gallons of SPH was recovered from the retention ditch in comparison to 535 gallons in the third quarter." Despite the reduction in total fluid recovery, oil recovery volume more than doubled during the fourth quarter compared to the oil recovery volume during the third quarter. Overall, the trend in oil recovery appears to be increasing throughout 2017. A variance in field measurement or collection techniques may have caused the apparent increase in recovered oil. Explain whether there was a variation in measurement or collection techniques. If there are other potential causes for the presence and increase in volume of recovered oil (e.g., spills or releases), then the Permittee must propose to investigate the cause. Provide an explanation in a response letter.

Comment 3
In the second bullet of the list of activities conducted during fourth quarter 2017, the Permittee states, "[a] [camera survey] contract has not yet been secured with the preferred vendor." In a response letter, describe whether the contracting issue has been resolved. If not, the Permittee must explain the nature of the issues or investigate the availability of alternative vendors. The Permittee must investigate potential on-going leaks and potential sources for releases to the environment through camera surveys as required in a timely manner.

Comment 4
In the third bullet of the list of activities conducted during fourth quarter 2017, the Permittee states, "[a]s the sumps are located beneath the truck loading rack that is constantly in service, any additional testing in this immediate area will require extensive internal coordination." Dye tracer may be introduced from locations other than the immediate sumps as long as the release origin is directly connected to the sumps. Investigate the possibility of introducing the dye from alternative locations that are more accessible. If the test can be conducted, the Permittee must include a proposal for the dye test in any future 2018 reports. If not, the Permittee must provide a more detailed explanation why the test cannot be conducted from other release location in a response letter. The Permittee must address all potential on-going leaks and potential sources of releases to the environment.

The Permittee must address all comments in this Approval with Modifications, and submit a response letter, cross-referencing NMED's numbered comments by **September 30, 2018**.

If you have questions regarding this Approval with Modifications, please contact Michiya Suzuki of my staff at 505-476-6059.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: K. Van Horn NMED HWB
M. Suzuki NMED HWB
C. Chavez OCD
A. Hains WRG
C. Johnson WRG
L. King EPA Region 6

File: Reading File and WRG 2018 File
HWB-WRG-18-001

State of New Mexico
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

February 1, 2018

Mr. William Bailey
Environmental Supervisor
Western Refining, Southwest Inc., Gallup Refinery
92 Giant Crossing Road
Gallup, New Mexico 87301

RE: DISAPPROVAL
INTERIM MEASURES REPORT
HYDROCARBON SEEP AREA
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-15-002

Dear Mr. Bailey:

The New Mexico Environment Department (NMED) has reviewed the *Revised Interim Measures Report Hydrocarbon Seep Area* (Report), submitted on July 8, 2016, on behalf of Western Refining Southwest Inc., Gallup Refinery (Permittee) and hereby issues this Disapproval with the following comments.

NMED Comment 1

The Permittee must include additional details in the revised Report to provide context and to eliminate misunderstanding by readers unfamiliar with the site. Revise the Report to include the following:

1. Include a figure(s) showing the location of areas and structures mentioned in the Report. To aid in understanding the objectives of the field activities, the figure must include: the heat exchanger bundle cleaning pad; tank T-231; tank TK-568; I/E shop; lab sinks;

sanitary lagoon; fresh water storage tank; tank water draw sewer cups; above-ground piping rack and other relevant buildings/structures/areas. The Permittee must not assume readers are familiar with the designations at the facility.

2. Additional description (e.g., composition, volume and concentration) regarding each dye test conducted in 2013 must be included in the revised Report. The Report describes the release locations of each test in Section 2.1; however, these locations are not clearly identified relative to the piping of the sewer line. Provide a diagram that shows the sewer line piping in relation to the dye release points and water/separate phase hydrocarbon (SPH) drains. Also, indicate the timing of breakthrough for each dye at the observed locations and address any concerns related to mixing them simultaneously during the 2013 test. Each dye was presumably introduced into the sewer system within a short time frame and observed in close proximity. The observation of dye was briefly documented in Table 1, and the orange and dark color solutions were detected in several wells. It is possible to create an orange or dark color solution if red and yellow/green dyes are mixed simultaneously. Also, if it is possible for higher concentrations of one dye to shade the color of another dye, the interpretation of the test will need to be reevaluated. Revise the Report to include a more thorough discussion of the dye tracer test.

3. Provide more specific information regarding the description of laboratory reports identified by # 1306C03, 1307524, and 1309D69 on page 2-6. These reports were identically described as "waste characterization soil sample of material excavated for sump installation west of Tank 101 and 102" although each sample was designated differently in the laboratory report. Revise the Report to distinguish the samples from each other and provide descriptions of where the samples were collected.

4. Provide additional details and discussion of the three dye tests conducted in 2016 as similarly required by NMED Comment 1.2 above in relation to the 2013 dye tests.

NMED Comment 2

The organization and accuracy of the Report makes it difficult for the reader to follow. Revise the Report to address the following:

1. Table 2 (Groundwater Analytical Results) contains groundwater analytical results for all analytical suites without appropriate subsections and subtitles. The table contains five categories of analytical results (1. BTEX/MTBE, 2. DRO/GRO/MRO/anions, 3. metals, 4. SVOCs, and 5. VOCs). No division or description was provided for each data set except for the VOCs set. Separate them into subsections (e.g., Table 2.1) and add subtitles (e.g., BTEX/MTBE) for better organization.

2. Table 2 (Groundwater Analytical Results) contains two separate analytical results for metals without clear distinction. Indicate whether the results are for dissolved or total metals concentrations. Also, modify the table to distinguish analytical method 200.7 from 200.8 for each analyte.

3. VOC results are not legible due to the small font size in Table 2. Use a legible font size and present the table on 11 x 17 paper.
4. Section 2.1 in the Report discusses six different actions taken for source identification without breaking the discussions into separate sections. Create subsections and add subtitles (e.g., Section 2.1.1 Completion of 14 Soil Excavations with a Backhoe) to provide more structure to the section so that the actions are more easily distinguished.
5. Multiple soil laboratory analytical reports are included in Appendix D; however, tables of the results comparing them to screening values are not provided. Provide a summary table(s) showing these results in the revised Report.
6. Typographical errors were found in the last paragraph of page 2-4, and the second paragraph of page 2-12 in the Report. Make the appropriate corrections in the revised Report.

NMED Comment 3

As stated in NMED's correspondence dated April 26, 2016 (Comment 10), NMED questions the quality of in-house laboratory results. On page 8 of the Permittee's correspondence dated July 28, 2016, the Permittee acknowledged the issue; however, continued to use the results of the distillation analysis in the revised Report. Discuss the data based on the results obtained from an independent third party laboratory (e.g., the result in laboratory report # 1307269-001), and remove the discussion related to the in-house distillation analyses from the Report.

NMED Comment 4

A chronological list of some events related to the hydrocarbon seep beginning on June 26, 2013 is provided below followed by NMED comments regarding the timing of activities:

- June 26, 2013 – A hydrocarbon seep was discovered west of crude oil storage tank T-102.
- August 14, 2013 – A breakthrough of dye was observed in wells MKTF-3 and MKTF-10. The investigation concluded there were leak(s) in the sewer piping system and a hydraulic connection between the area of seep and the sewer piping system.
- August 19, 2013 – An SPH release was discovered near tank T-3. The recovered SPH (1.5 barrels) was pumped into the sewer.
- August 27 and 28, 2013 – One of the sewer leaks was identified near the heat exchanger bundle cleaning pad through a camera survey.
- September 26, 2013 – A breakthrough of dye was observed in nine soil boring locations. The Report suggested the possibility of two separate release points from the sewer lines.
- October 23, 2013 – The leak near the bundle cleaning pad was repaired.
- May 27, 2016 – A breakthrough of dye was observed in the seep recovery standpipes.

Based on the cited chronology:

a. Approximately one and a half barrels of the recovered hydrocarbon was placed into the sewer system after it was discovered the system was leaking on August 19, 2013. Provide a justification for placing the recovered hydrocarbon into the leaking sewer line.

b. The sewer leak that was detected on August 27 and 28, 2013 was not repaired until October 23, 2013. Provide information regarding any interim measures (immediate corrective actions) taken by the Permittee between August and October (e.g., effort to bypass wastewater from the leaking piping) related to this leak. Also, provide the reason(s) it was not repaired until October 23, 2013.

c. Although one of the sewer leaks was repaired in October 23, 2013, the Permittee has been aware of other on-going leaks since September 26, 2013. Provide information related to the interim measures (immediate corrective actions) taken by the Permittee to address on-going leaks releasing untreated wastewater to the subsurface.

d. The unidentified sewer leaks may be contributing to the fluctuation of the water levels in MKTF wells as discussed in NMED's correspondence dated April 26, 2016 (Comment 16). Provide a discussion of the fluctuating water levels in MKTF wells in relation to wastewater flowrates.

e. Since the SPH release took place approximately 60 feet west (downgradient) of the sewer line near the heat exchanger bundle cleaning pad, wastewater previously released from the leak location may have "pushed" SPH already present in the ground toward the area of seep. Provide additional details on any known intermittent hydrocarbon releases that took place prior to June 26, 2013. Additionally, provide a chronological table for all releases from the marketing and crude oil tanks located downgradient of the heat exchanger bundle cleaning pad prior to June 26, 2013.

NMED Comment 5

NMED concurs that the sewer release point near the heat exchanger bundle cleaning pad is hydraulically connected to the area of seep. However, the release purportedly consisted of wastewater, not SPH itself, and it is not clear why the process wastewater contains such a large amount of SPH.

1. The Permittee must discuss how SPH enters the wastewater stream. Measure the SPH thickness in tanks T-27, T-28, and T-35, where the streams merge to evaluate the fractional content of SPH in the wastewater. Revise the Report to include a discussion of SPH in the tanks.

2. Provide an explanation for the presence of SPH in wastewater streams and whether the wastewater contains a large amount of SPH continuously or intermittently in the revised Report.

3. The recovered contaminated groundwater generated from environmental investigation activities appears to be released into the sewer at several drains. It appears that there are

still on-going unidentified leaks in the sewer piping. Presumably, some sewer drains (e.g., laboratory) are located upstream of the suspected leak locations. Ensure that the discharges are not creating further releases of contamination. Release all potentially contaminated fluids downstream of suspected leak locations unless repairs have adequately addressed the problem.

NMED Comment 6

Several soil samples were analyzed for characterization and disposal, as explained in Section 2.2 in the Report; however, the variance in the analytical parameters between samples was not explained. **Table A** shows the variance:

Table A: Variance in Soil Analytical Parameters

Lab Report #	GRO DRO MRO	Metals	VOCs	SVOCs	TCLP VOCs	TCLP SVOCs	TCLP Metals	RCI
1310486	x	x			x			x
1306C03	x				x	x	x	x
1307524	x				x	x	x	x
1309D69	x				x		x	x
1311343	x	x	x	x				
1311380	x				x		x	x
1406C66					x		x	
1605646		x	x	x	x	x		

Explain the reasons for the variance in analytical parameters among the sample sets in the revised Report.

NMED Comment 7

On page 2-4, the Permittee states, "[f]igure 11 in the July 2015 Interim Measures report shows the distribution of 1,1-dichloroethane (one of the most widely distributed chlorinated solvents) and it clearly appears to be sourced from a location near the leaking wastewater line. In addition, low concentrations of 1,1-dichloroethane and other solvents (e.g., trichloroethylene) were detected further to the southeast in well MKTF-37. Chlorinated solvents were historically used at the refinery in the maintenance shops and there may be additional sources in these areas." No groundwater samples were collected for VOC analyses from wells MKTF-5, 6, 7, 8, 12, 13, and 15 due to the presence of SPH although these wells are placed in the critical location for defining the contaminant plume. Thus, the identification of the source location of 1,1-dichloroethane appears to be inconclusive because the contaminant plume has not been fully defined. Moreover, there are still on-going unidentified leaks in the sewer piping and discharge entering the sanitary lagoon. See NMED comment 11. The highest 1,1-dichloroethane concentration was observed in the groundwater sample collected from well MKTF-25 located near the sanitary lagoon during the March 2015 sampling event. Revise the description of the source location from the revised Report and note that there may be additional sources.

NMED Comment 8

On page 2-7, the Permittee states, "[w]ater that has accumulated in the excavation along the seep area is being pumped out on a routine basis using a vacuum truck. The volumes of recovered groundwater and product (total) are provided in Table 5."

1. The title of Table 5 is "Hydrocarbon Seep Retention Ditch Recovery Volumes". Provide additional information pertaining to the hydrocarbon seep retention ditch (i.e., figures showing the location, construction date, and as built diagrams) in the revised Report.

2. It is not clear how the excavated soils were handled (e.g., storage or disposal). The analytical data for characterization and disposal were not included in the Report. Revise the Report to include this information.

3. Table 5 includes the recovery data from April 1, 2016 to June 29, 2016. A significant variability in the recovery rate is shown in Table 5. For instance, it took 26 days to recover 5,460 gallons between April 1 and April 27, 2016 but it took one day to recover 5,460 gallons on the following day April 28, 2016. There may be a correlation between the rate of sanitary lagoon discharge and recovery rate in the ditch. Evaluate for a correlation and discuss the findings in the revised Report.

NMED Comment 9

On page 2-7, the Permittee states, "[s]oil samples were not collected as the purpose of the wells was to define the impacts to groundwater."

1. NMED acknowledges the Permittee's intention of focusing on identification of primary sources and associated groundwater impacts; however, the Permittee must approach each corrective measure more holistically. Observations pertaining to hydrocarbon odor and PID readings are useful for site delineation. But they are insufficient and incomplete unless associated soil samples are also collected for laboratory analysis. Include soil sampling for laboratory analyses for every future soil boring or test pit installation in the area of the seep.

2. It is not clear how the drill cuttings were managed for storage or disposal. The analytical data for the characterization and disposal were not included in the Report. Revise the Report to include this information.

NMED Comment 10

On page 2-12, the Permittee states, "[f]igure 10 shows the distribution of benzene with two apparent source areas. The highest concentrations appear to originate in the area where the leak was identified in the wastewater line near the Bundle Cleaning Pad and a second area of high concentrations is located near the trucking loading rack." The benzene concentration in the groundwater sample collected from well MKTF-16, located approximately 30 feet west of the replaced sewer line, has been steadily increasing since October 2013. Table 2 indicates that the benzene concentration in the groundwater sample collected from well MKTF-16 was 9.9 mg/L in November 2013 and 28 mg/L in November 2015. The increasing trend of benzene concentrations in the groundwater samples obtained from well MKTF-16 suggests a possibility of another release near the replaced sewer. Submit a work plan to investigate and address increasing benzene concentrations in the vicinity of the replaced sewer.

NMED Comment 11

On page 11 of the correspondence dated July 28, 2016, the Permittee's response to NMED Comment 15 states, "[t]he sanitary lagoon (identified as Sanitary Lagoon #2 in earlier site documentation) located west of the crude oil storage tanks receives a small flow of sanitary wastewater from the warehouses, lab building and firehouse." Revise the Report to clarify the location of the sanitary lagoon and discharge piping from the refinery in a figure or drawing (See NMED Comment 1.1) and describe the nature of discharge (e.g., daily discharge volume, sources of the discharge, chemical analysis of the discharged wastewater) to the lagoon. Additionally, describe the construction details (size, presence/absence of the bottom liner, dike, etc.) of the sanitary lagoon. Also, explain why this wastewater flow is diverted from the main refinery wastewater system.

NMED Comment 12

On pages 2-12 and 2-13, the Permittee states, "[t]he elevated iron concentrations may be the result of the reduction of ferrous iron that occurs when iron acts an electron acceptor during biodegradation of either petroleum hydrocarbons or chlorinated solvents. Iron would serve as an electron acceptor after depletion of more active electron acceptors (e.g., oxygen, nitrate, and manganese)."

1. Clarify the Permittee's purpose for choosing "ferrous" rather than "ferric" in the statement. Make a correction in the revised Report if necessary. Ferrous ion is the reduced form of ferric ion. Elemental iron is the reduced form of ferrous ion.

2. The field analytical parameters such as dissolved oxygen concentration and oxidation-reduction potential (ORP) must be evaluated and presented to support the argument that reducing conditions and anaerobic degradation are occurring. Also, the ratio of total and dissolved iron concentrations must be examined to support the argument. Revise the Report as necessary.

3. Most chlorinated compounds at the facility are not subject to the degradation pathway stated by the Permittee. If the reduction of iron is proven to be taking place at the site, the Permittee must also investigate the anaerobic dechlorination pathway. Revise the Report to propose the submittal of a work plan to investigate the occurrence of anaerobic dechlorination.

4. The accumulation of vinyl chloride may be occurring based on the site's groundwater conditions. In the plan referenced in Item 3 above, propose to monitor and evaluate the groundwater for analytical parameters pertinent to the accumulation or degradation of vinyl chloride (e.g., concentrations of daughter products, dissolved oxygen, chloride, redox potential, and pH). Include all previously acquired data and interpretation of the existing data in the revised Report.

5. The Permittee must evaluate for the occurrence of hydrocarbon and MTBE degradation (e.g. concentrations of the electron acceptors, degradation byproducts, redox potential, and pH). Include all findings and interpretation of the existing data in the revised Report.

NMED Comment 13
On page 6 of the correspondence dated July 28, 2016, the Permittee's response to NMED Comment 7 states, "[N]MED states that the release was not reported to them or to [New Mexico Energy Minerals and Natural Resources Department (EMNRD) Oil Conservation Division] OCD. This is not correct; the release was previously reported to both agencies." Provide a copy of any documentation related to the reporting of the August 2013 incident to NMED and OCD. All releases greater than one barrels (42 gallons) must be reported to the NMED in accordance with Permit Section II.C. In addition, all releases of hazardous waste greater than one gallon must be reported to NMED.

NMED Comment 14
On page 9 of the correspondence dated July 28, 2016, the Permittee's response to NMED Comment 11 states, "[t]he total volume sent off-site was 830 cubic yards and Section 2.2 has been revised to reflect the final disposal volume."

Based on the data provided in the Report, the volume of excavated soil is estimated as follows: $(180 \times 20 \times 12 - \{[(8/12)/2]^2\pi \times 180\}) \times (1 \text{ cubic yard} / 27 \text{ cubic feet}) = 1{,}598$ cubic yards

If the estimated volume of excavated soil was 1,598 cubic yards, and the disposed volume was 830 cubic yards, then the remaining excavated soil (768 cubic yards) is unaccounted for. Revise the Report to describe how the remaining soil was managed.

NMED Comment 15
On page 10 of the correspondence dated July 28, 2016, the the Permittee's response to the NMED Comment 13 states, "[t]he possible sources of the chlorinated solvents are discussed in Section 2.1." The only discussion related to the potential sources of chlorinated solvents in Section 2.1 is found on page 2-4 stating, "[c]hlorinated solvents were historically used at the refinery in the maintenance shops and there may be additional sources in these areas." Provide more details regarding the "additional sources" and explain the nature of chlorinated solvent use at the facility. If chlorinated solvents are currently used or stored in certain location(s) at the Facility, identify them in the revised Report.

NMED Comment 16
On page 10 of the correspondence dated July 28, 2016, the Permittee's response to the NMED Comment 13 states, "[t]here is no reason to believe there is a connection between the presence of 2-methylnaphthalene in the shallow groundwater and the production interval of PW-3." Even if there is no hydraulic connection between shallow and deep aquifers, the contaminant could migrate into the deep aquifer through faulty construction of the well. Provide all available construction details for PW-3 (e.g., screen interval, depth of sand pack, or open borehole).

NMED Comment 17
On page 11 of the correspondence dated July 28, 2016, the Permittee's response to NMED Comment 14 states, "[a]ctually, many of the soil samples collected for confirmation and waste disposal did include SVOCs." **Table A** indicates the samples listed in laboratory report # 1310486, 1311380, and 1406C66 were not analyzed for SVOCs. All soil samples collected for

confirmation and waste disposal must be analyzed for SVOCs and other applicable parameters in the future.

NMED Comment 18

On page 2-10, the Permittee states, "[b]ased on well development and sampling efforts, many of the wells do not produce significant volumes of water with the exception of wells located near the sanitary lagoon, which is located approximately 400 feet directly west of the crude oil storage tanks". Also, on page 11 of the correspondence dated July 28, 2016, the Permittee's response to NMED Comment 15 states, "[t]he "sanitary lagoon (identified as Sanitary Lagoon #2 in earlier site documentation) located west of the crude oil storage tanks receives a small flow of sanitary wastewater from the warehouse, lab building and firehouse." A photograph of the "sanitary lagoon" located approximately 400 feet directly west of the crude oil storage tanks, taken on March 18, 2016 (Google Earth), is shown below:

1. A small stream from the southeastern corner of the "sanitary lagoon" is observed from the photograph. The discharge must be reported to OCD and the NMED Surface Water Quality Bureau.

2. The discharge may be a source of groundwater recharge allowing sufficient water production for well development and sampling in some wells. Examine this potential pathway and include a discussion in the revised Report.

NMED Comment 19
On page 11 of the correspondence dated July 28, 2016, the Permittee's response to the NMED Comment 15 is incomplete. NMED's concern was related to the new Sanitation Treatment Pond (STP)-1. Revise the Report to include an analysis on the relationship between water levels in the STP wells and the wastewater flowrate. Also, provide the boring logs and well construction details for STP1-NW and STP1-SW in the revised Report.

NMED Comment 20
On page 12 of the correspondence dated July 28, 2016, the Permittee's response to NMED Comment 16 states, "[a]lso, as SPH enters a well the measured "water level" will lower, thus recording a change in the "depth to groundwater" that is not reflected to the same extent in the corrected groundwater elevation."

1. The sentence must be revised for clarification. It is an incomplete sentence.

2. A formula for the corrected water level with a presence of SPH must be provided as a footnote in Table 1. Revise the Report to add the footnote.

NMED Comment 21
On pages 12 and 13 of the correspondence dated July 28, 2016, the Permittee's response to NMED Comment 17 states, "[i]t is not clear if the delayed entrance of SPH into the well screen at MKTF-15 is an indication of a change in SPH composition or thickness in the screened formation, or if it was just slow to enter the well due to location-specific conditions (e.g. relative viscosity of the SPH, formation physical properties, etc.)." MKTF-15 is the well closest to the crude oil tank. The lighter and more soluble fraction of crude oil (e.g., GRO and DRO) can migrate faster compared to the heavier and more insoluble fraction of crude oil (e.g., MRO). Collect a sample of SPH from MKTF-15 for an off-site fuel fingerprint analysis and compare it with an off-site laboratory fuel fingerprint analysis of a SPH sample collected from Seep Hole #6. Revise the Report to include the comparison. The analysis must be conducted by an independent analytical laboratory, which has been certified by the National Environmental Laboratory Accreditation Conference (NELAC).

NMED Comment 22
On page 13 of the correspondence dated July 28, 2016, the Permittee's response to NMED Comment 18 states, "[t]he water levels in wells MKTF-28 and MKTF-43 fluctuate near the top of the screen intervals, while the water level in MKTF-44 has recovered to the top of the well screen." When a well screen interval is submerged under the water table, SPH will likely not be detected since SPH accumulates on the interface. Also, a well having a submerged screened interval will not provide accurate information regarding the vertical extent of the product smear zone. Revise Table 1 to include additional columns for depth to groundwater relative to ground elevation, and well screened intervals. Identify the MKTF wells where the screened intervals are below the water table in a manner similar to that presented on the table in the Permittee's response to comments.

NMED Comment 23
On page 15 of the correspondence dated July 28, 2016, the Permittee's response to NMED Comment 21 states, "[t]he survey information for wells MKTF-35 through MKTF-45 was included as the last page of Appendix C." The information was provided as the last page of Appendix E rather than Appendix C. Revise the Report to correct the reference.

NMED Comment 24
On page 15 of the correspondence dated July 28, 2016, the Permittee's response to NMED Comment 22 states, "[t]he groundwater plume has been delineated with the exception to the north in the vicinity of Tank 102 and efforts to identify primary sources are on-going." Based upon the data, this statement is not accurate; it is inconclusive how far benzene, dissolved iron, naphthalene, and 1, 2, 4-trimethylbenzene plumes extend to the south from MKTF-35 and to the east from MKTF-37 and MKTF-39 on Figure 10, 12, 14, and 15, respectively. Also, the screened intervals in many MKTF wells are submerged below the water table; therefore, they are inappropriate for SPH plume delineation. Submit a work plan to propose to install three additional monitoring wells; one to the south of MKTF-35, and two to the east of MKTF-37 and MKTF-39, respectively, and propose to investigate the subsurface and groundwater north of Tank 102.

The Permittee must address all comments in this Disapproval and submit a revised Report to NMED. The Report must be submitted as two bound hard copies and an electronic version. Include a red-line strikeout version in electronic format showing where all revisions have been made. The revised Report must be accompanied with a response letter that details where all revisions have been made, and cross-referencing NMED's numbered comments. The revised Report must be submitted to NMED no later than **October 1, 2018**. In addition, submit a work plan to address Comments 10 and 24 for NMED review no later than **September 1, 2018**.

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

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau
New Mexico Environment Department

cc: K. Van Horn NMED HWB
M. Suzuki NMED HWB
C. Chavez OCD
A. Hains WRG
L. King EPA Region 6

File: Reading File and WRG 2018 File
HWB-WRG-15-002

Chavez, Carl J, EMNRD

From: O'Brien, Jessica L <Jessica.L.OBrien@andeavor.com>
Sent: Wednesday, January 31, 2018 5:28 PM
To: VanHorn, Kristen, NMENV; Chavez, Carl J, EMNRD
Cc: Pruner, Dave; Hains, Allen S
Subject: Gallup Refinery 4th Quarter 2017 Hydrocarbon Seep Status Report
Attachments: Hydrocarbon Seep 4th QTR 2017 (signed).pdf

All,

Please see the attached 4th Quarter 2017 Hydrocarbon Seep Status Report for the Gallup Refinery (EPA ID# NMD000333211) that has been sent via USPS certified mail. This scanned copy is being sent to you for your awareness.

Please feel free to contact me if you have any questions.

Sincerely,

Jessica O'Brien
Gallup Refinery – Environmental Supervisor
Jessica.L.Obrien@andeavor.com

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Chavez, Carl J, EMNRD

From: Riege, Ed <Ed.Riege@wnr.com>
Sent: Wednesday, January 25, 2017 2:41 PM
To: Kieling, John, NMENV
Cc: Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; VanHorn, Kristen, NMENV; king.laurie@epa.gov; Allen, Ann; Hains, Allen; Bailey, William
Subject: Hydrocarbon Seep Interim Measures Quarterly Status Report
Attachments: 201701241400.pdf

Dear Mr. Kieling,
Attached is the Hydrocarbon Seep Interim Measures Quarterly Status Report for fourth quarter 2016. A hard copy is being sent to you and Carl by certified mail.

Thanks,
Ed

Ed Riege
Remediation Manager

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Gallup, NM 87301

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January 31, 2018

Mr. John E. Kieling, Chief
New Mexico Environmental Department
2905 Rodeo Park Drive East, Bldg 1
Santa Fe, NM 87505-6303

RE: HYDROCARBON SEEP INTERIM MEASURES 2017 4TH QUARTER STATUS REPORT
WESTERN REFINING SOUTHWEST INC, GALLUP REFINERY
EPA ID# NMD000333211
HWB-WRG-15-006

Dear Mr. Keiling:

The attached fourth quarter report was prepared pursuant to Comment 22 in your letter dated April 26, 2016 on the Interim Measures Report Hydrocarbon Seep Area. Comment 22 requests a quarterly status report.

If you have any questions regarding the information being provided, please do not hesitate to contact Jessica O'Brien at (505) 722-0287.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Daniel J. Statile
Vice President Refining
Western Refining Southwest, Inc. – Gallup Refinery

Enclosure

cc: K. VanHorn, NMED (via e-mail)
C. Chavez, OCD (via e-mail)
D. Pruner, Gallup Refinery (via e-mail)
A. Hains, Andeavor (via e-mail)

QUARTERLY STATUS REPORT
HYRODROCARBON SEEP INTERIM MEASURES
WESTERN REFINING SOUTHWEST, INC – GALLUP REFINERY
Fourth Quarter 2017

Activities conducted during fourth quarter 2017

- Source Control – Western continued to remove separate-phase hydrocarbon (SPH) and groundwater from the standpipe sumps (S1 - S6). Approximately 659 gallons of SPH and 112,391 gallons of groundwater were recovered during the fourth quarter. This represents a decrease in SPH and groundwater recovery from the volumes recorded in the previous quarter (3rd Q 2017). The percent of SPH recovered of the total volume was approximately 0.6%, which is a slight decrease from the previous quarter of 0.7%. Recovery also continued from the retention ditch, which was previously excavated north of the standpipes (S1-S6). Approximately 38,400 gallons of groundwater/hydrocarbon mixture were recovered during the fourth quarter. That represents a reduction from the previous quarter at 59,400 gallons. An estimated volume of 1,145 gallons of SPH was recovered from the retention ditch in comparison to 535 gallons in the third quarter. A summary table of the volumes is attached.
- Camera Surveys – Earlier concerns over health and safety issues related to conducting the camera surveys delayed the activity because the original contractor arrived at the site without appropriate cameras or health and safety equipment. Western has since identified a contractor from out-of-state that does have the appropriate equipment and trained personnel to operate on the refinery. A contract has not yet been secured with the preferred vendor.
- Dye Tracer Tests – Western previously conducted dye tracer tests at several locations near the Truck Loading Rack. The earlier test methods and results were reviewed to determine if it is possible to refine the earlier tests by locating additional points where a tracer may be introduced to the wastewater pipelines/sump. As the sumps are located beneath the truck loading rack that is constantly in service, any additional testing in this immediate area will require extensive internal coordination. New dye tracer tests were conducted related to an assessment of the sanitary lagoon that is located west of the hydrocarbon seep area and this information will be presented under separate cover, as it was not focused on the hydrocarbon seeps.

Activities planned for first quarter 2018

- Source Control – Western will continue current recovery operations at the standpipe sumps and the retention ditch using a vacuum truck to pump SPH and groundwater from each of the sumps and the downstream retention ditch.

Western Refining Southwest, Inc. - Gallup Refinery

Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
9/3/2013*	682	3818	4500
9/3/2013*	367	4133	4500
9/4/2013	62	3938	4000
9/6/2013	62	3938	4000
9/9/2013	30	4470	4500
9/11/2013	30	4470	4500
9/13/2013	62	3938	4000
9/16/2013	135	5140	5275
9/18/2013	125	4111	4236
9/24/2013	58	4742	4800
9/26/2013	16	4220	4236
10/2/2013	29	4918	4947
10/8/2013	30	4569	4599
10/18/2013	109	5059	5168
10/28/2013	199	5379	5578
10/29/2013	63	4049	4112
11/12/2013	205	5275	5480
11/14/2013	78	5168	5246
11/18/2013	60	4539	4599
11/26/2013	80	5168	5248
12/3/2013	54	5169	5223
12/6/2013	57	4890	4947
12/12/2013	54	5169	5223
12/17/2013	58	4775	4833
12/24/2013	57	4890	4947
1/2/2014	88	4687	4775
1/6/2014	56	4947	5003
1/7/2014	32	3829	3861
1/9/2014	32	3448	3480
1/13/2014	29	4688	4717
1/16/2014	29	4688	4717
1/22/2014	29	4918	4947
1/29/2014	30	4449	4479
1/31/2014	61	4236	4297
2/4/2014	61	4236	4297
2/11/2014	60	4539	4599
2/18/2014	57	4890	4947
2/25/2014	57	4890	4947

2013 Totals	hydrocarbon recovered	water pumped	total fluid pumped
	2,705	**111,045**	**113,750**

Western Refining Southwest, Inc. - Gallup Refinery

Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
2/28/2014	63	3924	3987
3/4/2014	31	4327	4358
3/7/2014	29	4804	4833
3/12/2014	29	4804	4833
3/14/2014	30	4449	4479
3/17/2014	32	3829	3861
3/19/2014	32	3448	3480
3/24/2014	32	3703	3735
3/28/2014	32	3703	3735
4/1/2014	32	3703	3735
4/3/2014	32	3320	3352
4/7/2014	15	4220	4235
4/15/2014	30	4205	4235
4/23/2014	31	4327	4358
5/1/2014	31	4327	4358
5/7/2014	31	4081	4112
5/14/2014	30	4205	4235
5/22/2014	31	4081	4112
5/29/2014	31	3994	4025
6/6/2014	31	4081	4112
6/13/2014	32	3829	3861
6/20/2014	32	3955	3987
7/3/2014	31	4081	4112
7/10/2014	30	4205	4235
7/18/2014	30	4205	4235
7/28/2014	30	4205	4235
8/4/2014	30	4205	4235
8/14/2014	32	3955	3987
8/20/2014	31	4081	4112
8/29/2014	32	3955	3987
9/4/2014	32	3703	3735
9/11/2014	32	3576	3608
9/18/2014	32	3320	3352
9/26/2014	32	3448	3480
9/30/2014	32	3576	3608
10/7/2014	32	3320	3352
10/14/2014	32	3320	3352
10/21/2014	32	3955	3987
10/30/2014	32	3955	3987
11/7/2014	32	3320	3352

Western Refining Southwest, Inc. - Gallup Refinery

Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
11/12/2014	32	3320	3352
11/18/2014	32	3064	3096
12/4/2014	32	3829	3861
12/9/2014	32	3955	3987
12/15/2014	31	4081	4112
12/24/2014	31	4081	4112
12/30/2014	32	3703	3735
1/8/2015	31	4081	4112
1/21/2015	31	4327	4358
1/29/2015	32	3448	3480
2/6/2015	32	3448	3480
2/11/2015	32	3320	3352
3/5/2015	29	4688	4717
3/12/2015	31	4081	4112
3/16/2015	31	4081	4112
3/25/2015	32	3703	3735
3/31/2015	32	3955	3987
4/13/2015	32	3829	3861
4/20/2015	32	3703	3735
4/27/2015	16	4096	4112
4/30/2015	16	4096	4112
5/11/2015	16	4220	4236
5/29/2015	16	3971	3987
6/8/2015	16	4096	4112
6/12/2015	16	4096	4112
6/16/2015	16	4220	4236
6/24/2015	15	4583	4599
7/2/2015	16	4096	4112
7/8/2015	16	3971	3987
7/15/2015	15	4343	4358
7/22/2015	16	4220	4236
7/30/2015	16	3845	3861
8/6/2015	16	4220	4236
8/12/2015	16	3971	3987
8/17/2015	16	4220	4236
8/21/2015	16	3845	3861
8/26/2015	16	4220	4236
9/2/2015	15	4464	4479

2014 Totals	hydrocarbon recovered	water pumped	total fluid pumped
	2,108	**242,182**	**244,290**

Western Refining Southwest, Inc. - Gallup Refinery

Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
9/11/2015	14	5154	5168
9/25/2015	15	4464	4479
10/2/2015	15	4583	4599
10/8/2015	16	4220	4236
10/23/2015	16	4817	4833
10/29/2015	16	4220	4236
11/11/2015	14	4933	4947
11/20/2015	24	5554	5578
11/30/2015	43	4790	4833
12/10/2015	56	5323	5379
12/17/2015	56	4891	4947
12/24/2015	54	5114	5168
12/31/2015	54	5114	5168
1/7/2016	56	5323	5379
1/19/2016	51	5429	5480
1/26/2016	56	5003	5059
2/11/2016	54	5221	5275
2/17/2016	56	4891	4947
2/25/2016	56	5323	5379
3/4/2016	47	5625	5672
3/11/2016	49	5529	5578
3/17/2016	59	4658	4717
3/24/2016	45	5717	5762
3/31/2016	49	5529	5578
4/6/2016	38	5966	6004
4/15/2016	40	5888	5928
4/20/2016	56	5323	5379
4/27/2016	43	5804	5847
5/5/2016	47	5625	5672
5/9/2016	60	4419	4479
5/10/2016	45	5717	5762
5/17/2016	40	5888	5928
5/19/2016	51	5429	5480
5/24/2016	38	5966	6004
5/25/2016	49	5529	5578
5/27/2016	43	5804	5847
6/1/2016	45	5717	5762
6/3/2016	51	5429	5480

2015 Totals	hydrocarbon recovered	water pumped	total fluid pumped
	1,071	188,634	189,707

Western Refining Southwest, Inc. - Gallup Refinery

Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
6/7/2016	35	6039	6074
6/9/2016	47	5625	5672
6/13/2016	40	5888	5928
6/16/2016	38	5966	6004
6/20/2016	40	5888	5928
6/23/2016	49	5529	5578
6/27/2016	47	5625	5672
6/30/2016	60	4419	4479
7/6/2016	232	4768	5000
7/8/2016	109	3891	4000
7/11/2016	232	4768	5000
7/19/2016	300	5300	5600
7/21/2016	109	3891	4000
7/25/2016	232	4768	5000
7/28/2016	109	3891	4000
8/2/2016	232	4768	5000
8/9/2016	300	5300	5600
8/15/2016	232	4768	5000
8/18/2016	109	3891	4000
8/23/2016	232	4768	5000
8/25/2016	109	3891	4000
8/29/2016	232	4768	5000
9/1/2016	109	3891	4000
9/7/2016	232	4768	5000
9/9/2016	109	4187	4296
9/12/2016	109	3891	4000
9/15/2016	109	3891	4000
9/19/2016	232	4768	5000
9/27/2016	300	5300	5600
9/29/2016	109	3891	4000
10/5/2016	280	5180	5460
10/7/2016	280	5180	5460
10/10/2016	280	5180	5460
10/20/2016	109	3891	4000
10/26/2016	50	2450	2500
10/28/2016	109	3891	4000
11/1/2016	109	3891	4000
11/3/2016	109	3891	4000
11/8/2016	109	3891	4000
11/10/2016	109	3891	4000

Western Refining Southwest, Inc. - Gallup Refinery

Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
11/14/2016	109	3891	4000
11/23/2016	109	3891	4000
12/6/2016	109	3891	4000
12/8/2016	109	3891	4000
12/13/2016	303	4697	5000
12/15/2016	109	3891	4000
12/20/2016	109	3891	4000
12/27/2016	400	4600	5000
12/29/2016	109	3891	4000
1/10/2017	109	3891	4000
1/20/2017	167	4333	4500
2/2/2017	109	3891	4000
2/6/2017	231	4769	5000
2/17/2017	231	4769	5000
2/20/2017	109	3891	4000
3/1/2017	109	4891	5000
3/6/2017	167	4833	5000
3/9/2017	109	3891	4000
3/14/2017	231	4769	5000
5/8/2017	303	4697	5000
5/12/2017	167	3833	4000
5/15/2017	167	3833	4000
5/16/2017	10	5590	5600
5/18/2017	10	3090	3100
5/23/2017	40	5560	5600
5/24/2017	232	4768	5000
5/30/2017	20	5980	6000
6/1/2017	10	2990	3000
6/6/2017	100	7900	8000
6/8/2017	10	5990	6000
6/13/2017	10	5990	6000
6/15/2017	50	5950	6000
6/20/2017	10	5990	6000
6/22/2017	10	5990	6000
6/27/2017	20	5980	6000

2016 Totals	hydrocarbon recovered	water pumped	total fluid pumped
	8,668	**357,619**	**366,287**

Western Refining Southwest, Inc. - Gallup Refinery

Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
6/29/2017	10	5990	6000
7/5/2017	10	2990	3000
7/7/2017	50	8950	9000
7/11/2017	10	5990	6000
7/14/2017	10	5990	6000
7/17/2017	10	2990	3000
7/18/2017	20	2980	3000
7/20/2017	50	8950	9000
7/26/2017	75	5925	6000
7/27/2017	50	2950	3000
8/2/2017	75	5425	5500
8/4/2017	10	3490	3500
8/8/2017	25	5475	5500
8/10/2017	20	3480	3500
8/16/2017	15	4485	4500
8/21/2017	50	7950	8000
8/25/2017	25	2975	3000
8/29/2017	50	5950	6000
8/31/2017	20	2980	3000
9/6/2017	15	5985	6000
9/8/2017	15	2985	3000
9/12/2017	25	5975	6000
9/14/2017	75	3925	4000
9/19/2017	49	2951	3000
9/26/2017	49	3751	3800
9/28/2017	25	3775	3800
10/4/2017	50	3450	3500
10/6/2017	45	3455	3500
10/10/2017	25	5975	6000
10/12/2017	50	2950	3000
10/17/2017	50	5450	5500
10/19/2017	9	2841	2850
10/24/2017	19	5981	6000
10/26/2017	49	2451	2500
11/1/2017	49	5951	6000
11/7/2017	50	2950	3000
11/9/2017	24	4976	5000
11/14/2017	9	5991	6000

Western Refining Southwest, Inc. - Gallup Refinery

Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
11/15/2017	9	2991	3000
11/21/2017	9	5991	6000
11/22/2017	9	2991	3000
11/28/2017	9	5991	6000
11/30/2017	9	2991	3000
12/4/2017	25	7575	7600
12/7/2017	25	5975	6000
12/12/2017	19	7581	7600
12/14/2017	9	2991	3000
12/19/2017	9	2991	3000
12/21/2017	49	5951	6000
12/27/2017	49	5951	6000
Project Totals	**18,847**	**1,270,082**	**1,288,931**

	hydrocarbon recovered	water pumped	total fluid pumped
4th Qtr 2017 Totals	**659**	**112,391**	**113,050**
2017 Totals	**4,238**	**365,712**	**369,950**

* two loads were removed on this date

** based on estimates from measurements taken on 10/13/16 and 10/18/16

Western Refining Southwest, Inc. - Gallup Refinery
Retention Ditch Recovery Records

DATE	LOADS	water/oil mixture (gallons)	oil (gallons)
4/1/2016	1	5460	NR
4/27/2016	1	5460	NR
4/28/2016	1	5460	NR
5/5/2016	1	5460	NR
5/9/2016	0.75	4200	NR
5/13/2016	1	5460	NR
5/24/2016	1	5460	NR
5/26/2016	0.5	2730	NR
5/27/2016	1	5460	NR
6/1/2016	1	5460	NR
6/2/2016	1	5460	NR
6/6/2016	1	5460	NR
6/8/2016	1	5460	NR
6/9/2016	0.5	2730	NR
6/14/2016	1	5460	NR
6/16/2016	1	5460	NR
6/23/2016	1	5460	NR
6/29/2016	0.5	2730	NR
7/6/2016	1	5460	NR
7/8/2016	1	5460	NR
7/13/2016	1	5460	NR
7/21/2016	1	5460	NR
7/27/2016	1	5460	NR
8/3/2016	1	5460	NR
8/9/2016	2	10920	NR
8/10/2016	0.5	2730	NR
8/16/2016	1	5460	NR
8/17/2016	1	5460	NR
8/18/2016	0.5	2730	NR
8/23/2016	2	10920	NR
8/24/2016	1	5460	NR
8/26/2016	1	5460	NR
8/30/2016	1	5460	NR
9/1/2016	2	10920	NR
9/8/2016	2	10920	NR
9/14/2016	2	10920	NR
10/6/2016	1	5460	NR
10/7/2016	1	5460	NR
10/10/2016	2	10920	NR
10/20/2016	1	5460	NR
10/24/2016	1	5460	NR

Western Refining Southwest, Inc. - Gallup Refinery
Retention Ditch Recovery Records

DATE	LOADS	water/oil mixture (gallons)	oil (gallons)
10/26/2016	2	10920	NR
10/27/2016	1	5460	NR
10/31/2016	2	10920	NR
11/8/2016	2	10920	NR
11/10/2016	3	16380	NR
11/11/2016	0.77	4200	NR
11/15/2016	0.5	2730	NR
11/16/2016	1	5460	NR
12/6/2016	1	5460	NR
12/8/2016	1	5460	NR
12/14/2016	1	5460	NR
12/15/2016	3	15120	NR
2/21/2017	NR	5000	NR
3/8/2017	NR	10000	NR
3/10/2017	NR	4000	NR
3/14/2017	NR	10000	NR
3/15/2017	NR	4000	NR
3/16/2017	NR	1250	NR
3/17/2017	NR	5000	NR
5/16/2017	1	2000	20
5/17/2017	3	15000	NR
5/22/2017	1	5000	NR
5/23/2017	1	2800	20
5/24/2017	1	5000	NR
5/30/2017	1	3500	10
6/6/2017	1	3100	20
6/8/2017	2	5800	20
6/13/2017	1	2900	30
6/15/2017	1	3000	10
6/20/2017	1	2000	10
6/22/2017	1	3000	20
6/27/2017	2	5500	40
6/29/2017	1	2500	10
7/5/2017	2	5600	10
7/7/2017	1	3000	20
7/11/2017	1	3000	10
7/14/2017	1	3000	10
7/18/2017	1	2500	10
7/20/2017	1	3000	10

2016 Totals	LOADS	water/oil mixture
	62.52	340,200

Western Refining Southwest, Inc. - Gallup Refinery
Retention Ditch Recovery Records

DATE	LOADS	water/oil mixture (gallons)	oil (gallons)
7/27/2017	2	4500	10
8/3/2017	2	5000	20
8/4/2017	1	3000	20
8/9/2017	1	3000	25
8/16/2017	1	2000	10
8/25/2017	1	1500	50
8/31/2017	1	2000	40
9/7/2017	2	5200	80
9/15/2017	2	5500	100
9/20/2017	1	3800	100
9/26/2017	1	3800	10
10/4/2017	1	3500	100
10/12/2017	1	2800	95
10/19/2017	1	3000	100
10/26/2017	1	2500	100
11/1/2017	1	3000	100
11/7/2017	1	3000	100
11/15/2017	2	5500	100
11/22/2017	1	2000	100
11/28/2017	1	2000	50
12/4/2017	1	1500	100
12/14/2017	1	1500	50
12/19/2017	1	2500	100
12/27/2017	1	2000	50
Project Totals	**116.5**	**534,750**	**1,890**

	# of loads	water/oil mixture	oil
4th Qtr 2017 Totals	**14**	**34,800**	**1,145**
2017 Totals	**54**	**194,550**	**1,890**

Totals for oil only includes data since May 2017

Western Refining
GALLUP

WNR LISTED NYSE

Certified Mail # 7012 2920 0000 7606 4381

January 23, 2016

Mr. John E. Kieling, Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg 1
Santa Fe, New Mexico 87505-6303

RE: HYDROCARBON SEEP INTERIM MEASURES QUARTERLY STATUS REPORT
WESTERN REFINING SOUTHWEST, INC. GALLUP REFINERY
EPA ID # NMD000333211

Dear Mr. Kieling:

The attached fourth quarter report was prepared pursuant to Comment 22 in your letter dated April 26, 2016 on the Interim Measures Report Hydrocarbon Seep Area. Comment 22 requests a quarterly status report.

If there are any questions regarding the enclosed Investigation Report, please contact Mr. Ed Riege at (505) 722-0217.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Mr. Daniel J. Statile

VP Refining

Western Refining Southwest, Inc. – Gallup Refinery

Ed Riege

Remediation Manager

Western Refining Southwest, Inc. – Gallup Refinery

cc D. Cobrain NMED HWB
K. Van Horn, NMED HWB
C. Chavez, OCD
L. King, EPA
A. Allen, Western El Paso

QUARTERLY STATUS REPORT

HYDROCARBON SEEP INTERIM MEASURES

WESTERN REFINING SOUTHWEST, INC. - GALLUP REFINERY

FOURTH QUARTER 2016

QUARTERLY STATUS REPORT
HYRODROCARBON SEEP INTERIM MEASURES
WESTERN REFINING SOUTHWEST, INC – GALLUP REFINERY
Fourth Quarter 2016

Activities conducted during fourth quarter 2016

- Source Control – Western continued to remove separate-phase hydrocarbon (SPH) and groundwater from the standpipe sumps (S1 - S6). Approximately 3,010 gallons of SPH and 77,870 gallons of groundwater were recovered during the fourth quarter. This represents a decrease in both SPH and groundwater recovery from the volumes recorded in the previous quarter. However, as we noted in the last quarterly status report, we were working with a new operator to confirm accurate measurements are recorded for both recovered groundwater and SPH. The fourth quarter recovery volumes actually reflect an increase in the volume of SPH recovered in comparison to the 2nd quarter of 2016. Recovery continued from the retention ditch, which was previously excavated north of the standpipes (S1-S6). Approximately 131,250 gallons of groundwater/hydrocarbon mixture were recovered during the fourth quarter. A summary table of the volumes is attached.
- Camera Surveys – Due to concerns over health and safety issues related to conducting the camera surveys on the underground process sewer lines, the scheduled work could not be completed during the fourth quarter.
- Well Yield Tests – New yield tests were conducted on the standpipe sumps (S2- S6) to evaluate the potential for automated hydrocarbon recovery. The yield tests on the individual standpipe sumps indicate recovery rates of up to 3.0 gallons per minute (gpm).

Activities planned for first quarter 2017

- Source Control – Western will continue current recovery operations at the standpipe sumps and the retention ditch using a vacuum truck to pump SPH and groundwater from each of the sumps.
- Camera Surveys – Western has identified a new contractor that is qualified to appropriately deal with health and safety issues that are associated with the process sewer lines. Western plans to secure a contract with the new contractor during the first quarter. The schedule for cleaning of drain line entrances and conducting the camera surveys has not been established but will be upon execution of the new contract. This survey will include 200 feet of underground process sewer line from the fuel oil loading rack to the manhole leading to the sewer line that was replaced in 2014. Other lines scheduled include underground process sewer lines in the southwest and west sections of the tank farm.

Western Refining Southwest, Inc. - Gallup Refinery
Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
9/3/2013*	682	3818	4500
9/3/2013*	367	4133	4500
9/4/2013	62	3938	4000
9/6/2013	62	3938	4000
9/9/2013	30	4470	4500
9/11/2013	30	4470	4500
9/13/2013	62	3938	4000
9/16/2013	135	5140	5275
9/18/2013	125	4111	4236
9/24/2013	58	4742	4800
9/26/2013	16	4220	4236
10/2/2013	29	4918	4947
10/8/2013	30	4569	4599
10/18/2013	109	5059	5168
10/28/2013	199	5379	5578
10/29/2013	63	4049	4112
11/12/2013	205	5275	5480
11/14/2013	78	5168	5246
11/18/2013	60	4539	4599
11/26/2013	80	5168	5248
12/3/2013	54	5169	5223
12/6/2013	57	4890	4947
12/12/2013	54	5169	5223
12/17/2013	58	4775	4833
12/24/2013	57	4890	4947
1/2/2014	88	4687	4775
1/6/2014	56	4947	5003
1/7/2014	32	3829	3861
1/9/2014	32	3448	3480
1/13/2014	29	4688	4717
1/16/2014	29	4688	4717
1/22/2014	29	4918	4947
1/29/2014	30	4449	4479
1/31/2014	61	4236	4297
2/4/2014	61	4236	4297
2/11/2014	60	4539	4599

2013 Totals	hydrocarbon recovered	water pumped	total fluid pumped
	2,705	**111,045**	**113,750**

Western Refining Southwest, Inc. - Gallup Refinery
Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
10/14/2014	32	3320	3352
10/21/2014	32	3955	3987
10/30/2014	32	3955	3987
11/7/2014	32	3320	3352
11/12/2014	32	3320	3352
11/18/2014	32	3064	3096
12/4/2014	32	3829	3861
12/9/2014	32	3955	3987
12/15/2014	31	4081	4112
12/24/2014	31	4081	4112
12/30/2014	32	3703	3735
1/8/2015	31	4081	4112
1/21/2015	31	4327	4358
1/29/2015	32	3448	3480
2/6/2015	32	3448	3480
2/11/2015	32	3320	3352
3/5/2015	29	4688	4717
3/12/2015	31	4081	4112
3/16/2015	31	4081	4112
3/25/2015	32	3703	3735
3/31/2015	32	3955	3987
4/13/2015	32	3829	3861
4/20/2015	32	3703	3735
4/27/2015	16	4096	4112
4/30/2015	16	4096	4112
5/11/2015	16	4220	4236
5/29/2015	16	3971	3987
6/8/2015	16	4096	4112
6/12/2015	16	4096	4112
6/16/2015	16	4220	4236
6/24/2015	15	4583	4599
7/2/2015	16	4096	4112
7/8/2015	16	3971	3987
7/15/2015	15	4343	4358
7/22/2015	16	4220	4236
7/30/2015	16	3845	3861

2014 Totals	hydrocarbon recovered	water pumped	total fluid pumped
	2,108	**242,182**	**244,290**

Western Refining Southwest, Inc. - Gallup Refinery
Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
5/10/2016	45	5717	5762
5/17/2016	40	5888	5928
5/19/2016	51	5429	5480
5/24/2016	38	5966	6004
5/25/2016	49	5529	5578
5/27/2016	43	5804	5847
6/1/2016	45	5717	5762
6/3/2016	51	5429	5480
6/7/2016	35	6039	6074
6/9/2016	47	5625	5672
6/13/2016	40	5888	5928
6/16/2016	38	5966	6004
6/20/2016	40	5888	5928
6/23/2016	49	5529	5578
6/27/2016	47	5625	5672
6/30/2016	60	4419	4479
7/6/2016	232	4768	5000
7/8/2016	109	3891	4000
7/11/2016	232	4768	5000
7/19/2016	300	5300	5600
7/21/2016	109	3891	4000
7/25/2016	232	4768	5000
7/28/2016	109	3891	4000
8/2/2016	232	4768	5000
8/9/2016	300	5300	5600
8/15/2016	232	4768	5000
8/18/2016	109	3891	4000
8/23/2016	232	4768	5000
8/25/2016	109	3891	4000
8/29/2016	232	4768	5000
9/1/2016	109	3891	4000
9/7/2016	232	4768	5000
9/9/2016	109	4187	4296
9/12/2016	109	3891	4000
9/15/2016	109	3891	4000
9/19/2016	232	4768	5000
9/27/2016	300	5300	5600
9/29/2016	109	3891	4000

Western Refining Southwest, Inc. - Gallup Refinery
Retention Ditch Recovery Records

DATE	LOADS	water/oil mixture (gallons)
4/1/2016	1	5460
4/27/2016	1	5460
4/28/2016	1	5460
5/5/2016	1	5460
5/9/2016	0.75	4200
5/13/2016	1	5460
5/24/2016	1	5460
5/26/2016	0.5	2730
5/27/2016	1	5460
6/1/2016	1	5460
6/2/2016	1	5460
6/6/2016	1	5460
6/8/2016	1	5460
6/9/2016	0.5	2730
6/14/2016	1	5460
6/16/2016	1	5460
6/23/2016	1	5460
6/29/2016	0.5	2730
7/6/2016	1	5460
7/8/2016	1	5460
7/13/2016	1	5460
7/21/2016	1	5460
7/27/2016	1	5460
8/3/2016	1	5460
8/9/2016	2	10920
8/10/2016	0.5	2730
8/16/2016	1	5460
8/17/2016	1	5460
8/18/2016	0.5	2730
8/23/2016	2	10920
8/24/2016	1	5460
8/26/2016	1	5460
8/30/2016	1	5460
9/1/2016	2	10920
9/8/2016	2	10920
9/14/2016	2	10920
10/6/2016	1	5460
10/7/2016	1	5460
10/10/2016	2	10920
10/20/2016	1	5460

Western Refining Southwest, Inc. - Gallup Refinery
Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
9/3/2013*	682	3818	4500
9/3/2013*	367	4133	4500
9/4/2013	62	3938	4000
9/6/2013	62	3938	4000
9/9/2013	30	4470	4500
9/11/2013	30	4470	4500
9/13/2013	62	3938	4000
9/16/2013	135	5140	5275
9/18/2013	125	4111	4236
9/24/2013	58	4742	4800
9/26/2013	16	4220	4236
10/2/2013	29	4918	4947
10/8/2013	30	4569	4599
10/18/2013	109	5059	5168
10/28/2013	199	5379	5578
10/29/2013	63	4049	4112
11/12/2013	205	5275	5480
11/14/2013	78	5168	5246
11/18/2013	60	4539	4599
11/26/2013	80	5168	5248
12/3/2013	54	5169	5223
12/6/2013	57	4890	4947
12/12/2013	54	5169	5223
12/17/2013	58	4775	4833
12/24/2013	57	4890	4947
1/2/2014	88	4687	4775
1/6/2014	56	4947	5003
1/7/2014	32	3829	3861
1/9/2014	32	3448	3480
1/13/2014	29	4688	4717
1/16/2014	29	4688	4717
1/22/2014	29	4918	4947
1/29/2014	30	4449	4479
1/31/2014	61	4236	4297
2/4/2014	61	4236	4297
2/11/2014	60	4539	4599

2013 Totals	hydrocarbon recovered	water pumped	total fluid pumped
	2,705	**111,045**	**113,750**

Western Refining Southwest, Inc. - Gallup Refinery
Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
2/18/2014	57	4890	4947
2/25/2014	57	4890	4947
2/28/2014	63	3924	3987
3/4/2014	31	4327	4358
3/7/2014	29	4804	4833
3/12/2014	29	4804	4833
3/14/2014	30	4449	4479
3/17/2014	32	3829	3861
3/19/2014	32	3448	3480
3/24/2014	32	3703	3735
3/28/2014	32	3703	3735
4/1/2014	32	3703	3735
4/3/2014	32	3320	3352
4/7/2014	15	4220	4235
4/15/2014	30	4205	4235
4/23/2014	31	4327	4358
5/1/2014	31	4327	4358
5/7/2014	31	4081	4112
5/14/2014	30	4205	4235
5/22/2014	31	4081	4112
5/29/2014	31	3994	4025
6/6/2014	31	4081	4112
6/13/2014	32	3829	3861
6/20/2014	32	3955	3987
7/3/2014	31	4081	4112
7/10/2014	30	4205	4235
7/18/2014	30	4205	4235
7/28/2014	30	4205	4235
8/4/2014	30	4205	4235
8/14/2014	32	3955	3987
8/20/2014	31	4081	4112
8/29/2014	32	3955	3987
9/4/2014	32	3703	3735
9/11/2014	32	3576	3608
9/18/2014	32	3320	3352
9/26/2014	32	3448	3480
9/30/2014	32	3576	3608
10/7/2014	32	3320	3352

Western Refining Southwest, Inc. - Gallup Refinery
Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
10/14/2014	32	3320	3352
10/21/2014	32	3955	3987
10/30/2014	32	3955	3987
11/7/2014	32	3320	3352
11/12/2014	32	3320	3352
11/18/2014	32	3064	3096
12/4/2014	32	3829	3861
12/9/2014	32	3955	3987
12/15/2014	31	4081	4112
12/24/2014	31	4081	4112
12/30/2014	32	3703	3735
1/8/2015	31	4081	4112
1/21/2015	31	4327	4358
1/29/2015	32	3448	3480
2/6/2015	32	3448	3480
2/11/2015	32	3320	3352
3/5/2015	29	4688	4717
3/12/2015	31	4081	4112
3/16/2015	31	4081	4112
3/25/2015	32	3703	3735
3/31/2015	32	3955	3987
4/13/2015	32	3829	3861
4/20/2015	32	3703	3735
4/27/2015	16	4096	4112
4/30/2015	16	4096	4112
5/11/2015	16	4220	4236
5/29/2015	16	3971	3987
6/8/2015	16	4096	4112
6/12/2015	16	4096	4112
6/16/2015	16	4220	4236
6/24/2015	15	4583	4599
7/2/2015	16	4096	4112
7/8/2015	16	3971	3987
7/15/2015	15	4343	4358
7/22/2015	16	4220	4236
7/30/2015	16	3845	3861

2014 Totals	hydrocarbon recovered	water pumped	total fluid pumped
	2,108	**242,182**	**244,290**

Western Refining Southwest, Inc. - Gallup Refinery
Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
8/6/2015	16	4220	4236
8/12/2015	16	3971	3987
8/17/2015	16	4220	4236
8/21/2015	16	3845	3861
8/26/2015	16	4220	4236
9/2/2015	15	4464	4479
9/11/2015	14	5154	5168
9/25/2015	15	4464	4479
10/2/2015	15	4583	4599
10/8/2015	16	4220	4236
10/23/2015	16	4817	4833
10/29/2015	16	4220	4236
11/11/2015	14	4933	4947
11/20/2015	24	5554	5578
11/30/2015	43	4790	4833
12/10/2015	56	5323	5379
12/17/2015	56	4891	4947
12/24/2015	54	5114	5168
12/31/2015	54	5114	5168
1/7/2016	56	5323	5379
1/19/2016	51	5429	5480
1/26/2016	56	5003	5059
2/11/2016	54	5221	5275
2/17/2016	56	4891	4947
2/25/2016	56	5323	5379
3/4/2016	47	5625	5672
3/11/2016	49	5529	5578
3/17/2016	59	4658	4717
3/24/2016	45	5717	5762
3/31/2016	49	5529	5578
4/6/2016	38	5966	6004
4/15/2016	40	5888	5928
4/20/2016	56	5323	5379
4/27/2016	43	5804	5847
5/5/2016	47	5625	5672
5/9/2016	60	4419	4479

2015 Totals	hydrocarbon recovered	water pumped	total fluid pumped
	1,071	188,634	189,707

Western Refining Southwest, Inc. - Gallup Refinery
Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
5/10/2016	45	5717	5762
5/17/2016	40	5888	5928
5/19/2016	51	5429	5480
5/24/2016	38	5966	6004
5/25/2016	49	5529	5578
5/27/2016	43	5804	5847
6/1/2016	45	5717	5762
6/3/2016	51	5429	5480
6/7/2016	35	6039	6074
6/9/2016	47	5625	5672
6/13/2016	40	5888	5928
6/16/2016	38	5966	6004
6/20/2016	40	5888	5928
6/23/2016	49	5529	5578
6/27/2016	47	5625	5672
6/30/2016	60	4419	4479
7/6/2016	232	4768	5000
7/8/2016	109	3891	4000
7/11/2016	232	4768	5000
7/19/2016	300	5300	5600
7/21/2016	109	3891	4000
7/25/2016	232	4768	5000
7/28/2016	109	3891	4000
8/2/2016	232	4768	5000
8/9/2016	300	5300	5600
8/15/2016	232	4768	5000
8/18/2016	109	3891	4000
8/23/2016	232	4768	5000
8/25/2016	109	3891	4000
8/29/2016	232	4768	5000
9/1/2016	109	3891	4000
9/7/2016	232	4768	5000
9/9/2016	109	4187	4296
9/12/2016	109	3891	4000
9/15/2016	109	3891	4000
9/19/2016	232	4768	5000
9/27/2016	300	5300	5600
9/29/2016	109	3891	4000

Western Refining Southwest, Inc. - Gallup Refinery
Stand Pipes Recovery Records

DATE	hydrocarbon recovered (gallons)	water pumped (gallons)	total fluid pumped (gallons)
10/5/2016	280	5180	5460
10/7/2016	280	5180	5460
10/10/2016	280	5180	5460
10/20/2016	109	3891	4000
10/26/2016	50	2450	2500
10/28/2016	109	3891	4000
11/1/2016	109	3891	4000
11/3/2016	109	3891	4000
11/8/2016	109	3891	4000
11/10/2016	109	3891	4000
11/14/2016	109	3891	4000
11/23/2016	109	3891	4000
12/6/2016	109	3891	4000
12/8/2016	109	3891	4000
12/13/2016	303	4697	5000
12/15/2016	109	3891	4000
12/20/2016	109	3891	4000
12/27/2016	400	4600	5000
12/29/2016	109	3891	4000
Project Totals	**14,609**	**904,370**	**918,981**

	hydrocarbon recovered	water pumped	total fluid pumped
4th Qtr 2016 Totals	**3,010**	**77,870**	**80,880**
2016 Totals	**8,668**	**357,619**	**366,287**

* two loads were removed on this date

** based on estimates from measurements taken on 10/13/16 and 10/18/16

Western Refining Southwest, Inc. - Gallup Refinery
Retention Ditch Recovery Records

DATE	LOADS	water/oil mixture (gallons)
4/1/2016	1	5460
4/27/2016	1	5460
4/28/2016	1	5460
5/5/2016	1	5460
5/9/2016	0.75	4200
5/13/2016	1	5460
5/24/2016	1	5460
5/26/2016	0.5	2730
5/27/2016	1	5460
6/1/2016	1	5460
6/2/2016	1	5460
6/6/2016	1	5460
6/8/2016	1	5460
6/9/2016	0.5	2730
6/14/2016	1	5460
6/16/2016	1	5460
6/23/2016	1	5460
6/29/2016	0.5	2730
7/6/2016	1	5460
7/8/2016	1	5460
7/13/2016	1	5460
7/21/2016	1	5460
7/27/2016	1	5460
8/3/2016	1	5460
8/9/2016	2	10920
8/10/2016	0.5	2730
8/16/2016	1	5460
8/17/2016	1	5460
8/18/2016	0.5	2730
8/23/2016	2	10920
8/24/2016	1	5460
8/26/2016	1	5460
8/30/2016	1	5460
9/1/2016	2	10920
9/8/2016	2	10920
9/14/2016	2	10920
10/6/2016	1	5460
10/7/2016	1	5460
10/10/2016	2	10920
10/20/2016	1	5460

Western Refining Southwest, Inc. - Gallup Refinery
Retention Ditch Recovery Records

10/24/2016	1	5460			
10/26/2016	2	10920			
10/27/2016	1	5460			
10/31/2016	2	10920			
11/8/2016	2	10920			
11/10/2016	3	16380			
11/11/2016	0.77	4200			
11/15/2016	0.5	2730			
11/16/2016	1	5460			
12/6/2016	1	5460			
12/8/2016	1	5460			
12/14/2016	1	5460			
12/15/2016	3	15120		**LOADS**	**water/oil mixture**
			4th Qtr 2016 Totals	**24.27**	**131,250**
Project Totals	**62.5**	**340,200**			